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The book presents the author's practical experience of publishing research articles in leading international journals recognized worldwide, covering the entire process from manuscript preparation to publication and indexing in journal databases. By engaging with the text, analyzing the provided examples, and understanding the role of practical components and visual elements in scholarly writing, readers are expected to develop the capacity to produce high-quality academic articles. Although success may not be immediate, sustained effort is emphasized as the key to achieving publication.

For the first time, the full publication process is described in a step-by-step manner with comprehensive attention to detail. The book offers exhaustive recommendations regarding authors' actions across a wide range of scenarios encountered during manuscript preparation and submission. A substantial number of illustrative examples are provided to enable authors to rely on established, practice-tested approaches rather than navigating fragmented and often contradictory sources. The work also elucidates the dynamics of interaction among authors, manuscript editors, reviewers, and journal editors, and outlines the subsequent stages following publication, including proper indexing in journal databases.

The book is intended for the global academic community. Students, lecturers, researchers, and other members of the scholarly field will find answers to key questions and gain a clear understanding of the next steps in the publication pathway. University departments established to enhance publication performance, as well as individual coordinators supporting authors, may use the book to identify gaps in current practices and to improve the efficiency and productivity of collaborative processes, ultimately contributing to a sustained increase in publication output.

Novice authors, in particular, are provided with a structured, step-by-step guide to publishing in high-impact international journals, helping them avoid common pitfalls encountered in academic publishing practice.

The electronic book can be downloaded via the link izd2.com

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Preface

The publication of a research article in a reputable journal indexed in internationally recognized databases such as Scopus and Web of Science becomes a routine task provided that four key conditions are met:

1. The manuscript is of high quality and aligned with the standards exemplified by leading articles in the target journals.
2. Appropriate journals are carefully selected based on the content and thematic focus of the manuscript.
3. The manuscript is properly formatted in accordance with the requirements of the chosen journal.
4. Timely monitoring and management of all communications are maintained throughout the publication process, up to the point of indexing in the database.

The objective is singular: to achieve publication.

At first glance, the publication process may appear relatively straightforward. In practice, however, it is both complex and time-consuming. Accordingly, patience and persistence are essential.

In the contemporary academic environment, there is a widespread expectation for rapid results. However, publication in a high-quality international scientific journal does not conform to such expectations. Even under highly favorable conditions, the process typically requires approximately 6–8 months. More realistically, the full cycle - from initial manuscript preparation to final publication - takes around 12 months.

Finally, to conclude this section, the stages of the article publication process may be outlined concisely as follows:

1. Selection of the research topic.

The author identifies a topic in which they possess sufficient expertise.

Outcome: defined research topic.

2. Selection of journals aligned with the topic.

The author identifies journals that correspond to the thematic focus of the study.

Outcome: list of target journals.

3. Refinement of the research topic.

The author adjusts the title and scope of the topic to align with the requirements and focus of the selected journal(s).

Outcome: finalized topic for manuscript preparation.

4. Manuscript preparation.

The author prepares the manuscript in accordance with the submission guidelines of the selected journal.

Outcome: completed manuscript.

5. Initial review of the manuscript.

The author seeks feedback from a supervisor or an experienced researcher with prior publications in reputable journals.

Outcome: detailed review with comments and recommendations.

6. Revision of the manuscript.

The author revises the manuscript based on the feedback received.

Outcome: improved manuscript.

7. Secondary review.

The supervisor or experienced researcher re-evaluates the revised manuscript and provides additional recommendations to enhance quality.

Outcome: further detailed feedback.

8. Second revision.

The author implements additional revisions to ensure a higher level of quality.

Outcome: further improved manuscript.

9. Final refinement.

The author reviews recent issues of the selected journal(s) and makes final adjustments to ensure alignment with journal standards and expectations.

Outcome: high-quality manuscript ready for submission.

10. Translation into English.

The manuscript is translated into academic English by a professional translator, or by the author if they possess a sufficiently advanced level of proficiency.

Outcome: manuscript prepared in English.

11. Selection of reviewers.

Where possible, the author, supervisor, or experienced researcher may identify qualified members of the academic community - particularly those with relevant publication records - who could potentially serve as reviewers.

The author identifies up to five potential reviewers who are capable of providing informed evaluations of the manuscript.

Outcome: selected reviewers (ideally five individuals).

12. Formatting the manuscript in accordance with journal requirements.

The author or a technical editor prepares the manuscript in line with the formatting and submission guidelines of the selected journal(s).

Outcome: properly formatted manuscript.

13. Approval of the final manuscript version.

The author reviews the final version of the manuscript in collaboration with co-authors, ensuring the absence of inaccuracies, with particular attention to the correct representation of personal and affiliation details.

Outcome: manuscript approved for submission.

14. Submission of the manuscript.

The author submits the manuscript to the selected journal(s) via the respective electronic submission systems.

Outcome: access to the journal's submission system (login credentials).

15. Monitoring the manuscript status.

The author tracks the progress of the manuscript within the journal's electronic system, regularly checks email correspondence, and, where necessary, sends follow-up inquiries to the journal editor regarding the current status of the submission.

Outcome: correspondence with the journal established.

16. Interaction with reviewers.

The author receives peer-review reports from independent reviewers.

Outcome: reviewer reports on the manuscript.

17. Revision of the manuscript based on journal and reviewer feedback.

The author and co-authors revise the manuscript in accordance with the comments provided by the journal editor and reviewers.

Outcome: improved manuscript.

18. Translation of revisions.

The author or a translator renders the revised sections of the manuscript into academic English.

Outcome: revised manuscript in English.

19. Reformatting of the manuscript in accordance with journal requirements.

The author or a technical editor reformats the manuscript to ensure full compliance with the journal's submission guidelines.

Outcome: properly formatted manuscript.

20. Resubmission of the manuscript.

The author resubmits the revised manuscript to the journal via its electronic submission system.

Outcome: manuscript resubmitted to the journal.

21. Monitoring the manuscript status.

The author tracks the progress of the manuscript within the journal's electronic system, regularly checks email correspondence, and, if necessary, sends follow-up inquiries to the journal editor to clarify the current status.

Outcome: correspondence with the journal established.

22. Confirmation of acceptance.

The journal issues a formal notification confirming that the manuscript has been accepted for publication.

Outcome: acceptance letter from the journal.

23. Proofs for author approval.

The author receives the proofs (final layout of the manuscript) and verifies their accuracy, making corrections if necessary.

Outcome: reviewed proofs.

24. Submission of approved proofs.

The author reviews and returns the corrected proofs to the journal editor.

Outcome: correspondence with the journal.

25. Ongoing monitoring of publication.

The author continues to monitor the status of the manuscript in the journal's electronic system, checks email correspondence, and, in cases of prolonged uncertainty, sends follow-up inquiries to the editor. Additionally, the author verifies the journal's current indexing status and ranking within international databases, as journals may change their ranking or be removed from indexing systems.

Outcome: publication process under active monitoring.

26. Online publication of the article.

The journal publishes the author's article on its official website.

Outcome: article available on the journal's website.

27. Indexing of the article in the Scopus WoS SSCI AHCI SCIE ESCI database.

The journal database posts the Author's article on the official website.

Outcome: Article indexing on the Scopus WoS SSCI AHCI SCIE ESCI database.

Section 1. The Ideal Article: Topic Selection, Identification of Relevant Literature, and Manuscript Preparation

Key objectives:

1. To select a research topic within a domain in which the author possesses substantial expertise.

2. To identify high-quality benchmark articles published in reputable journals with strong rankings (e.g., Scopus Q1–Q2, Web of Science Q1–Q2, with high impact factors).

3. To develop a manuscript that meets or exceeds the quality of articles already published in leading journals (i.e., surpassing the identified benchmark studies).

Where target journals are known in advance, it is advisable to identify exemplary articles specifically within those journals. The resulting manuscript should be of comparable or higher quality.

Outcomes:

1. A completed manuscript.

2. A structured repository of files, including all sources cited in the manuscript, statistical data, original calculations, and any supplementary materials underlying the study. Journals frequently require authors to provide supporting files containing data, formulas, and calculations presented in the manuscript.

For organizational purposes:

1. Create a dedicated folder, labeled with a number or an English keyword (e.g., “120” or “Manuscript”).

2. Save all reference articles used during the preparation of the manuscript within this folder.

3. Assign the same number or keyword to the finalized manuscript file (e.g., “120” or “Manuscript”).

4. Label source files numerically (1, 2, …) in accordance with their order in the reference list.

5. Name files containing numerical data and calculations descriptively, ensuring clarity regarding their contents.

A research article must demonstrate novelty (i.e., an original contribution).

Novelty, understood as the originality of the obtained results, refers to the extent to which the findings - whether in their entirety or in specific components - differ from previously established knowledge. It encompasses the author's original ideas and propositions that distinguish the reported results and conclusions from those of prior studies within the same field. In technical and applied research, novelty is typically grounded in experimental evidence and empirical validation. In contrast, in theoretical research, novelty is reflected in the development or refinement of ideas, concepts, and theoretical frameworks, which may be considered original if they represent a substantive reinterpretation or advancement in light of contemporary knowledge and current stages of disciplinary development.

Identification of Relevant Literature

Relevant sources should be selected from high-quality journals with strong rankings (e.g., Scopus Q1–Q2, Web of Science Q1–Q2, with high impact factors). These articles serve as benchmarks for the development of the manuscript.

The quality of selected reference materials directly influences the quality of the resulting article; reliance on poorly constructed studies published in low-quality journals is likely to result in a manuscript of similarly limited standard.

Priority should be given to publications from the past 4–5 years, with particular emphasis on the most recent and relevant studies published within the last two years.

Stage 1: Identification of key concepts.

The key concepts of the article are defined as those that most comprehensively capture its essence and core contribution.

Stage 2: Retrieval of relevant literature.

Using the identified key concepts, relevant studies are located in databases such as Google Scholar and Scopus, focusing on recent publications. Further details on search strategies in international databases are provided in the section "Manuscript Preparation."

The quality of retrieved articles is assessed based on the ranking of the journals in which they are published. Journal ranking is determined by the indexing database and metrics such as impact factor or SCImago Journal Rank (SJR). Priority should be given to high-ranking journals (e.g., Scopus Q1–Q2, Web of Science Q1–Q2, with high impact factors).

The objective is to identify comparable studies published in leading journals. These articles serve as reference models for structuring and developing the manuscript. The resulting article should aim to meet or exceed the quality of each individual reference study, drawing on insights derived from the analysis of no fewer than ten high-quality publications.

A "search tree" approach is recommended when identifying reference articles. After selecting several closely related studies, their reference lists should be examined, as they are likely to contain additional relevant sources closely aligned with the topic.

Stage 3: Analysis of retrieved literature.

The selected articles are systematically reviewed. If certain sources are found to be insufficiently aligned with the topic, they should be replaced with more relevant studies. Once a corpus of at least ten comparable articles has been established, the author should identify prevailing research trends, as well as the structural and content-related features characteristic of high-quality publications in the field.

During manuscript preparation:

1. The logical structure of the article should first be clearly developed, both conceptually and in written form.

2. It is essential to distinguish between substantive, evidence-based information that carries academic value and purely descriptive or redundant theoretical content that does not contribute meaningfully to the study.

3. Elements of novelty should be explicitly identified throughout the manuscript (e.g., marked during drafting) to enable subsequent critical evaluation of their originality and relevance.

4. The title of the article should be concise and not exceed ten words.

To understand the expected final standard of the manuscript, it is necessary to carefully examine and analyze articles published in leading high-impact journals. These serve as benchmarks for both structure and quality.

Intermediate or preliminary versions should be minimized; the objective is to produce a high-quality manuscript from the outset.

The quality of the completed manuscript should be systematically evaluated according to the following criteria:

1. The title of the article must accurately reflect its content.

2. Non-substantive or redundant text should be minimized or eliminated to ensure clarity and conciseness.

3. The content of each structural section must be fully aligned with its designated heading.

4. The overall structure of the manuscript should correspond to that of articles published in leading high-impact journals.

5. The length of each section should be consistent with the typical proportions observed in articles from top-tier journals.

Common Errors in Academic Manuscripts

1. The text is dominated by excessive theoretical exposition and non-substantive content.

2. The use of jargon and non-academic language, including informal or emotionally charged expressions (e.g., “damned” questions, “unrestrained” individual).

3. The article consists primarily of descriptive narration, without comparison, critical interpretation, original contribution, or independent research input.

4. Outdated data are used (e.g., economic indicators from 2010–2023), reducing the relevance and scholarly value of the study.

5. The Introduction lacks a review of international literature, or the cited international sources are outdated.

6. The Methods section contains only a theoretical description of existing methods, or no clearly defined methods are presented at all.

7. The Results section does not provide substantive findings, or the reported results are vague and insufficiently informative.

8. The Discussion section does not meaningfully interpret or contextualize the results.

9. The Conclusions section does not present actual conclusions derived from the study.

10. The study relies on a small sample size that does not permit robust or credible inferences.

11. No comparative analysis is conducted across cities, regions, or countries; instead, the manuscript merely describes each case separately without analytical integration.

12. Paragraphs lack coherence, with insufficient logical transitions between ideas.

13. The text includes misleading formulations, such as “The conducted study shows …” when no actual study was carried out, or “Based on the survey and questionnaire …” when no survey or questionnaire was administered.

14. The tables and figures do not represent the full scope of the material discussed in the manuscript, but only isolated parts of it. For example, if Moscow, Beijing, and Astana are examined

in the text, but the tables present data only for Astana, the empirical presentation is incomplete.

15. The data are not comparable across cases. For instance, if fish are studied in one region, crayfish in another, and snails in a third, such heterogeneous datasets cannot be validly compared to draw generalized conclusions about interregional differences.

Comparative Evaluation of the Manuscript Against Benchmark Studies

The present guidelines provide an overview of the core elements common to scientific articles published in international journals.

The evaluation of a manuscript should be conducted according to **two primary criteria:**

1. Structural organization.

2. Scientific contribution (scholarly value).

Although articles across different academic disciplines exhibit specific features, the majority adhere to a standardized structure comprising the following components:

1. Abstract;
2. Keywords;
3. Introduction;
4. Methods and Materials;
5. Results;
6. Discussion;
7. Conclusions;
8. References.

1. Abstract

The abstract should be prepared after the completion of the manuscript.

It must present the most significant findings of the study in a concise manner, enabling readers to immediately understand the relevance and value of the article.

The abstract should follow a clear internal structure and include brief descriptions of:

– the research objectives;

– the methods employed;

– the key results obtained;

– concise conclusions, with an emphasis on the practical implications and significance of the findings.

The length of the abstract should not exceed 250 words and is preferably limited to approximately 200 words. The use of abbreviations and references should be avoided.

Example of an Incorrect Abstract

The article addresses issues related to the abuse of labor rights (lack of specificity; overly general statement). It is concluded that (based on which data?) the abuse of labor rights constitutes a specific type of legal behavior that operates within the boundaries of subjective rights but infringes upon the legitimate interests of another party, understood as “pre-rights” serving as a means of rights realization (it remains unclear whether this definition is novel or relevant).

The authors identify the following characteristics of the abuse of labor rights (according to which criteria or methodological approach?): violation of the purpose of subjective rights, that is, the exercise of such rights in contradiction to their intended function and legal nature, as well as the infliction of harm. The article further outlines the consequences of such abuse (for which субъекты? No actors are specified), including sanctions in the form of denial of legal protection (on what grounds are these sanctions determined?) and proposes the formal recognition of compensation for moral damage (the rationale for this proposal and its potential impact are not provided).

This abstract fails to demonstrate the scientific novelty of the study, does not clearly state its objectives, and does not present concrete results.

Such an abstract suggests that the topic lacks relevance and scholarly significance.

Example of Correct Abstract:

ABSTRACT

This study considered the possibility of using plant community phytomass for the assessment of soil pollution with heavy metals from industrial wastes. The three-year long field experiment was run under the regional natural meadow vegetation; the polymetallic galvanic slime was used as an industrial waste contaminant. It is shown that soil contamination primarily causes decrease of phytomass in the growing phytocenosis. The vegetation experiments determined non-linear dependence of cultivated and wild biomass on the level of soil contamination; it is described by the equations of logistic and Gaussian regression.

In the absence of permanent contaminants, the soil is self-cleaned over time; it reproduces phytomass mainly due to the productivity increase of the most pollution-tolerant species in the remaining phytocenosis; this phenomenon is defined as environmental hysteresis. Soil pollution by industrial waste leads to the loss of plant biodiversity.

The research shows that the study of the heavy metals impact on ecosystems is expedient given consideration of the "soil-phytocenosis-pollutant" complex in the "dose-response" aspect. The reaction of phytocenosis on heavy metals showing decline in phytomass makes serious limitations in the choice of accumulating plants, because the adsorbed heavy metals are rejected through phytomass.

2. Keywords (no fewer than seven terms)

Keywords represent the principal terms of the article, reflecting its core subject matter and facilitating indexing. They should not include abbreviations and, where possible, should avoid repeating words from the title.

Example of inappropriate keyword selection:

Keywords: model, load, engine, friction, resistance, optimization, design, analysis.

Example of appropriately selected keywords:

Keywords: mathematical modeling, operational load, gas turbine engine, design optimization, thermodynamic analysis, computer-aided design.

3. Introduction

In accordance with the requirements of most journals, the **Literature review** section is incorporated within the **Introduction** section.

Objectives of the Introduction section:

1. To provide a concise description of the research topic, objectives, and scope of application.

2. To present a literature review (typically 20–30 sources):

- to identify general trends in previously published research;

1.1 The issues involved in transparency

Transparency generally means the opening up of the internal organizational processes and decisions to third parties, whether or not these third parties are involved in the organization (Florini, 1998). It rests upon a non-negotiable right to know (Fung et al., 2003; Pope, 2003; Open Government, 2004) made explicit in Article 19 of the Universal Declaration of Human Rights.[1] This fundamental right is also at the heart of the modern processes of accountability and the legitimization of public authorities (Naurin, 2002). In addition to being a right, transparency must also be considered an

- to identify inconsistencies or conflicts in theory, methodology, practice, or research findings;

Although physicians in Europe had been describing clinical components of ARF since the 1500s, it was William Charles Wells' seminal publication in 1812 that definitively linked ARF with carditis.[7] The entire clinical spectrum of ARF (from tonsillitis to carditis) was first described by Cheadle in 1889.[8] The infectious etiology of ARF was long suspected, especially given the seasonal variation in outbreaks, and in 1900 Poynton and Paine described a diplococcus isolated from patients with ARF, which they implicated as a causal organism for the disease.[9] *Micrococcus* (or *Streptococcus*) *rheumaticus* was isolated from a patient with ARF in 1904, and was noted to be "indistinguishable from strains of *Streptococcus pyogenes*".[10] Into the 1930s, theories implicating viruses as causal agents for ARF surfaced,[11] and are still being investigated today.[12,13]

- to highlight gaps in existing studies or theoretical frameworks;

This study investigates whether, globally, women and men are converging or diverging with respect to key dimensions of welfare such as educational attainment, economic activity, length of life, and representation in national legislatures. Several studies find evidence of cross-country or global convergence – or at least the halting of divergence – on a number of welfare indicators, including education (Morrisson and Murtin 2007, Goesling and Baker 2008), income (Firebaugh 2003; Firebaugh and Goesling 2004; Sala-i-Martin 2006), fertility (Dorius 2008; Wilson 2001), and the Human Development Index (Crafts 2002), leading one development scholar to declare that "nearly everything that matters is converging" (Kenny 2005:1). The question is whether Kenny's declaration applies to gender inequality as well.

- to identify a specific problem or outline directions for future research;

sectors.[4] It was not clear, however, how these changes would affect the relative wage inequality of men and women. Would changes in the demand for labor resulting from market forces and the introduction of private ownership result in compositional changes that would increase or decrease women's inequality more than men's? Would the introduction of more flexibility in the labor market (e.g. allowing unemployment and part-time work) and concurrent shifts in labor supply result in more or less wage inequality? Would changes in institutions, such as the minimum wage, affect wage dispersion, and would they affect it differently for men than for women?

Recent methodological advances, namely the development of the DiNardo, Fortin and Lemieux (1996) and Lemieux (2002) decomposition techniques, present new opportunities for answering the above questions. In this paper, we provide the first application of the Lemieux (2002) decomposition in the context of the developing and transition economies. We examine changes in the distribution of wages for men and women in Ukraine, which with a population of 47 million, is the second largest country in the former Soviet bloc and is comparable in population size to Poland and South Africa. Until recently, there has been little global attention

3) To **articulate the author's perspective** within the literature review, ensuring that the criteria used for the selection and analysis of sources are transparent and clearly justified.

4) **To substantiate the relevance of the study**.

Within the literature review, it is necessary to:

- summarize general trends in previously published research;
- identify conflicts in theory, methodology, practice, or empirical findings;
- highlight gaps in existing research or theoretical developments;
- define a specific problem or indicate perspectives for further investigation.

The author's analytical position should be explicitly presented, and the criteria for selecting and evaluating the literature must be clearly defined. On this basis, the relevance of the study should be substantiated.

Objectives of the Literature Review in the Introduction (three primary objectives):

1. To demonstrate the **author's familiarity** with current trends, recent studies, and key developments within the field.
2. To substantiate the **relevance of the research topic**. A substantial volume of existing publications indicates sustained scholarly interest; however, the review should also show that the specific research area remains insufficiently explored.
3. To highlight the **practical significance** of the study and its contribution to the advancement of knowledge.

Important: The most significant challenges arise in the preparation of the literature review.

1. Avoid general statements that lack substantive or empirical value. Vague expressions such as "valuable,"

"relevant," or "important" should be replaced with evidence-based statements.

For example: "Issues related to the development of civil society in the region remain insufficiently studied."

2. Avoid listing authors without reference to their specific contributions.

For example: "This view was supported by such scholars as I.A. Pokrovskyi, M.M. Agarkov, N.S. Malein, V.I. Emelyanov, O.A. Porotikova, and T.S. Yatsenko."

3) Avoid generalized statements without further specification.

For example: "The practice of developed countries demonstrates … [1, 3, 6, 9, 14]."

A more appropriate formulation would be: "Evidence from the United States indicates … [1, 6]; in European Union countries … [3]; in other contexts … [9]. These findings suggest that …"

4) Use declarative, evidence-based statements supported by appropriate citations, rather than rhetorical or evaluative phrasing.

For example:

Incorrect: "The perspective proposed by E.A. Fedorova appears original. She argues (with some justification) that strikes constitute an abuse of subjective rights, as participants intentionally and deliberately harm employers for personal gain."

Correct: "Strikes may be interpreted as an abuse of subjective rights, insofar as participants intentionally inflict harm on employers for personal gain (Fedorova, 2010)."

Citing Previous Research.

Example of **incorrect (**and frequently used) citation practice:

"This issue has been widely addressed in the works of both domestic [1–14] and international scholars [15–23]."

OR

"An important problem of the modern chemical industry is the development of a new generation of catalysts with advanced physicochemical properties [4–11]."

Examples of **correct** citation practice:

"In the selection of catalysts, key considerations remain low production cost [3], high efficiency, and the potential for repeated use [4]. A wide range of Pd-based catalysts has been developed, including palladium–phosphine complexes [5], Pd catalysts supported on silicon dioxide [6], carbon nanotubes [7], and graphene nanosheets [8]."

Important: The primary purpose of citing prior research is to substantiate the rationale for the study - that is, to justify why the article was written or the research (or experiment) was conducted. Ideally, each statement should convey substantive, evidence-based information and be supported by an appropriate citation. Generalized or vague formulations should be avoided, such as "In the context of increasing X, the concept of Y becomes particularly important."

Example of an appropriate literature review.

The number of sources exceeds typical limits, as this is a review article; however, the citation style is highly illustrative. Excessive non-substantive information should be avoided. The Introduction may be concise while simultaneously providing a comprehensive overview of the literature.

Example:

1 Introduction Go to:

Early childhood, when brain plasticity and neurogenesis are very high, is an important period for cognitive and psychosocial skill development (1–3). Investments and experiences during this period create the foundations for lifetime success (4–13). A large body of evidence demonstrates substantial positive impacts of early childhood development (ECD) interventions aimed at skill development (14,15). ECD interventions are estimated to have substantially higher rates of return than most remedial later-life skill investments. (6, 8, 13, 16).

More than 200 million children under the age of 5 currently living in developing countries are at risk of not reaching their full developmental potential, with most living in extreme poverty (17, 18). These children start disadvantaged, receive lower levels of parental investment, and throughout their lives fall further behind the advantaged (15, 19, 20).

The evidence of substantial long-term economic benefits from ECD is primarily based on U.S. data (21–30). There are reasons to suspect that these benefits may be higher in developing countries. Children there typically live in homes where the environment is less stimulating than in developed countries. As a result, they enter ECD programs with lower levels of skill. Programs that boost skills are likely to have greater benefits in developing countries because skills are less abundant there. For example, the returns to schooling are typically higher in developing countries (31).

This paper reports estimates of the causal effects on earnings of an intervention that gave two years of psychosocial stimulation to growth-stunted toddlers living in poverty in Jamaica (32). To our knowledge, this is the first experimental evaluation of the impact of an ECD psychosocial stimulation intervention on long-term economic outcomes in a developing country (33).

Unlike many other early childhood interventions with treatment effects that fade out over time (8,13,15), the Jamaican intervention had large impacts on cognitive development 20 years later (34). We show that the intervention had large positive effects on earnings, enough for stunted participants to completely catch up with a non-stunted comparison group. The intervention compensated for early developmental delays and reduced later-life inequality. The Jamaican intervention had substantially larger effects on earnings than any of the U.S. programs, suggesting that ECD programs may be an effective strategy for improving long-term outcomes of disadvantaged children in developing countries.

The Introduction should clearly substantiate the **study's motivation,** whether it involves developing a new methodology, generating experimental data, identifying research gaps, or modernizing or optimizing existing approaches.

It is also necessary to explicitly define the **objective of the study** and formulate the **corresponding research tasks.**

Important: The motivation should be framed in a universal manner, that is, it should be applicable beyond a specific local context. Studies focused exclusively on narrowly defined domains or particular geographic regions are unlikely to attract the interest of international journals.

When addressing local contexts, these should be situated within a broader analytical framework.

Example 1:

A study examining drip irrigation regimes for sugar beet in a specific region of Kazakhstan.

How can such a study be framed with universal motivation?

Answer: Identify the climatic conditions characteristic of the region and determine other regions with similar conditions (e.g., China, regions of Africa, and Latin America). Subsequently, through appropriate references to the literature, present the proposed irrigation regimes as applicable to arid regions more broadly.

Example 2:

A study examining the foreign policy of Uzbekistan.

How can such a study be framed with universal motivation?

Answer: Through a comprehensive literature review, substantiate the strategic importance of Uzbekistan within the foreign policy agendas of the United States, China, and the European Union, particularly in relation to Central Asia and broader geopolitical dynamics.

If a comprehensive literature review or a clearly articulated motivation is absent, these elements should be incorporated into the manuscript.

4. Methods and Materials (Experimental)

The primary objective of this section is to provide sufficiently detailed information to ensure the reproducibility of the study.

For theoretical research, this section should present a clear description of the specific methodology applied in the study, rather than a general overview of theoretical approaches.

For experimental research, it should include a detailed account of the experimental design, procedures, equipment, and

objects of investigation used in the study. The focus should be on the methods employed by the authors, rather than general theory or previously established approaches without adaptation.

Important: There are no universal guidelines for this section, as its structure and content vary substantially across disciplines. Therefore, authors should align their presentation with the conventions observed in published articles within their target journals.

Example 1. Methods: an article on irrigation.

March 2008 and September 2010. The area has an extreme arid climate with annual precipitation and potential evapotranspiration rates of approximately 58 and 2,540 mm, respectively. The study area is located 901 m above mean sea level and has a mean annual temperature of 11.5 °C, with very warm summers and relatively cool winters. There is an abundant supply of sunlight in the area, on average more than 8 h per day. The mean annual wind speed is approximately 0.77 m/s. Surface water used for irrigation comes from the Kongque River, whose water quality is affected by nearby Bosten Lake and has electrical conductivity (EC) values generally between 0.9 and 1.6 dS/m (He et al. 2010). Groundwater, having EC values between about 3–5 dS/m (see Table 1), is used often also for irrigation of cotton, which is known to have a relatively high tolerance for salinity (Maas 1990; Vulkan-Levy et al. 1998; Henggeler 2004; Steppuhn et al. 2005; Chen et al. 2010). The sodium adsorption ratio (SAR) of irrigation water ranged from 3.77 to 9.97. Loamy sand was the predominant soil texture at the field site. Electronic digital water level gauges were installed in the fields to monitor the water table. Drainage canals had their bottoms 2 m below the soil surface.

Example 2. Methods: a study in the field of medicine.

Given the importance of sympathetic excitation in hypertension and cardiovascular disease, strategies to specifically target chronic sympathetic overactivity are likely to be of substantial clinical benefit. Indeed, in very recent developments, the application of catheter-based renal denervation (RDN) has been demonstrated to result in safe and effective BP lowering and reduced noradrenaline (NA) spillover and postganglionic efferent multi-unit MSNA in patients with resistant hypertension (RH).[14–18] However, the exact mechanism underlying sympathetic inhibition associated with RDN is unknown. We, therefore, investigated whether and to what extent ablation of renal sympathetic nerves may restrain abnormal patterns of sympathetic nerve firing in high-risk patients with RH.

Methods

Subjects

The study was approved by the Institutional Ethics Committee, and written informed consent was obtained from all patients. Thirty-five non-smoking patients (27 male; 8 female) with established RH were enrolled in our therapeutic RDN program as extensions to the Symplicity protocols (NCT00888433), of whom 25 (RDN) were prospectively assigned to treatment group and 10 patients (non-RDN) were assigned to continued medical care. Twelve patients were included in the Symplicity HTN-2 trial. Patients underwent a complete medical history and physical examination, assessment of vital signs, and review of medication. Patients were interviewed whether they had taken their complete medication at defined doses. Treating physicians and patients were instructed not to change medications except when medically required. Hypertension was diagnosed based on the current European Society of Hypertension and European Society of Cardiology guidelines for the management of arterial hypertension.[19] Only patients without evidence of secondary forms of hypertension such as primary aldosteronism, renovascular hypertension, pheochromocytoma, Cushing's disease, and others as assessed by physical examination, biochemical and imaging studies, were included. Four patients diagnosed with obstructive sleep apnea but adequately treated with continuous positive airway pressure therapy were also included. RH was defined according to the current statement of the American Heart Association.[20]

All patients were studied at baseline and at 3-month follow-up. The non-RDN group also served to assess reproducibility of measurements of BP, multi-unit MSNA, and single-unit MSNA.

Study Protocol

The RDN procedure is approved in Australia by the Therapeutic Goods and Drug Administration. Subjects were comprehensively examined in a quiet room and in a comfortable position. Measurements in the RDN group were obtained at baseline (before RDN) and at 3 months after the procedure. Non-RDN patients underwent the comparable measurements at baseline and at 3-month follow-up without having the intervention. On the first visit, BP was measured as described below followed by fasting biochemistry assessments. On the second visit, patients were studied in the supine position after a standardized light breakfast. Participants were asked to empty their bladder to minimize the possible effects of bladder distension on sympathetic activity assessment. Subjects were asked to refrain from alcoholic beverages for at least 48 hours before a study protocol.

Office-Seated and Ambulatory BP

Average sitting office BP was measured after at least 5 minutes of rest on both arms and was calculated as the average of 3 consecutive measurements within a 2-minute interval at baseline and during each visit at follow-up with a validated device (Omron HEM-907, Omron Healthcare Singapore PTE Ltd). The arm with higher BP readings was used for subsequent measures.

To exclude pseudo-RH, all participants underwent 24-hour BP and heart rate monitoring (ABPM) using a validated device (Spacelabs 90207 or 90217 recorder; Spacelabs Healthcare, WA) at baseline as described previously.[22] As recommended in the current guidelines, only ABPM data fulfilling the described standards with regard to the proportions of valid values for the day and night periods recordings were used for analysis.[19] At 3-month follow-up, ABPM recordings were only available from 13 patients as the remaining 12 patients were participants of the Symplicity HTN-2 trial, the protocol of which required ABPM to be performed at 6-, but not at 3-month follow-up.

MSNA Recording

After 15 minutes of rest, MSNA was recorded continuously over a 20-minute period by obtaining concurrent measurements of multi-unit and single-unit recordings of postganglionic sympathetic nerve activity using microneurography (662C-3 Nerve Traffic Analysis System, Bioengineering of Iowa University, IA) from the right peroneal nerve from all participants. A tungsten active high-impedance microelectrode (UNA40FOT; FHC, Bowdoinham, ME) was inserted directly into the peroneal nerve posterior to the fibular head. The electrode was manipulated to obtain a high-quality image of single vasoconstrictors that appeared out of the multi-unit MSNA fibers. The single-unit fibers were obtained from 2 different sites where achievable. A reference uninsulated microneurography needle (UNA40F2S; FHC, Bowdoinham, ME) was positioned at a distance of 2 to 3 cm from the recording active electrode. The neural signals were amplified, filtered, rectified, and integrated to obtain a voltage display of sympathetic nerve activity. MSNA was identified through careful inspection of the voltage neurogram as described previously.[9,10]

Catheter-Based RDN

Bilateral RDN was performed in 1 session using a radiofrequency catheter (Simplicity; Medtronic Ardian Inc, Palo Alto, CA) introduced into each renal artery via femoral access as described previously.[14,15,17] To minimize local visceral pain during the energy delivery, anxiolytics and analgesics were administered intravenously.

Peri- and Postprocedural Medications

To assess the effects of RDN on BP, multi-unit MSNA, and single-unit MSNA, baseline medication was kept unchanged for at least 6 weeks before RDN and this treatment was maintained until 3 months follow-up. Similarly, baseline medication was not altered throughout the study period in the 10 patients who did not undergo RDN. Medication records of each patient were reviewed and documented at each visit. Female subjects were postmenopausal and were not receiving hormone replacement therapy. Patients initially treated with antidepressants, thyroids hormones, and phosphodiesterase inhibitors that influence sympathetic activity were not included in this study.

Data Analysis

Multi-Unit and Single-Unit MSNA

Over a period of 15 minutes, MSNA bursts were identified and sympathetic activity was calculated as burst frequency (bursts/

5. RESULTS

This section represents the most critical component of the article in terms of its scholarly value, as it presents the novelty that underpins the motivation of the study.

As in the Introduction, the use of vague or general statements should be avoided. In addition, references should be used sparingly, with primary emphasis placed on the authors' own findings and observations.

The reported results must be consistent with the stated objectives and research tasks of the study. The presentation should clearly articulate the underlying idea or conceptual contribution and demonstrate its application through concrete evidence.

The principal requirements for this section are clarity, logical coherence, and a comprehensive presentation of all relevant findings.

To enhance clarity, results should be supported by figures, tables, and, where appropriate, formulas. Numerical data presented in the text should also be systematically represented in tables and figures.

The titles of tables and figures must accurately reflect their content and be formulated in a precise and specific manner.

6. Discussion of Results

This section represents another challenging component in many manuscripts.

Following the presentation of the results, the author should compare the obtained findings with those reported in related studies in order to identify similarities and differences. Comparisons must be made between comparable entities; conceptually or methodologically incompatible elements should not be juxtaposed.

The author may confirm or question existing findings; however, such positions must be substantiated by the empirical results of the present study. A systematic comparison should be conducted, clearly identifying points of convergence, similarity, and divergence.

The **Discussion section** may include one or more of the following elements:

1. Limitations of the study or of the broader research field.

Although phytoremediation is a promising approach for remediation of heavy metal-contaminated soils, it also suffers from some limitations (Clemens, 2001; Tong et al., 2004; LeDuc and Terry, 2005; Karami and Shamsuddin, 2010; Mukhopadhyay and Maiti, 2010; Naees et al., 2011; Ramamurthy and Memarian, 2012).

- Long time required for clean-up.
- Phytoremediation efficiency of most metal hyperaccumulators is usually limited by their slow growth rate and low biomass.
- Difficulty in mobilization of more tightly bound fraction of metal ions from soil i.e., limited bioavailability of the contaminants in the soil.
- It is applicable to sites with low to moderate levels of metal contamination because plant growth is not sustained in heavily polluted soils.
- There is a risk of food chain contamination in case of mismanagement and lack of proper care.

2. Directions for future research.

As mentioned earlier, phytoremediation is a relatively recent field of research and application. Currently most research is limited to laboratory and greenhouse scale studies and only a few studies have been conducted to test the efficiency of phytoremediation in actual field. Results in actual field can be different from those at laboratory or greenhouse conditions (Ji et al., 2011) because field is a real world where different factors simultaneously play their role. Factors that may affect phytoremediation in the field include variations in temperature, nutrients, precipitation and moisture, plant pathogens and herbivory, uneven distribution of contaminants, soil type, soil pH, and soil structure (Vangronsveld et al., 2009). Phytoremediation efficiency of different plants for specific

3. Comparison of different methods.

As each described method has its own advantages and disadvantages, new approaches have been focusing on multi-improvement methods. Lin et al. (2009) found a better efficiency of the low dose EDTA with a medium soil nutrient level on the accumulation of Pb in sunflower. Vaxevanidou et al. (2008) showed a 10% increase in the extraction of Pb with bacteria (*Desulfuromonas palmitatis)* and EDTA, as compared to the amendment ofEDTA alone. However, in the same study, a 30% reduction was observed for the extraction of Zn, with the presence of bacteria and EDTA, as compared to only EDTA. Similarly, Di Gregorio et al. (2006) showed a 56% increase in the efficiency of the EDTA-led phytoextraction by *B. juncea,* which was combined with an application of Triton X-100 and *Sinorhizobium* sp. Pb002 inoculums. More processes for the multi-function removal of contaminants are currently being used in removing organic compounds such as polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). For instance, a multi-process which includes physical (volatilization), photo-chemical (photooxidation) and microbial remediation (contaminant degrading bacteria, PGPRs) processes was employed by Huang et al. (2004). In their study, the average efficiency for the removal of 16 priority PAHs, using the multi-process remediation system, was found to be 100% more than land-farming, 50% more than using bacteria alone and 45% more than phytoremediation alone.

4. Comparison of the study's results with those of analogous studies.

The obtained results are also reflected in other studies. For example, some authors (Trifonova *et al.* 2007) presented evidence that two years after the introduction of galvanic slime into the sod-podzol soils, containing Cr, Mn, Fe, Ni, Cu, Zn, Pb (total amount of these metals made 406.6 g/m^2), plant community phytomass was increased two times as compared with the control grounds, but the loss of species diversity led to virtual disappearance of forbs, along with the dominance of rootstock grasses.

This section provides interpretation and clarification of the obtained results.

The discussion involves the synthesis and evaluation of the study's findings. It is necessary to compare the results presented in the article with those reported in prior research. By examining existing theoretical frameworks, the author should determine which conceptual perspective best explains the observed results. This process allows for an assessment of the validity and reliability of the findings, as well as their comparison with established results in the literature. The author thereby situates the study's outcomes within the broader structure of existing knowledge.

7. Conclusions

The primary objective of the Conclusions section is systematization. The results previously interpreted in the Discussion should be presented in a concise and structured form. The conclusions should provide a succinct synthesis of the article's main content.

This section should also highlight the scientific and practical significance of the study, as well as its potential areas of application.

A mere enumeration of findings should be avoided.

8. References

The reference list should be compiled based on the selected relevant studies.

The reference list should include approximately 20–40 sources, preferably in English. All sources listed in the References must be cited in the text.

If discrepancies occur (e.g., 30 sources listed but 47 cited in the text), each reference should be carefully verified by author name and content. Inconsistencies must be corrected; if a source cannot be matched, the corresponding citation should be removed.

9. Additional Considerations

For empirical (non-theoretical) studies, the manuscript should include at least one table and one figure. Visual materials must be of high quality; charts and similar elements are typically presented in black and white.

If the article reports original research, the Conclusions should include practical recommendations as well as directions for future research (i.e., what the author intends to investigate further).

In fields such as economics, engineering, and related disciplines, the manuscript should incorporate formulas, quantitative data, calculations, statistical analyses, and analytical interpretations.

In medical research, ethical considerations must be explicitly addressed. The article should indicate the authority that granted ethical approval for the study. If no such approval was required, a clear justification must be provided.

Plagiarism.

Text from other sources should not be copied verbatim.

Sections of dissertations should not be reproduced.

Attempts to disguise borrowed text are unacceptable.

It is preferable to consult multiple sources and present the material in one's own words.

Given the increasing prevalence of plagiarism and the use of artificial intelligence in scholarly publishing over the past two decades, editors of high-ranking indexed journals have significantly strengthened their policies for screening manuscripts for non-original content. Currently, all submissions are evaluated using specialized detection software, and textual similarity exceeding approximately 10% is generally considered unacceptable. Consequently, manuscripts with low levels of

originality are typically returned to the author without the opportunity for resubmission.

The quality of the work is of paramount importance.

The manuscript should be prepared to the highest possible standard.

Practice demonstrates that it is feasible to produce a high-quality article from the outset. Accordingly, emphasis should be placed on achieving excellence in manuscript preparation.

All files associated with the manuscript, including source materials and supporting documents, should be carefully archived and retained, as they may be required for future use.

Section 2. Selection of Journals According to the Topic and Content of the Article

2.1. Journal Selection and Criteria for Exclusion

The indexing database and ranking of the journal, the journal's thematic scope, submission fees, and publication charges.

Journals (approximately eight) selected for submission should correspond to the required ranking or be slightly above it.

Journals with the highest possible ranking should not be prioritized for submission. Instead, journal selection should be aligned with the specific objectives of the author. It is not necessary to target only top-tier journals, as the probability of acceptance is generally higher in journals with more moderate requirements than in leading publishers.

The specific objective is determined by the requirements of an academic institution, organization, or individual. For example, doctoral candidates, academic staff, degree applicants, and individuals seeking to improve personal academic metrics may each have distinct publication requirements.

It is therefore inappropriate to focus exclusively on high-ranking journals from leading publishers (e.g., in the United Kingdom, the United States, or the Netherlands). A more effective strategy is to select journals that match the required ranking criteria. Where appropriate, a diversified approach may be adopted by submitting to journals of varying rankings.

For a given manuscript, it is advisable to identify a set of 5–8 journals, prioritizing those that are positioned toward the lower boundary of the acceptable ranking range (taking

into account the required indexing database and quartile classification).

Examples of common errors. In cases where submission to a Scopus Q2 journal is sufficient, authors often select journals classified as Q1, which are simultaneously indexed in the Web of Science. For example, journals such as the International Journal of Biological Macromolecules (impact factor 8.5) or the Journal of Environmental Chemical Engineering (impact factor 7.2) are frequently chosen, despite the availability of numerous lower-ranked, less selective journals with a higher likelihood of acceptance.

For manuscripts intended for publication in Scopus-indexed journals, it is not necessary for the selected journals to also be indexed in the Web of Science (SSCI or AHCI). Instead, priority should be given to journals indexed exclusively in Scopus, with consideration of the required quartile (Q) classification.

It is essential to carefully review all information on the journal's official website regarding submission fees and publication charges. Payment for manuscript submission or review does not guarantee acceptance. Empirical experience suggests that such journals should be approached with caution, as fees may be charged without a corresponding likelihood of publication. If publication charges are not identified in advance, authors may receive substantial invoices at the stage of acceptance, at which point it becomes difficult to revise the decision. This may require unplanned financial commitments or withdrawal from the process, both of which can be problematic. In such cases, the manuscript may need to be revised and submitted elsewhere, effectively restarting the publication process.

A common error is that authors do not consistently review publication or submission fees and give insufficient consideration to acceptance rates. As a result, journal selection is often conducted superficially, based solely on the alignment

between the journal's title, the article's topic, and the required ranking criteria.

For example, the probability of acceptance in journals published by Cambridge (e.g., Cambridge Journal of Education) is typically very low, and this is not necessarily related to the quality of the manuscript. Similarly, selecting journals with an acceptance rate below 3% (e.g., Culture and Education) may be impractical.

It is also important to avoid selecting multiple **journals from the same publisher** within a single submission strategy. For instance, if a manuscript is submitted to ACM Transactions on Computer Systems, it cannot be simultaneously submitted to ACM Transactions on Interactive Intelligent Systems or ACM Transactions on Modeling and Computer Simulation. Submission to another journal within the same publisher may only be considered after a rejection.

This rule applies to all publishers, as most operate unified submission systems. Simultaneous submission of the same manuscript to multiple journals within one publishing system will be detected and may result in the manuscript not being considered at all, as this constitutes a violation of the policy prohibiting multiple concurrent submissions.

For Web of Science (WoS), the primary indexing databases to be considered are **SSCI and AHCI.** The Emerging Sources Citation Index (ESCI) is not recommended, as it primarily includes journals that have not yet attained established impact or strong ranking metrics.

Examples of Errors in Journal Selection

Abacus: A Journal of Accounting, Finance and Business Studies - submission fee of USD 75.

Acta Psychologica - publication charges of approximately USD 2,600.

Advanced Education- indexed in the Emerging Sources Citation Index; however, SSCI (JCR Q3–Q4) is required.

Agronomy for Sustainable Development - the manuscript does not address sustainability issues, resulting in a mismatch with the journal's scope.

American Journal of Art and Media Studies - indexed in the Emerging Sources Citation Index; however, AHCI indexing is required.

Annals of Clinical Psychiatry - inconsistent information regarding journal ranking across different sources; verification should be conducted using official databases. The journal is classified as Scopus Q3, whereas Q1–Q2 is required. Additionally, the absence of indexed publications for 2024–2025 in Scopus is a cause for concern.

Annual Review of Financial Economics - submission fee of USD 150.

Antropologia e Teatro - indexed in the Emerging Sources Citation Index; however, AHCI indexing is required.

Arti Musices - not suitable in terms of scope; it is a specialized journal in musicology.

Arti Musices - indexed in AHCI, whereas SSCI indexing is required.

Asia Pacific Journal of Education - not suitable in terms of scope; publishes research in education, whereas the manuscript is not focused on this field.

Asia Pacific Journal of Public Health - requires a submission fee.

British Journal of Music Education - not suitable in terms of scope; publishes research in education, whereas the manuscript does not address this area.

British Journal of Music Education - does not meet the required ranking; SSCI journals with JCR Q3 are required.

Bulletin of the Council for Research in Music Education - not suitable in terms of indexing; the journal is listed in AHCI, whereas SSCI (JCR Q3) is required.

Comparative Education - not suitable in terms of scope; publishes research in comparative education, which does not align with the manuscript's focus.

Computer Music Journal - not suitable in terms of indexing; journals included in the Social Sciences Citation Index are required.

Criminal Behaviour and Mental Health - classified as Scopus Q3, whereas Q1–Q2 is required.

Croatian Journal of Education - not suitable in terms of scope; publishes research in education, whereas the manuscript is not focused on this field.

Cukurova University Faculty of Education Journal - indexed in the Emerging Sources Citation Index; however, SSCI (JCR Q3–Q4) is required.

Culture and Education - not suitable in terms of scope; the journal focuses on lifelong learning and the interconnections between culture, language, and digital literacy.

Current Psychology - not suitable in terms of scope; publishes research in psychology.

Current Research in Green and Sustainable Chemistry - publication fee of approximately USD 3,000; publishes exclusively in open access format.

Economic Systems (Wiley), Economica (Wiley), Global Policy (Wiley), International Journal of Finance and Economics (Wiley), Journal of Economic Growth (Wiley) - all belong to the same publisher (Wiley) and operate within a unified submission system; simultaneous submission across these journals is not permitted.

Education 3–13 - not suitable in terms of scope; publishes research on primary education and transitions to secondary education, whereas the manuscript addresses higher education.

Education as Change - not suitable in terms of scope; it publishes research in education, whereas the manuscript does not focus on this field.

Educational Philosophy and Theory - although the scope appears relevant, in practice the journal prioritizes theoretical and philosophical contributions and does not typically accept empirically driven studies in psychology, such as the present manuscript.

Egitim ve Bilim (Education and Science) - not suitable in terms of scope; publishes research in education, whereas the manuscript is not focused on this area.

Ekonomicky Casopis - according to the journal's stated scope, it focuses on socio-economic development and economic policy in the European Union, particularly Central Europe and the Slovak economy; the manuscript addresses Japan, Israel, South Korea, China, Singapore, and the United Kingdom, and is therefore not aligned with the journal's thematic focus.

Energy Systems - not suitable in terms of scope; the required journal category is International Relations.

Entrepreneurship Theory and Practice - not suitable, as the manuscript does not address entrepreneurship.

Environment, Development and Sustainability - not suitable; issues of sustainability are not addressed in the manuscript.

European Journal of Sport Science - not suitable in terms of indexing; not included in SSCI (JCR Q2).

Folklore - not suitable in terms of scope.

Frontiers in Education - indexed in the Emerging Sources Citation Index, whereas SSCI indexing is required; publication fee of approximately CHF 1,950.

Frontiers in Psychology. Publication fee of approximately CHF 3,150.

Frontiers of Education in China - not suitable in terms of indexing; listed in the Emerging Sources Citation Index, whereas SSCI (JCR Q3–Q4) is required.

Frontiers. It should be noted that simultaneous submission to multiple journals within the Frontiers publisher is not

permitted. As these journals operate within a unified submission system, duplicate submissions will be detected.

Heliyon. Publication fee of approximately USD 2,270; publishes exclusively in open access format.

International Journal of Assessment Tools in Education - indexed in the Emerging Sources Citation Index; however, SSCI (JCR Q3–Q4) is required.

International Journal of Forensic Mental Health - not suitable in terms of scope; the required focus is on psychology–law, whereas this journal is oriented toward medicine and nursing studies.

International Journal of Technology and Design Education (Q4) - not suitable in terms of scope; the manuscript does not address design education.

International Review of Finance. Submission fee of USD 150.

Journal of Family Research - not suitable in terms of ranking; Scopus Q2 journals are required.

Journal of Financial Research. Submission fee of USD 250.

Journal of Folklore Research - not suitable in terms of scope.

Journal of Forensic Psychiatry and Psychology - classified as Scopus Q3, whereas Q1–Q2 is required.

Journal of Historical Research in Music Education - not suitable in terms of indexing; journals indexed in SSCI or AHCI are required.

Journal of Innovation and Entrepreneurship - discrepancies in ranking information across unofficial sources, official databases, and the journal's website. It is necessary to verify all sources and, if inconsistencies remain, contact the journal directly. In some sources, the journal is listed as indexed in SSCI (Web of Science), while others do not confirm this indexing; the journal's official website lists indexing only in Scopus.

Journal of Interdisciplinary Economics - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Journal of Legal Medicine - classified as Scopus Q3, whereas Q1–Q2 is required.

Journal of Moral Education - not suitable in terms of scope.

Journal of Music Teacher Education - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Journal of New Music Research - not suitable in terms of indexing; journals included in the Social Sciences Citation Index are required.

Journal of Political Science Education - indexed in the Emerging Sources Citation Index; however, SSCI (JCR Q3–Q4) is required.

Journal of Research in Music Education - not suitable in terms of ranking; journals classified as JCR Q1–Q2 are required.

Journal of Research in Music Education - does not meet the required criteria (AHCI or SSCI JCR Q1–Q2), as it is classified as JCR Q3.

Journal of Sports Sciences - not suitable in terms of indexing; not included in SSCI (JCR Q2).

L'Atalante: Revista de Estudios Cinematográficos - not suitable in terms of indexing; journals included in AHCI are required.

Leisure Studies - not suitable in terms of scope; the journal focuses on research related to leisure, including sport, tourism, hospitality, media, events, heritage, and the arts.

Malaysian Journal of Music - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Music Education Research - not suitable in terms of ranking; journals classified as JCR Q1–Q2 are required.

Music Education Research - does not meet the required criteria (AHCI or SSCI JCR Q1–Q2), as it is classified as JCR Q3.

Music Educators Journal - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Music Perception - not suitable in terms of subject area within Scopus; journals classified under the Education category are required.

Música Hodie - not suitable in terms of indexing; journals included in the Social Sciences Citation Index are required.

Musicae Scientiae - not suitable in terms of scope; it publishes research in music psychology, which is not aligned with the manuscript.

Musicae Scientiae - does not meet the required criteria (AHCI or SSCI JCR Q1–Q2), as it is classified as JCR Q3.

NJ: Drama Australia Journal - indexed in the Emerging Sources Citation Index; however, AHCI indexing is required.

Philosophy of Music Education Review - not suitable in terms of indexing; not included in SSCI.

Popular Music and Society - not suitable in terms of scope; the manuscript addresses folk music rather than popular music.

Practice - not suitable in terms of scope; the journal focuses on social work practice and related experiences of service users.

Research in Science and Technological Education - not suitable in terms of scope; the journal publishes research in science and technological education (e.g., biology, mathematics, informatics), whereas the manuscript focuses on political education.

Review of Economic Analysis - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Revista Internacional de Educación Musical - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Revista Transcultural de Música - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Social Media + Society - not suitable due to publication charges of approximately USD 1,500.

Social Psychology Network - no such journal was identified in the Web of Science database.

Studying Teacher Education - indexed in the Emerging Sources Citation Index; however, SSCI indexing is required.

Teaching of Psychology - not suitable in terms of scope; publishes research on the teaching of psychology.

The Cambridge Journal of Education - acceptance rate of approximately 9%, indicating a very low probability of acceptance.

The European Journal for Research on the Education and Learning of Adults - indexed in the Emerging Sources Citation Index; however, SSCI (JCR Q3–Q4) is required.

The International Journal of Performance Arts and Digital Media - indexed in the Emerging Sources Citation Index; however, AHCI indexing is required.

2.2. Journals to Be Excluded from Submission

The following types of journals should not be considered for submission:

1. Journals with publication fees exceeding USD 1,000.
2. Journals that charge submission fees.
3. Journals with excessively long publication queues.
4. Journals published by MDPI, Frontiers, and Inderscience.
5. Journals that do not meet the indexing requirements specified in the submission criteria.

A single manuscript should not be submitted to more than two journals within the same publisher (e.g., Springer, Elsevier, Wiley).

Duplicate submission of the same manuscript to the same journal without substantive revisions should be avoided.

The following journals should not be used as reference or benchmark journals (i.e., for defining target standards or guiding journal selection):

1. High-cost journals with article processing charges (APC - Article Processing (Publication) Charges) of USD 1,000 or more.

Such journals are typically fully open access, requiring mandatory publication fees, rather than offering a choice between subscription-based and open access models.
Example (based on Scopus data):

☐	1	Environments - MDPI *Open Access*	5.7	85% 110/731

High-cost publishers operating under open access models include Frontiers, MDPI, Hindawi, BMC, and others.

Information regarding article processing charges (APC) is typically provided on the official websites of journals or publishers, commonly within sections such as publication details, fees, payments, or instructions for authors.

Priority should always be given to journals that do not charge publication fees.

If the pool of suitable free journals is exhausted, lower-cost fee-based journals may be considered.

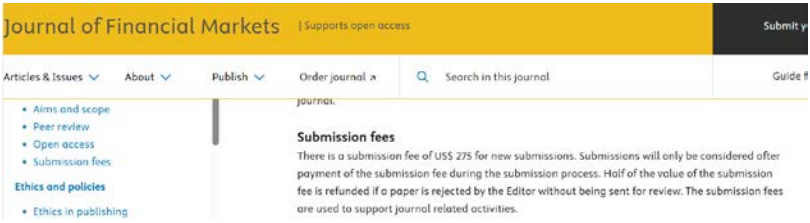
When submitting manuscripts to fee-based journals, technical editors may request publication fee discounts from the journal. Based on the information provided on the journal's website, it is possible to request partial reductions (e.g., 50%) or a full fee waiver (100%). In some cases, journals specify different fee levels depending on the author's country; this should be taken into account, with preference given to the lowest applicable fee or the highest possible discount.

The likelihood of obtaining a discount is generally limited and depends largely on the country of affiliation of the author(s). Journals typically classify countries into categories (e.g., high-income, middle-income, and low-income), and discounts are allocated accordingly. In many cases, only modest reductions (e.g., 3–15%) are granted, which may be insufficient.

Nevertheless, it is advisable to request a discount in all cases in order to minimize financial costs for the author or the affiliated institution.

2. Journals with submission fees (i.e., charges for manuscript submission).

Information regarding such fees is typically provided on the official websites of journals or publishers, commonly within sections such as publication details, fees, payments, or instructions for authors.



When considering such journals for submission, technical editors may send a pre-submission request to the journal, seeking either a waiver of the submission fee or permission to pay the fee only after acceptance of the manuscript. However, in the vast majority of cases, such requests are not approved.

Submission fees do not guarantee successful peer review, and these payments are typically non-refundable if the manuscript is rejected. Therefore, such journals are generally not prioritized.

Submission fees are particularly common in economics journals.

3. Journals with extended publication queues, resulting in significant delays between acceptance and online publication.

Such information is sometimes provided on the journal's website, particularly within sections addressed to authors.

In addition, many journals include a "Forthcoming" (or "Articles in Press") section. By reviewing this section, along with the average number of articles per issue and the number of issues published annually, it is possible to estimate the expected timeline for publication of the manuscript.

Therefore, if a journal publishes, for example, only two issues per year with approximately five articles in each, while maintaining a backlog of around 50 accepted manuscripts awaiting publication, such a journal should not be included in the list of target journals.

In some cases, information regarding the current publication queue becomes available only after submission, when the editor acknowledges receipt of the manuscript and provides details on the average review timeline and the anticipated publication schedule.

I am afraid we cannot publish your article in 2024 due to our long waiting list.

Best regards,
Tiina Mällo

In such cases, journals of this type should not be selected for submission.

2.3. Scopus Database and Journal Selection

The principal metrics used to evaluate journals indexed in Scopus include:

1. Quartile ranking (Q1–Q4).
2. Percentile.
3. CiteScore.

1. **Quartile** is a categorical indicator reflecting the relative prestige, influence, and significance of a scientific journal within the Scopus database. It represents the journal's ranking within a specific subject area.

Four quartiles are distinguished: Q1, Q2, Q3, and Q4.

Q1 journals represent the most influential and authoritative publications. They typically involve rigorous and lengthy peer-review processes and may be associated with higher publication charges.

Q2 journals have lower ranking indicators compared to Q1 but remain well-regarded within the international academic community.

Q3 journals are considered of moderate quality and are often chosen by researchers, particularly those publishing their early academic work.

Q4 journals generally include recently indexed publications that have not yet established a strong reputation. This category may also include journals with declining performance metrics (potentially at risk of exclusion from the database) as well as journals that publish lower-quality content, sometimes on a fee-based basis.

As a single journal may be indexed across multiple subject areas, it may have different quartile rankings depending on the field. Journal selection should therefore be based on the quartile corresponding to the subject area most closely aligned with the

topic of the manuscript. If multiple subject areas are equally relevant, the highest available quartile should be considered.

2) **Percentile** is a numerical indicator ranging from 1 to 99 that reflects a journal's ranking within its subject area. For example, a percentile value of 99 indicates that the journal is among the top 1% most cited publications in its field.

There is a direct correspondence between quartile and percentile rankings:

Q1 - percentile 75–99

Q2 - percentile 50–74

Q3 - percentile 25–49

Q4 - percentile 1–24

This relationship should be clearly understood, as publication requirements may specify either quartile or percentile criteria.

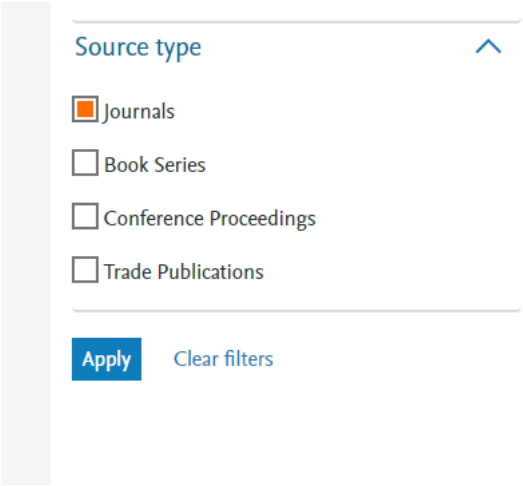
3) **CiteScore** is a metric representing the average annual number of citations received by recent articles published in a journal. CiteScore does not directly correspond to quartile or percentile rankings. For example, some Q4 journals may have a higher CiteScore than certain Q1 journals, as this metric depends solely on citation frequency. Therefore, CiteScore should not be used as a primary criterion in journal selection, as its values may vary significantly across journals of differing quality. At most, it may serve as a supplementary or indicative metric.

Selection of Scopus-indexed journals for publication

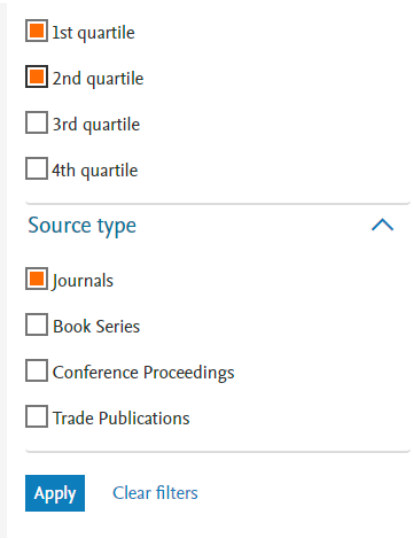
Scopus source database:

https://www.scopus.com/sources.uri

The Scopus database includes not only journals but also books, conference proceedings, and other sources. For the purposes of journal selection, only journals are relevant. Accordingly, the filter "**Source Type – Journals**" should be applied in the left-hand menu.

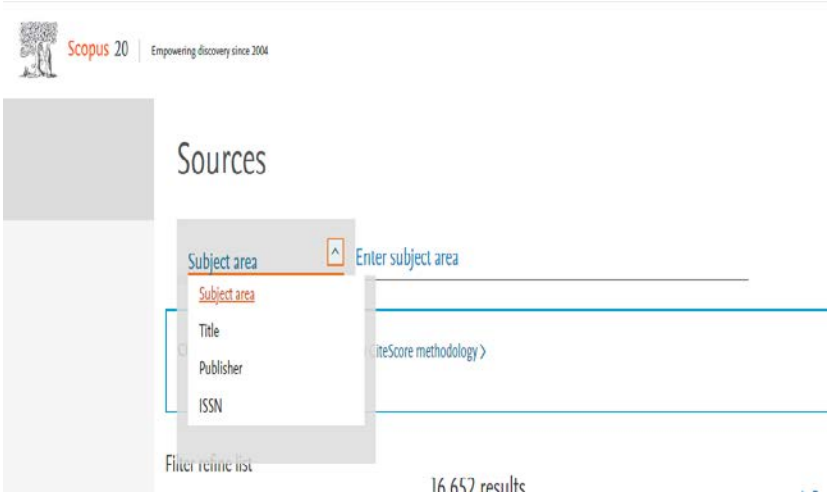


If the requirements specify the selection of journals classified as Q1–Q2, the corresponding quartile filters (Q1–Q2) should be applied in the left-hand menu, followed by selecting "Apply."



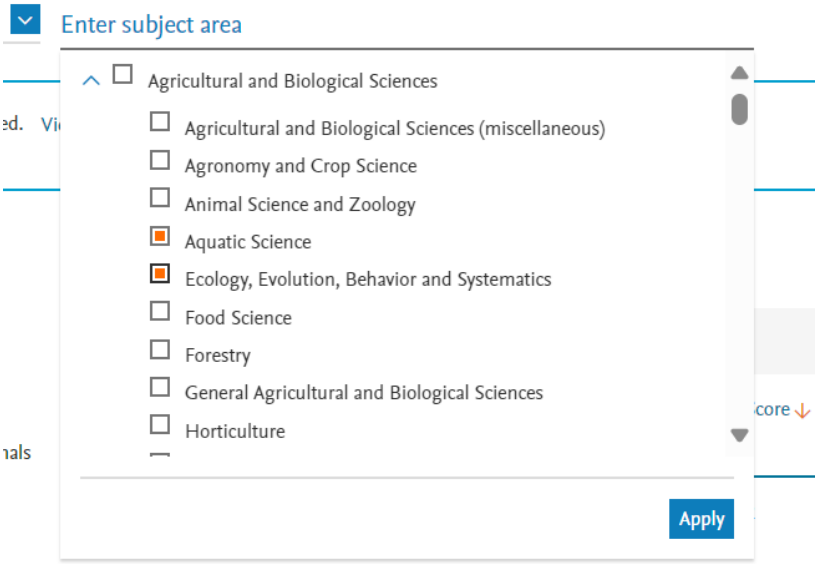
To remove previously applied filters, the "**Clear filters"** option should be selected.

Subsequently, after specifying the required source type (journals) and ranking criteria (i.e., the relevant quartile or quartiles), the appropriate subject area or areas should be selected.

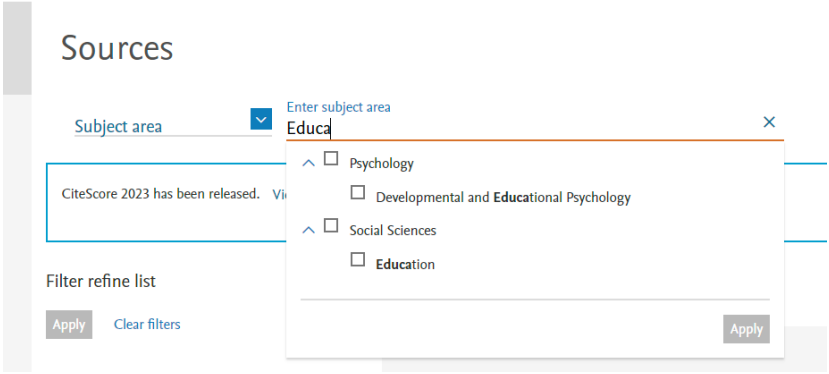


The "**Subject Area"** option should be selected. By clicking on the empty field labeled "**Enter subject area,"** a list of available subject categories in Scopus will be displayed. The categories that correspond to the topic of the manuscript should then be selected.

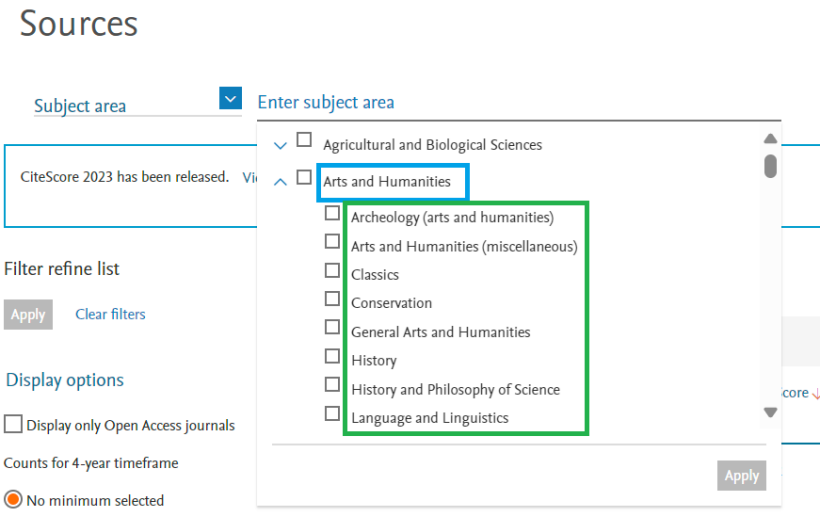
After selecting one or more relevant subject areas, mark the corresponding checkboxes and select the "**Apply**" option.



Alternatively, the required subject area may be entered manually in English, followed by selecting “Apply.”



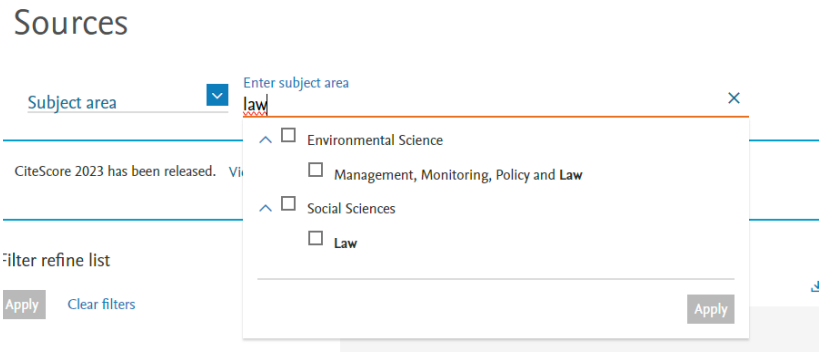
It is important to distinguish between the general subject category of a journal and its specific thematic focus.



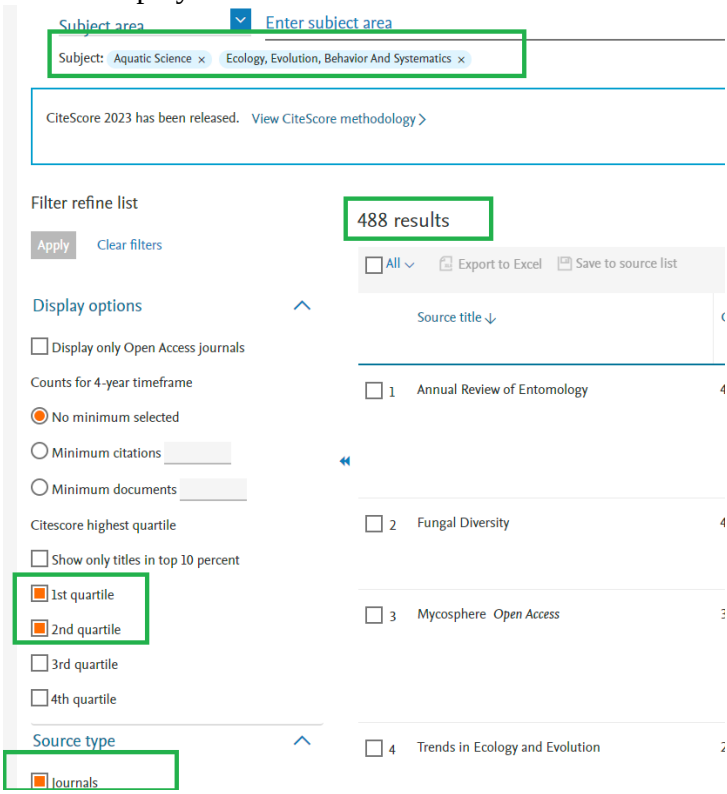
Arts and Humanities (highlighted in blue) represents a general subject category.

The list highlighted in green corresponds to specific subject areas. Journal selection should be based on these specific subject areas rather than the broader category.

It is therefore necessary to identify, in accordance with the requirements, which specific subject areas are relevant for publication. For example, if a journal in the field of Law is required, journals should be selected within the following Scopus subject areas: (1) Management, Monitoring, Policy and Law; and (2) Law.



Upon completion of the above steps, a list of journals that meet the selected quartile (or quartiles) and subject area criteria will be displayed.



Subsequently, each potentially suitable journal from the list should be reviewed individually by accessing its profile through the journal title. It is advisable to open each journal profile in a separate tab in order to retain visibility of the main list.

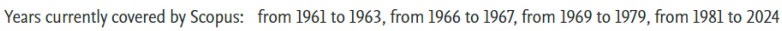
The next step is to examine the official website of each selected journal. Particular attention should be given to the "Aims and Scope" section, examples of previously published articles, and announcements regarding upcoming issues (e.g., calls for papers). This allows for an accurate assessment of the types of manuscripts the journal publishes and whether the article is appropriate for submission.

It should be noted that a journal's title does not always clearly reflect its specific focus or scope. In addition, some journals are multidisciplinary and may publish research across a range of topics, despite being indexed in a limited number of subject areas within Scopus. Therefore, a thorough review of the journal's official website, and especially its archive of published articles, is essential.

Key aspects to consider when reviewing a journal profile in Scopus:

1. Years of coverage in Scopus (Years currently covered by Scopus).

The most recent year indicated should correspond to the current year:

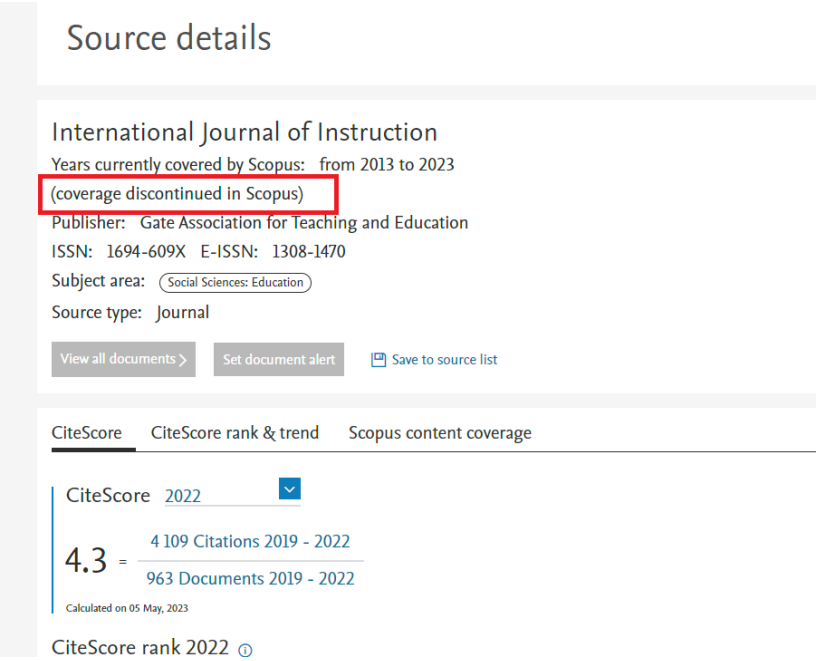


In some cases, the subsequent year may be indicated (as certain journals publish issues well in advance).

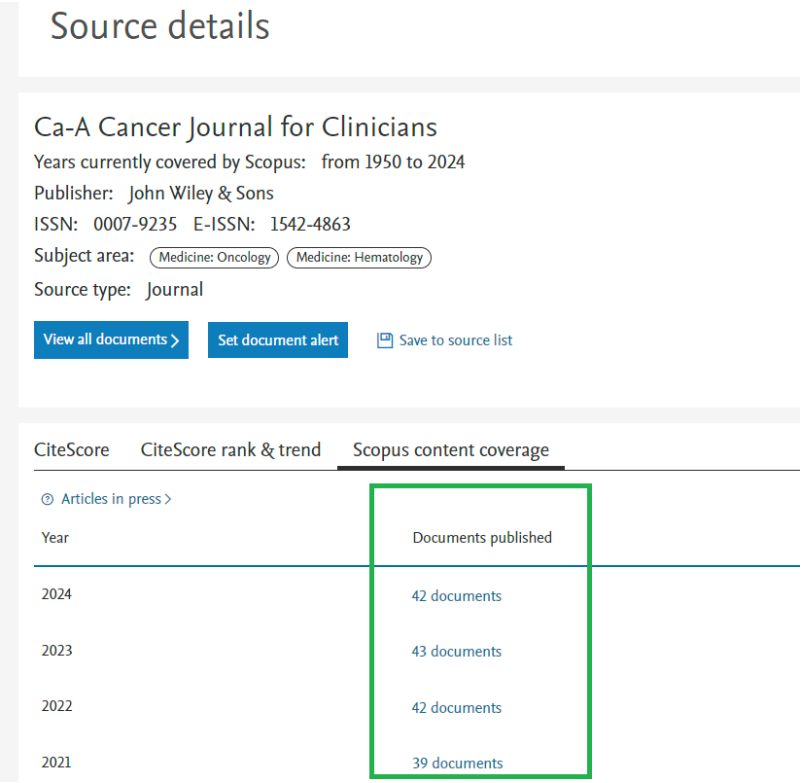
At times, the previous year is listed; however, this does not necessarily imply that the journal has ceased to be indexed. Journals that publish only one or two issues annually may release their first issue of the year as late as May or June. Consequently, if the journal profile is reviewed at the beginning

of the year, it may not yet contain indexed articles for the current year, and the indexing year will not have been updated accordingly.

Only if the journal profile explicitly states “coverage discontinued in Scopus” does this indicate that the journal has been removed from the Scopus database and is no longer indexed (even though it may still appear in the general listing). Scopus does not delete such journals but instead marks them as “coverage discontinued.” Such journals should not be considered for submission.



2. It is also important to examine the "**Scopus content coverage**" field, which indicates the number of publications indexed annually in each journal (Documents published).



A higher number of publications per year is generally associated with a greater likelihood of manuscript acceptance. Conversely, journals that publish only one to three issues annually should be approached with caution. Even if a manuscript is accepted, the time from acceptance to publication in such journals may extend to approximately one to two years.

2.4. Web of Science Database and Journal Selection

Access to the Web of Science database:
https://mjl.clarivate.com/home

Key indicators of journals indexed in Web of Science include:

1. Journal quartile according to Web of Science (JCR Q1–Q4).
2. Impact Factor (IF).

Journal Citation Reports (JCR) quartiles (Q1–Q4) represent a classification of a journal's prestige, influence, and significance within the Web of Science database. They reflect a journal's ranking within a specific subject category.

There are four quartiles: JCR Q1, Q2, Q3, and Q4. The first and second quartiles (Q1 and Q2) are considered the most prestigious and include the highest-ranked and most selective journals. The third and fourth quartiles (Q3 and Q4) generally comprise journals with comparatively lower selectivity.

Because a single journal may be indexed across multiple subject categories, it may have different quartile rankings depending on the field. Journal selection should therefore be based on the quartile corresponding to the subject area most closely aligned with the topic of the article. If multiple subject areas are equally relevant, the highest quartile ranking should be considered.

The Impact Factor (IF) is a quantitative indicator of the average number of citations received by articles published in a given journal and is widely used to assess its academic influence. Journals in medicine, engineering, and the natural sciences typically exhibit higher IF values compared to those in the humanities and social sciences.

The main sub-databases of Web of Science include:

Social Sciences Citation Index (SSCI): covers disciplines related to the social sciences, including education, linguistics, economics and management, law, political science, social work, sociology, and related fields.

Science Citation Index Expanded (SCIE): encompasses disciplines in the natural and technical sciences, such as engineering, agriculture, computer science, biology, chemistry, physics, mathematics, environmental science, and medicine.

Arts & Humanities Citation Index (AHCI): includes fields within the humanities, such as history, religious studies, dance, musicology, art, philosophy, and related disciplines.

Certain subject areas may fall within two or even three Web of Science sub-databases simultaneously, depending on the specific focus of the study:

Cultural studies: Social Sciences Citation Index and/or Arts & Humanities Citation Index.

Music education: Social Sciences Citation Index and/or Arts & Humanities Citation Index.

Science education, medical education, nursing, and nursing education: Science Citation Index Expanded and/or Social Sciences Citation Index.

Philosophy of science and history of science: Science Citation Index Expanded and/or Arts & Humanities Citation Index.

Agricultural economics: Science Citation Index Expanded and/or Social Sciences Citation Index.

Energy studies: Science Citation Index Expanded (technical aspects) and/or Social Sciences Citation Index (social and economic aspects).

Environmental law, environmental protection, and sustainability: Science Citation Index Expanded (technical aspects related to production and ecology) and/or Social

Sciences Citation Index (social, economic, and policy-related aspects, including sustainability governance and legislation).

Archaeology and cultural heritage: Arts & Humanities Citation Index and/or Social Sciences Citation Index (social and economic dimensions) and/or Science Citation Index Expanded (technical aspects).

Computer science and informatics: Science Citation Index Expanded (technical aspects such as computer systems, big data, and programming) and/or Social Sciences Citation Index (social and economic aspects, including applications in education and digital management systems).

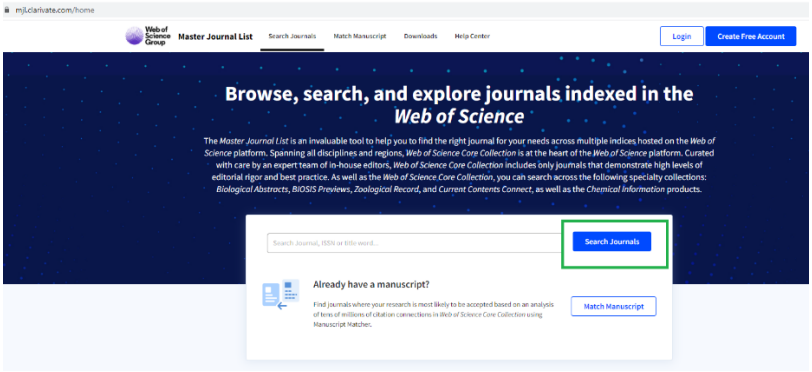
Artificial intelligence: Science Citation Index Expanded (technical aspects related to computing, medicine, mathematics, etc.) and/or Social Sciences Citation Index (social applications, including use in education, law, and economics).

If the requirements specify SSCI OR/AND AHCI, this indicates that both databases are acceptable for publication. Accordingly, journals indexed in either SSCI or AHCI may be considered.

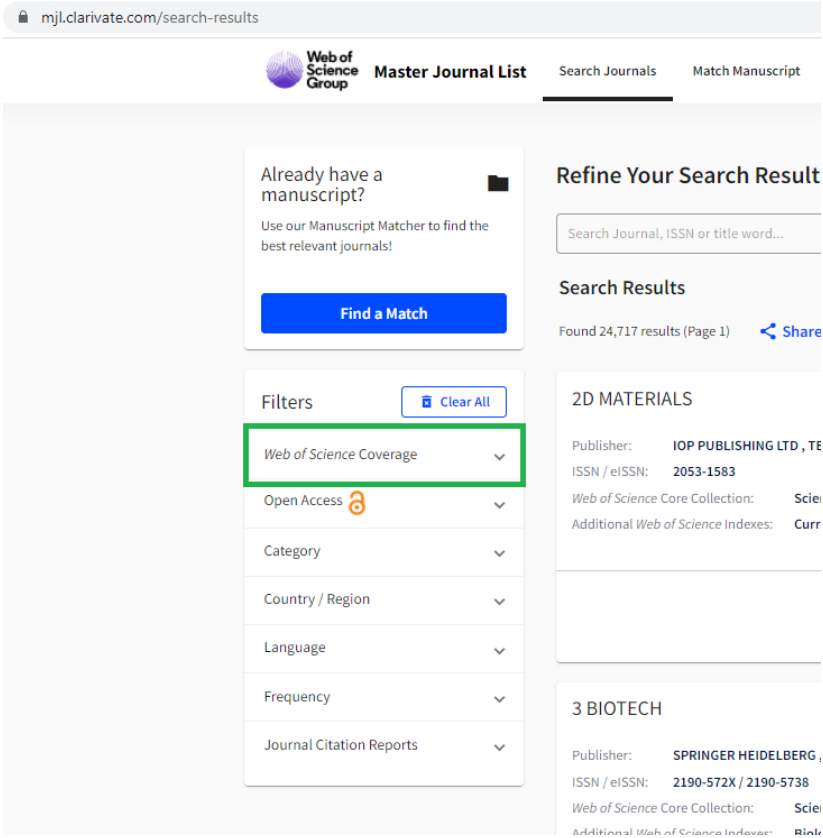
Selection of Web of Science (WoS) Journals for a Manuscript

If it is necessary to identify journals indexed in the Web of Science Arts & Humanities Citation Index or, for example, JCR Q4 journals within the Social Sciences Citation Index, the journal selection process should proceed as follows:

First, navigate to the “Search Journals” option.

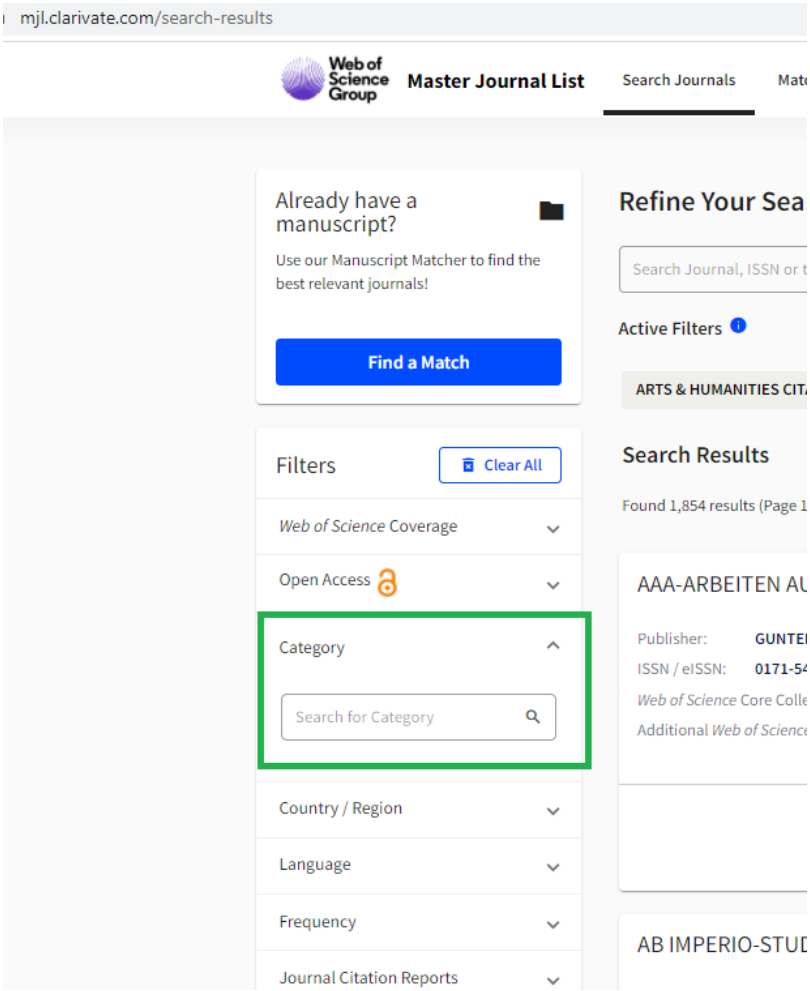


Next, select the "**Web of Science coverage**" option.

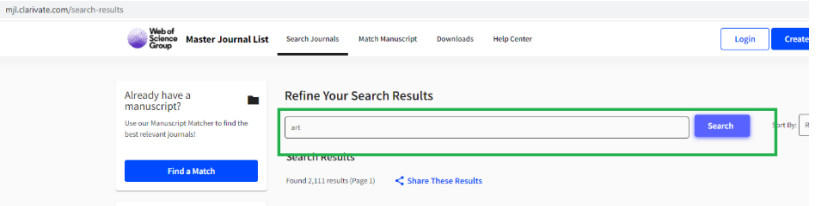


Next, select the required Web of Science sub-database**.**

Additionally, the Web of Science platform provides a "**Category**" filter, which allows for the specification of relevant subject area(s) of the journal.



Keywords may also be entered into the search field to refine the journal selection process.



If the requirements specify journals indexed in **WoS JCR Q1–Q2–Q3**, full access to the Web of Science database is required in order to verify the journal quartile. Such access is typically available at most major universities. If access is unavailable, alternative approaches include consulting unofficial sources or reviewing information directly on the websites of selected journals.

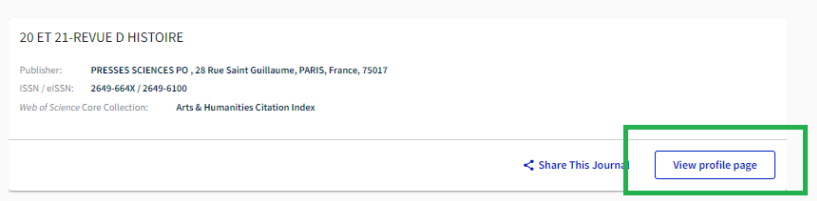
To proceed, click “Login” in the upper right corner and enter your credentials:

Login – provided by the university.

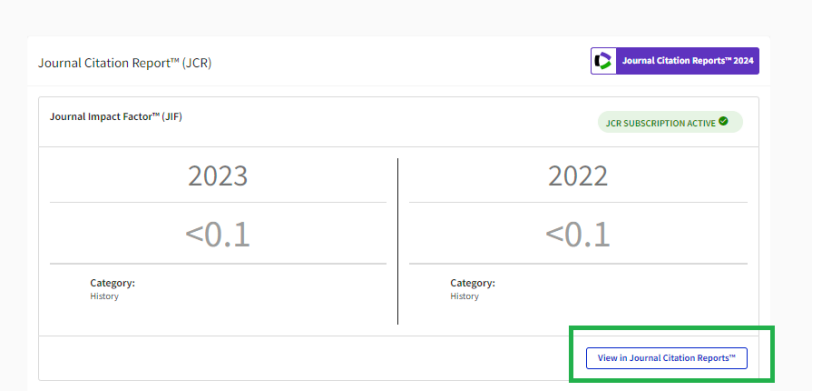
Password – provided by the university.

Follow the same journal search procedure described above, with the additional step of verifying the journal’s quartile within WoS (JCR).

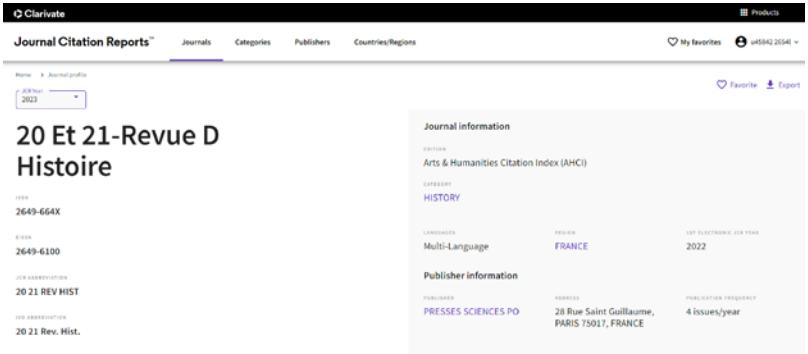
Once a suitable journal has been identified, select “View profile page.”



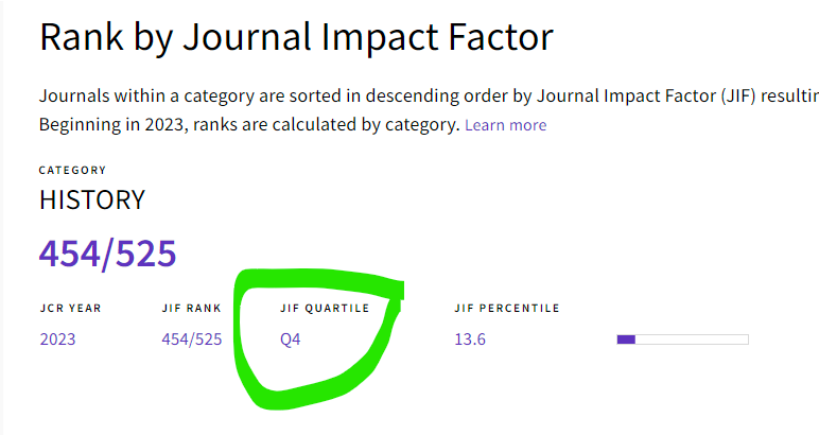
Next, select “**View in Journal Citation Reports”:**



This opens the full journal profile within the Web of Science database:



Find the category “**Rank by Journal Impact Factor**”.



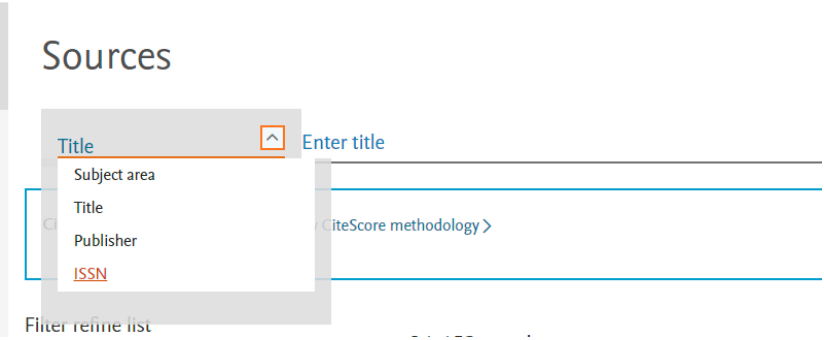
This corresponds to the journal’s quartile ranking within the Web of Science database.

Additional Tools for Journal Selection and Key Considerations

1. An alternative approach to journal selection involves first entering the key terms or a shortened version of the article topic into Google Scholar in order to identify journals that publish research in a similar area. Subsequently, these journals should be verified within the Scopus database to determine their indexing status and ranking.

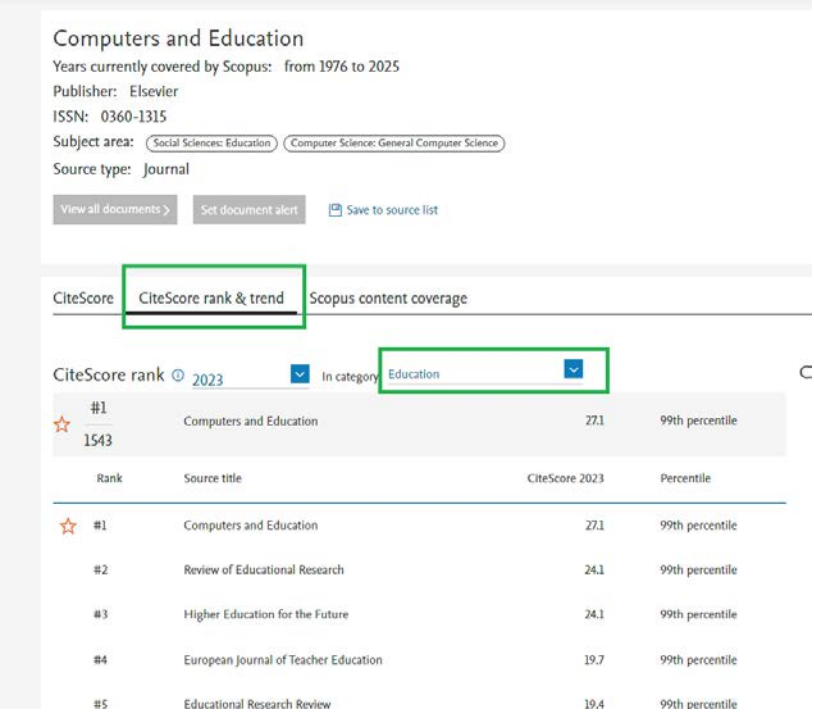
To do this, select the “**Title**” option, enter the journal name in the “**Enter title**” field, and click “**Find Sources”.**

Journal searches may also be conducted using the **ISSN** (International Standard Serial Number), a unique identifier assigned to each publication. ISSNs may exist in both electronic and print formats, depending on whether the journal is published exclusively online or also has a print version.

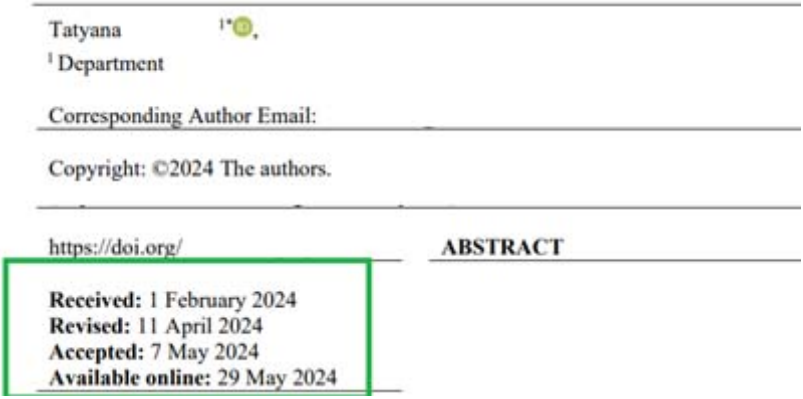


2. The publisher of the journal should also be considered during the selection process. Smaller, local publishers are often less demanding compared to major, well-established publishers such as Elsevier, Springer, or Wiley. The Scopus database provides a dedicated filter that allows journals to be sorted by publisher.

3. If a journal has been identified as a strong match for the manuscript and there is a need to explore additional journals within the same subject area, the “CiteScore rank & trend” section on the journal’s page can be utilized. This feature allows reviewing other journals within the same discipline, organized by ranking.



4. In some cases, the timelines for peer review and publication provided on a journal's website are presented in overly general terms (e.g., from one month to one year), making it difficult to assess the actual processing speed, especially if there has been no prior experience with the journal. In such situations, it is advisable to examine the PDF versions of articles published within the past year. These often include detailed submission histories, such as the dates of initial submission, revision after peer review, acceptance, and final publication.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https://doi.org/

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Accepted: 7 May 2024
Available online: 29 May 2024

ABSTRACT

5. When applying for indexing in Scopus, journal founders and editors may strategically declare highly specific subject areas in order to obtain higher rankings more easily and avoid placement within highly competitive categories such as General Economics, Management, Finance, Political Science, or Law. Achieving Q1–Q2 status in these fields is particularly challenging. As a result, journals in economics and related disciplines may opt for less competitive subject categories, such as Development; Geography, Planning and Development; or Social Sciences (miscellaneous), among others. Therefore, it is essential to carefully examine all assigned subject areas, including those that may initially appear overly specific or peripheral.

6. If the requirements specify a Scopus Q2 journal, it is appropriate to consider journals ranked in Q1–Q2. If a Q3 journal is required, journals in Q1–Q3 may be considered for submission, and so on by analogy. Thus, it is not necessary to limit the selection strictly to a single quartile. Journals with rankings higher than the minimum requirement may also be included, provided they align with the manuscript's scope, as well as with considerations such as publication costs and other relevant criteria.

7. The geographical distribution of publications within a journal should also be considered. It is important to analyze the countries of affiliation of the authors who publish in the journal. If a substantial proportion of publications originates from researchers based in countries such as Russia, Poland, India, Kazakhstan, or Pakistan, the likelihood of acceptance may be higher. Conversely, if the journal predominantly features authors from countries such as the United States, Germany, the Netherlands, or the United Kingdom, the probability of acceptance may be comparatively lower.

8. It is also possible to enter country names into the journal's search field to determine how many publications originate from authors affiliated with those countries, as well as how many articles address topics related to those regions.

If it is observed that the journal has not previously published work by authors from countries such as Kazakhstan, Russia, China, or similar contexts, and the manuscript clearly aligns with the journal's scope, this can be leveraged strategically. In such cases, it is advisable to highlight in the cover letter that an analysis of the journal's prior publications revealed a lack of representation of the specific country or group of countries under study. Accordingly, the submitted manuscript can be positioned as addressing this gap and offering content that is both novel and of interest to the journal's readership.

9. It is essential to analyze the journals cited in the reference list of the manuscript. The majority of these sources should be thematically aligned with the topic of the study and, therefore, potentially suitable as target journals for submission. If any of these journals also meet the formal requirements, they should be considered for submission.

Moreover, the reference list should be periodically updated prior to submission to new journals. A common reason for rejection is the statement that the authors have not engaged with or cited publications from the target journal, raising concerns about the appropriateness of the submission. Integrating relevant

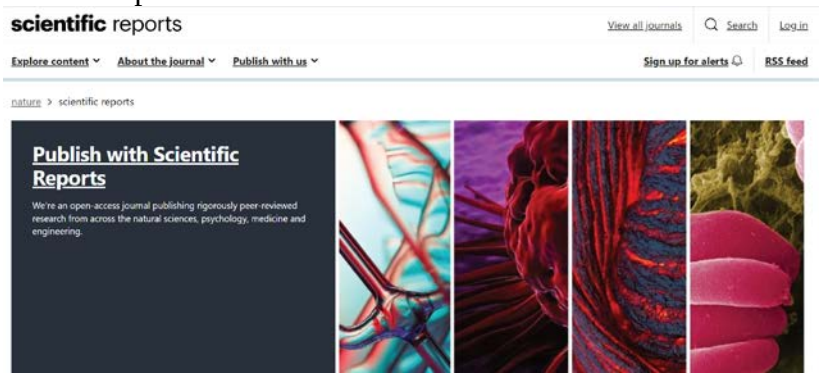
articles from the journal into the manuscript can help mitigate this issue and strengthen the submission.

10. Attention should be paid to the acceptance rate indicated on the journal's website. An acceptance rate of approximately 50% or higher suggests a relatively strong likelihood of manuscript acceptance. Conversely, if the acceptance rate is below 10%, such journals should not be prioritized and may instead be considered as secondary options in the event of rejection from other venues.

11. It is also important to evaluate the design and overall content quality of the journal's website.

Example 1

Example 2



If a journal's website has a somewhat outdated or unconventional design, this may be associated with a higher likelihood of acceptance. In contrast, highly ranked journals tend to invest more in the design and presentation of their websites, which often resemble those of professional scientific or popular science platforms.

12. Author guidelines may also specify the types of peer review used by the journal. Among these, some journals offer a "fast-track" option, which provides expedited manuscript processing for an additional fee (typically up to USD 600). This option should be approached with caution, as it does not guarantee acceptance despite the additional cost.

13. If a journal is expensive but highly suitable for the manuscript and has previously published similar research, it should not be excluded solely on the basis of cost. Instead, it is advisable to request a publication fee reduction at the time of submission. Authors may request a specific discount and provide a justified rationale, for example, by indicating limited research funding (e.g., in the case of early-career researchers or graduate students).

14. Given that publication requirements typically specify dissemination in international journals, submissions to nationally oriented journals - such as publications by authors from Russia in Russian Scopus-indexed journals or by authors from Kazakhstan in Kazakhstani Scopus-indexed journals - are generally excluded from consideration.

2.5. Verification of journal rankings (alternative methods)

Verification of a journal's indexing in Web of Science or Scopus should be conducted exclusively through official sources.

If a journal cannot be located via search (by title or ISSN), this indicates that it is not indexed in Web of Science. If a journal is marked as "On Hold," this signifies that it is currently under evaluation by Web of Science and may face potential indexing issues. Such journals should be avoided until the status is resolved, as they may ultimately be removed from the database.

Information obtained from other websites is not considered authoritative and may be outdated or inaccurate.

In cases where access to the full Web of Science database is unavailable (e.g., to verify JCR quartile or Impact Factor), alternative, non-official sources may be used as a preliminary reference. However, all findings must be cross-checked using the official Web of Science platform (https://mjl.clarivate.com/home) to confirm current indexing status. Additionally, it is advisable to review the journal's official website (accessible via the database) to ensure the accuracy and completeness of the information.

Verification of a journal's quartile using the Chinese Academy of Sciences (CAS) ranking:

Search link:

https://www.letpub.com.cn/index.php?page=journalapp&view=search

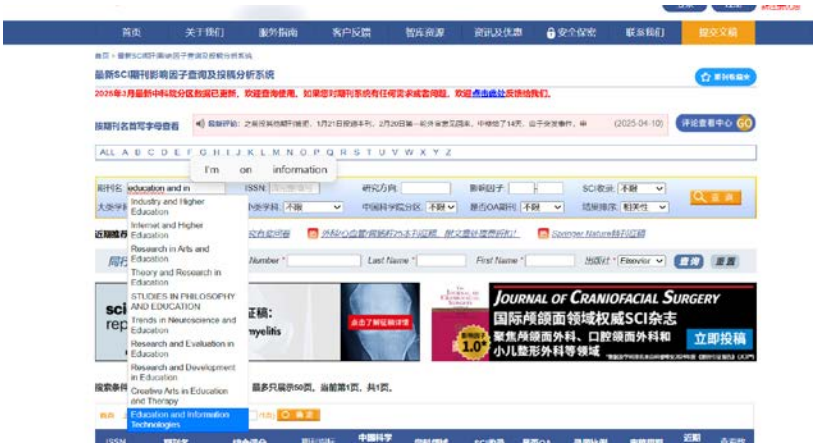
Enter or paste the full journal title into the search field on the left and initiate the search using the corresponding button, as illustrated below.

The journal's quartile indicator should then be examined.

For convenience, the webpage may be translated in the browser into English or Russian to facilitate comprehension.

The relevant indicator to locate is "WOS Zoning Level."

The journal title should either be copied from another source and pasted into the search field or entered manually in full, followed by initiating the search. It is important not to select the journal from the suggested dropdown list while typing the title.

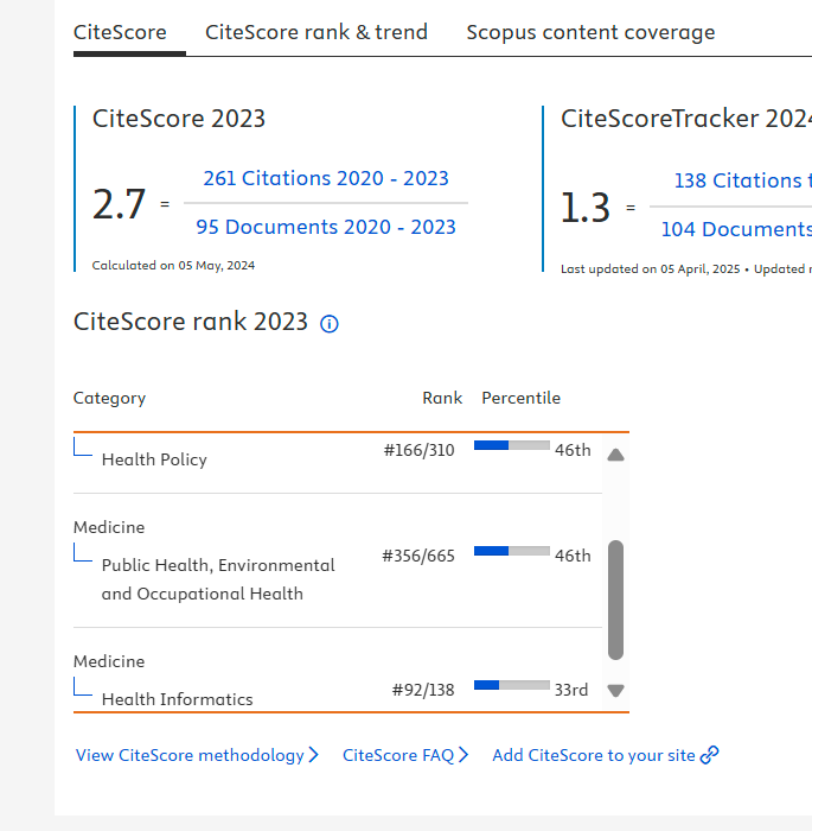


In that case, the system will redirect to an extended journal profile containing numerous additional indicators that are not relevant for the present purpose.

2.6. Examples of Errors in Journal Selection

1. Indonesian Journal of Health Administration
https://e-journal.unair.ac.id/JAKI/index

The journal is ranked Q2 in the category Medicine (miscellaneous); however, it is also indexed in subject areas such as Health Policy, Public Health, Environmental and Occupational Health, and Health Informatics, which are more closely aligned with the topic of the manuscript. In these more relevant categories, the journal holds a Q3 ranking.



Accordingly, the journal would be recognized by the university as a Q3-ranked publication.

Therefore, journal selection should be based on the quartile corresponding to the subject area most closely aligned with the topic of the manuscript.

2. Complex Psychiatry
https://karger.com/CXP

Journal focuses on the complexity of psychiatry and human behavior considering a wide range of methods – including genomics, epigenomics, transcriptomics, proteomics, metabolomics, pharmacogenomics, bioinformatics, molecular neuropharmacology, neural circuits, neural stem cells, and systems neurobiology in humans, and in animal and cellular model systems.

The journal is primarily oriented toward psychiatry, whereas the manuscript is more closely related to social issues; therefore, it is not suitable.

3. European Journal of Behavior Analysis
https://www.tandfonline.com/journals/rejo20

There is a concern regarding the journal's ranking. The manuscript does not fall within the field of education (where the journal is ranked Q2); rather, it aligns more closely with psychology, in which the journal holds a Q3 ranking.

European Journal of Behavior Analysis

Years currently covered by Scopus: from 2000 to 2025

Publisher: Taylor & Francis

E-ISSN: 2377-729X

Subject area: Social Sciences: Education | Psychology: General Psychology

Source type: Journal

View all documents > | Set document alert | Save to source list

CiteScore | CiteScore rank & trend | Scopus content coverage

CiteScore 2023

2.6 = 141 Citations 2020 - 2023 / 54 Documents 2020 - 2023

Calculated on 05 May, 2024

CiteScoreTracker 2

1.7 = 78 Citatio / 46 Docume

Last updated on 05 April, 2025 • Up

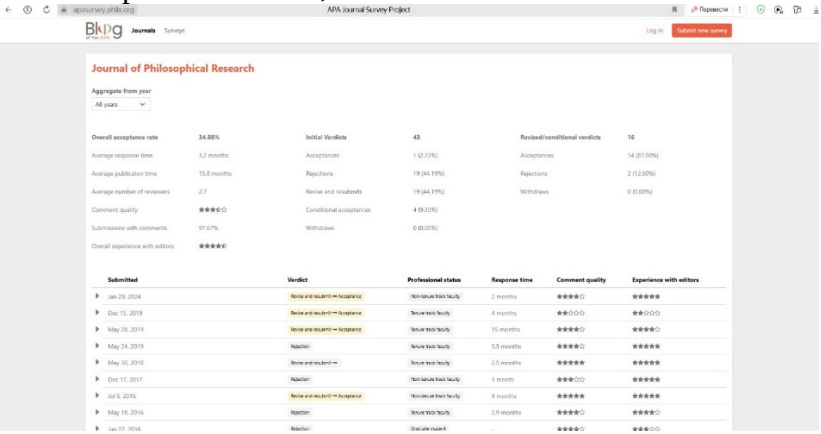
CiteScore rank 2023

Category	Rank	Percentile
Social Sciences └ Education	#635/1543	58th
Psychology └ General Psychology	#116/216	46th

Accurate information regarding acceptance rates is available only on the official websites of journals. Although other resources may provide acceptance rate data (such as those illustrated in the figures below, journals 4–8), these are not official statistics but rather approximate estimates. Such figures are often based on feedback from authors who have previously submitted manuscripts to the journal and are typically hosted on non-official websites. Therefore, reliance on third-party (non-official) sources should be limited, as they may present incomplete or unreliable information.

4. Journal of Philosophical Research
https://www.pdcnet.org/jpr/Journal-of-Philosophical-Research

Acceptance rate - 34,88%

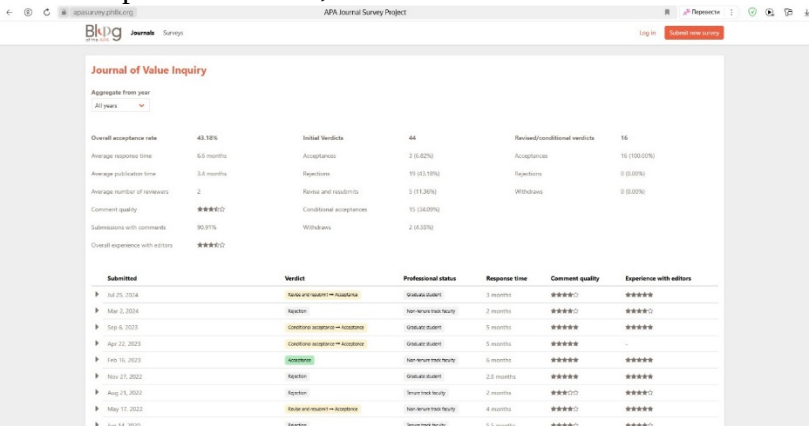


5. International Journal of Philosophical Studies
https://www.tandfonline.com/journals/riph20

Acceptance rate - 24%.

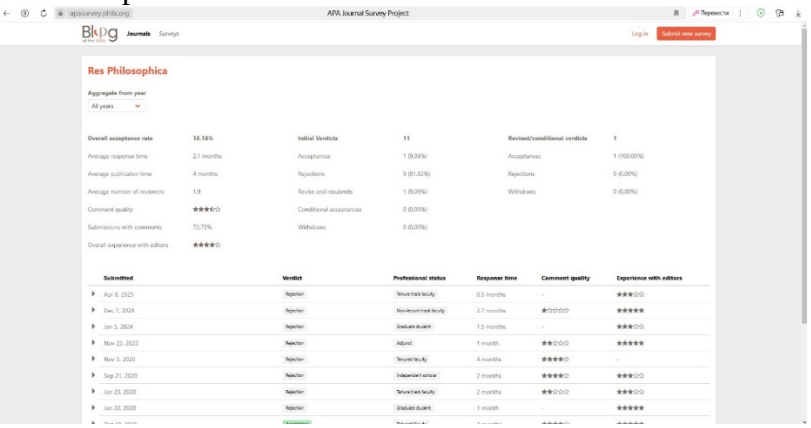
6. Journal of Value Inquiry
https://link.springer.com/journal/10790

Acceptance rate - 43,18%.



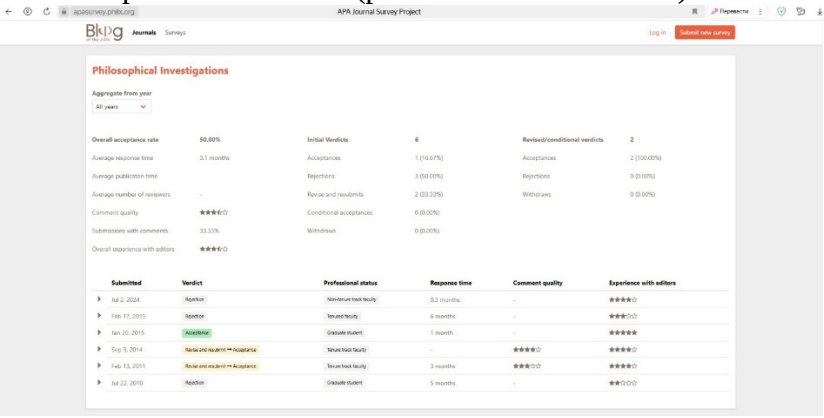
7. Res Philosophica
https://www.resphilosophica.org

Acceptance rate - 22%.



8. Philosophical Investigations
https://onlinelibrary.wiley.com/journal/14679205

Acceptance rate - 50% (publication fee: USD 25).



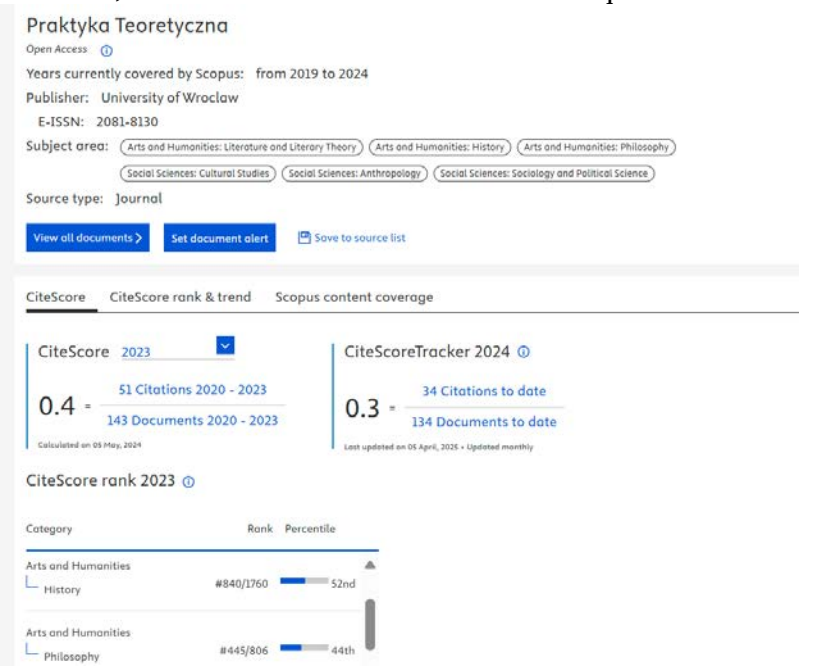
Discrepancies in the reported data for the journal Philosophical Investigations further demonstrate that acceptance rate information provided by external sources may be inaccurate or outdated.

The actual acceptance rate of this journal is not 50%, but approximately 12%, which is relatively low.

(https://onlinelibrary.wiley.com/journal/14679205/journal-metrics).

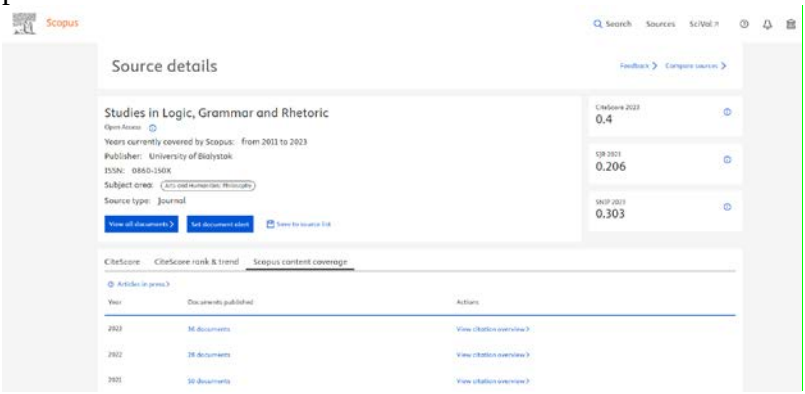
9. Praktyka Teoretyczna
https://www.praktykateoretyczna.pl

The requirements specify a Scopus Q2 journal (percentile ≥ 50) within the field of philosophy. However, for this journal, the percentile in philosophy is 44, corresponding to a Q3 ranking; therefore, it does not meet the required criteria.



10. Studies in Logic, Grammar and Rhetoric
https://sciendo.com/journal/SLGR

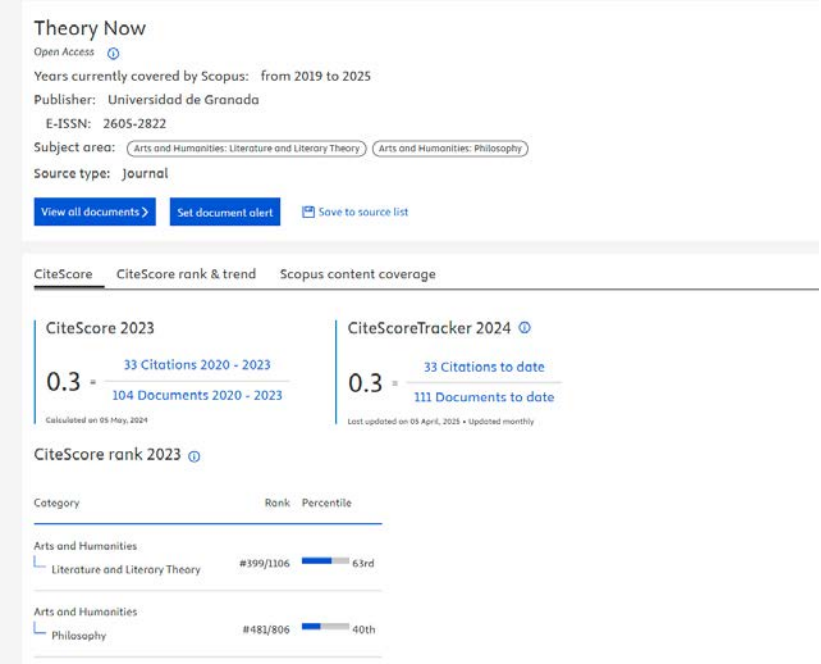
Such journals should be approached with caution, as the absence of indexed publications for 2024–2025 may indicate potential issues and is therefore a matter of concern.



In this case, the situation is most likely explained by the fact that the journal publishes only one issue per year, typically in December, and the articles may not yet have been indexed within a four-month period. However, such a pattern can, in some instances, precede the removal of a journal from the Scopus database. Accordingly, it is advisable to monitor the journal periodically by checking the Scopus database to determine whether publications for 2024 have been indexed.

11. Theory Now
https://revistaseug.ugr.es/index.php/TNJ/index

The requirements specify a Scopus Q2 journal (percentile ≥ 50) in the field of philosophy. However, this journal has a percentile of 40 in philosophy, corresponding to a Q3 ranking, and therefore does not meet the required criteria:



12. Applied Economics

https://www.tandfonline.com/journals/raec20

The journal imposes a submission fee, i.e., a charge for manuscript submission alone; such journals are excluded from consideration.

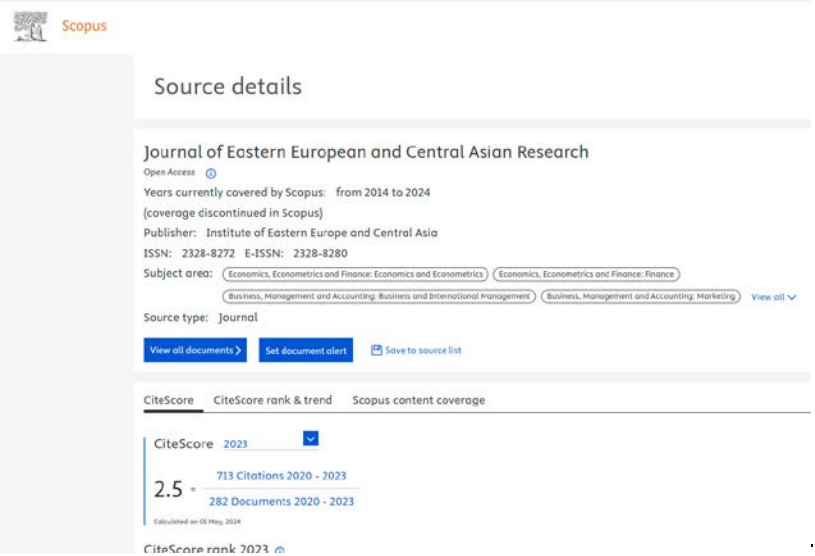
There is a non-refundable submission fee of USD 250 (two hundred and fifty US dollars) to pay when submitting to this journal.

https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=raec20

13. The Journal of Eastern European and Central Asian Research

https://ieeca.org/journal/index.php/JEECAR/index

The journal is no longer indexed in Scopus:



The following section addresses more subtle errors in journal selection.

At first glance, all selected journals appear to match the manuscript in terms of thematic scope. However, the likelihood of publication in most of these outlets is low. The selection process was largely formal and did not involve a comprehensive evaluation of the journals' characteristics.

The requirement for this manuscript is a Scopus Q2 journal. However, all selected journals are also indexed in Web of Science and, moreover, hold a Q1 ranking in Scopus.

More demanding, high-ranking journals have been selected. Consequently, one may expect longer peer-review timelines, more critical evaluations, and the involvement of a larger number of reviewers (often 4–7), which may result in numerous and potentially conflicting comments. Such conditions are not aligned with the primary objective. The goal is to achieve publication efficiently, with a minimal number of submission attempts (ideally, acceptance by one of the first 5–10 selected journals), rather than targeting only the most prestigious outlets in the field.

The primary criterion should be a precise match between the journal's scope and the manuscript's topic. However, if the requirement is Scopus Q2, there is no need to complicate the process by selecting exclusively top-tier journals (e.g., Scopus Q1 combined with WoS indexing).

In addition, journals should be selected with consideration of optimal publishing conditions, including acceptance rates and the overall number of articles published annually.

Publishers such as The University of Chicago Press, Duke University Press, University of Michigan Press, Cambridge University Press, and Oxford University Press are generally not suitable targets when a higher likelihood of acceptance is required. These publishers tend to have highly selective standards, publish a limited number of articles annually, and often prioritize submissions from established or institutionally affiliated authors. Consequently, their acceptance rates are typically very low.

For example, the first selected journal, Philosophical Review, publishes no more than approximately nine articles per year. This suggests that the journal's website and its Scopus profile were not sufficiently analyzed during the selection process.

1. Philosophical Review

https://read.dukeupress.edu/the-philosophical-review

Q1, percentile 98 + WoS; publisher – Duke University Press.

Publishes a maximum of approximately 9 articles per year.

2. British Journal for the Philosophy of Science

https://www.journals.uchicago.edu/loi/bjps

Q1, percentile 99 + WoS; publisher – University of Chicago Press.

3. Social epistemology

https://www.tandfonline.com/toc/tsep20/current

Q1, percentile 91 + WoS; acceptance rate – 35%, which is an adequate level.

Overall, this journal may be considered for submission despite its higher ranking.

4. Philosophy and Phenomenological Research

https://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1933-1592

Q1, percentile 94.

Acceptance rate – approximately 11%, which is relatively low.

(https://onlinelibrary.wiley.com/journal/19331592/journal-metrics)

5. Philosophy Compass

https://compass.onlinelibrary.wiley.com/journal/17479991

Q1, percentile 94 + WoS; acceptance rate for 2024 – 88%, which is a strong indicator.

This journal may be considered for submission despite its higher ranking.

6. Philosophers imprint

https://journals.publishing.umich.edu/phimp/

Q1, percentile 93 + WoS; publisher – University of Michigan Library.

7. Cambridge Journal of Economics

https://academic.oup.com/cje

Scopus Q2 + WOS

Oxford University Press

8. Post-Communist Economies

https://www.tandfonline.com/journals/cpce20

Scopus Q2 + WOS

Scopus Q2 + WoS; acceptance rate – 17%, which is relatively low.

(https://www.tandfonline.com/journals/cpce20/about-this-journal#journal-metrics)

9. Applied Economics

https://www.tandfonline.com/journals/raec20

Scopus Q2 + WOS

Scopus Q2 + WoS; acceptance rate – 36%, which is an acceptable level.

This journal may be retained for submission despite its parallel indexing in WoS.

10. Economic Development and Cultural Change
https://www.journals.uchicago.edu/toc/edcc/current
Scopus Q2 + WOS
University Chicago Press

11. Studies in Economics and Finance
https://www.emeraldgrouppublishing.com/journal/sef
Scopus Q1 + WOS (sub-database: EMERGING SOURCES CITATION INDEX)
Acceptance rate is approximately 5.7%, which is very low. (https://www.emeraldgrouppublishing.com/journal/sef)

The selected journals are generally appropriate in terms of thematic alignment and, formally, meet ranking requirements while publishing a sufficient number of articles annually. However, the probability of acceptance in most of these journals remains relatively low due to their high impact factors and low acceptance rates.

1. Journal of Technology Transfer
https://link.springer.com/journal/10961
The journal is thematically appropriate; however, it has a high impact factor (4.6) and is a highly ranked outlet indexed in Web of Science).

2. Technology Analysis & Strategic Management
https://www.tandfonline.com/journals/ctas20
The journal aligns with the topic; however, its acceptance rate is approximately 14%, which is relatively low. It is not an optimal submission option, particularly given that the requirement is only Scopus Q1–Q2, while this journal is also indexed in WoS SSCI and has an impact factor of 2.9.

3. International Journal of Entrepreneurial Behavior & Research

https://www.emerald.com/insight/publication/issn/1355-2554

The acceptance rate is approximately 6.7%, and the journal is indexed in WoS SSCI (impact factor 4.5). This is not a favorable option for submission.

4. Business Process Management Journal

https://www.emerald.com/insight/publication/issn/1463-7154

The acceptance rate is approximately 15.5%, and the journal is indexed in WoS SSCI (impact factor 4.5). This is also not an optimal submission option.

5. International Entrepreneurship and Management Journal

https://link.springer.com/journal/11365

The acceptance rate is approximately 15.5%, and the journal is indexed in WoS SSCI (impact factor 6.2). This is not a preferred option for submission.

Section 3. Writing a Research Article

3.1. Author's Note

If the objective is to publish a research article, it is essential to identify benchmark studies of the highest quality and use them as reference points. **These benchmark articles should include four papers (within the required ranking level) from journals selected for submission, as well as four additional papers from high-ranking journals (Q1–Q2).**

Authors typically write based on their own experience, which is often insufficient for publication in high-impact journals. In most cases, authors rely on what they personally consider relevant; however, this approach alone is inadequate. Instead, it is necessary to draw on established examples - articles already published in the target journals - preferably the best among them. The goal is to produce a manuscript that exceeds the average quality of articles published in the selected journals.

Self-assessment:

1. Questions to yourself: Is the manuscript among the best articles in the target journal(s)?

2. If not, continue refining and improving the manuscript.

Additional considerations:

The completed manuscript should be equal to or superior in quality to the articles published in the most recent issues of the journals targeted for submission.

Formulaic, superficial, or conceptually weak manuscripts (often involving poorly justified models) are unlikely to succeed and may lead to significant difficulties throughout the publication process, resulting in wasted time.

All manuscripts will ultimately be translated into English or undergo language editing; therefore, excessive focus on minor technical aspects such as proofreading or typographical corrections at early stages is not necessary.

The primary objective is to produce a high-quality manuscript in terms of substantive content - one that demonstrably exceeds the standard of already published work.

3.2. General Requirements for Research Articles

When preparing a manuscript, it is important to take into account the geographical composition of the author team and to frame the study using examples relevant to those countries or regions.

The language of the manuscript must be English.

Recent international sources must be used. Guidance on how and where to obtain such sources is provided in the section on searching for articles in international databases. Access to Scopus is typically available at major universities.

The manuscript should be of clear interest to the global academic community.

General requirements:

1. The manuscript must be original and not previously published.

2. If the manuscript is written directly in English, the language quality must be of a high standard.

3. The standard length of the manuscript is 5,000–7,000 words (word count can be checked in the lower-left corner of Microsoft Word).

4. The title of the manuscript should not exceed 10 words.

Structure of the article:

Abstract.
Keywords.
1. Introduction.
2. Methods.
3. Literature Review.

4. Results.
5. Discussions.
6. Conclusions.
References.

Requirements for the Manuscript:
1. Standard length: 5,000–7,000 words.
2. Title: no more than 10 words**.**
3. Abstract: not less than 20 lines.
4. Keywords: not fewer than 12 terms.

Example 1: This article examines the issues of … The characteristic features of … are analyzed, along with their application in the process of … The necessity of … is identified and substantiated. Based on the conducted research, the author proposes …, provides its definition, and formulates the key characteristics of …

Example 2: The article is devoted to …, which … It is demonstrated that … play a significant role in society: they may … or alternatively … In the 21st century, … should develop as …, characterized by … aspects. The principal advantage of the approach proposed by the author lies in …, …, and …

Example 3: The article aims to examine … using the case of … As a result of the analysis, the author, for the first time in …, demonstrates that … These entities possess …, which provides …

Example 4: The article addresses issues related to … The author explores the objectives, forms, and types of … Particular attention is given to … and … Based on the analysis of …, its …, as well as …, the role of … in … is determined.

4. Headings. The manuscript should be structured into clearly defined sections with the following headings: Abstract; Keywords; 1. Introduction; 2. Methods; 3. Literature Review; 4. Results; 5. Discussion; 6. Conclusions; References.

5. Introduction (research relevance).

The Introduction should articulate a problem that remains unresolved in the scientific literature or has been only partially addressed. Its practical significance should be clearly stated.

It is essential to explicitly demonstrate the contribution of the study to global scholarship, rather than providing a general or descriptive narrative.

Recommended length: 1–2 pages.

6. Methods.

This section should provide a detailed description of the research methods and methodologies employed. It should include the organization of the study or experiment, the procedures used, the equipment or instruments applied, and comprehensive information about the research objects (whether human participants or non-living entities).

Common research methods include observation, surveys, testing, experimentation, laboratory procedures, analysis, modeling, and synthesis or generalization of findings.

Recommended length: 1–2 pages.

7. Literature Review.

The literature review should cover 20–40 English-language sources and include a comparative analysis of existing scholarly perspectives.

The following aspects should be addressed:

general trends in previously published research;

inconsistencies or conflicts in theory, methodology, practice, or research findings;

gaps in existing studies or theoretical frameworks;

a specific research problem or future directions for investigation.

The author’s position should be clearly articulated within the review, and the criteria used for selecting and analyzing the literature must be transparent.

Based on this analysis, the relevance of the study should be substantiated.

The literature review serves two primary purposes:

1. to demonstrate that the author is familiar with current trends, research developments, and key findings in the field;

2. to justify the relevance of the topic by showing that, despite a substantial body of publications, the specific research area remains insufficiently explored.

Recommended length: 1–2 pages.

8. Results.

This section should clearly present the research objectives and tasks, followed by a detailed description of the study. The emphasis should be placed on the author's original analysis and interpretation rather than reiteration of existing literature.

The results must demonstrate a degree of scientific novelty and directly address the topic of the article. The section should include:

- key characteristics of the phenomenon under study;
- analysis of domestic (local) experience;
- analysis of international experience;
- identification of elements of international practice that may be adapted within the author's national context;
- evaluation of domestic experience with potential relevance to global scholarship;
- discussion of what is already implemented in practice;
- proposals for future application and development;
- a forward-looking perspective on the development of the studied phenomenon at both national and global levels.

Recommended length: 8–15 pages.

9. Discussion.

This section provides an interpretation and critical evaluation of the research findings. The results obtained in the study should be compared with those reported in prior research.

By examining existing theoretical frameworks, the author should identify which perspectives best explain the observed results. The discussion should assess the validity and reliability of the findings and situate them within the broader body of scientific knowledge.

Recommended length: 1–4 pages.

10. Conclusions.

The Conclusions section should summarize the main findings of the study. It must provide a concise synthesis of the core content of the article.

Recommended length: 1–2 pages.

11. References.

The reference list should include 20–40 English-language sources, of which more than 10 should have been published within the last three years.

12. Additional Considerations.

If the article is not purely philosophical, it should include at least one table and one figure. All tables and figures must be of high quality and clearly presented.

If the article reports an empirical study, the Conclusions section should include practical recommendations as well as directions for future research.

In fields such as economics, engineering, and related disciplines, the article should contain formulas, numerical data, calculations, statistical analysis, and other forms of quantitative or analytical evidence.

In medical research, ethical considerations involving human or animal subjects must be addressed. The manuscript should specify the authority that granted ethical approval for the study. If no such approval was required, this should be explicitly justified.

3.3. Algorithms for Identifying Benchmark Articles Prior to Writing

Example 1:

Benchmark articles can be identified through targeted searches using keywords, components of the topic, or the full title:

1. In Google Scholar.
2. On the websites of journals that align with the topic and required ranking.
3. Within publisher databases (many journal websites provide a unified search function across the publisher's portfolio), followed by verification of the journal's ranking.
4. In Scopus and Web of Science databases, focusing on indexed articles, followed by verification of journal rankings.

Example 2:

1. Define the topic of the article and extract the key terms.
2. Identify the countries where the research has been or will be conducted.
3. Search for benchmark articles using keywords and country-specific queries.
4. For each selected article, conduct a detailed analysis of:

- the journal in which it is published;
- the year of publication;
- the structure of the article;
- the quality of the research, including the theoretical framework (quality of sources), methodology, results and their presentation, and any calculations or analytical components.

Example 3:

1. Enter keywords and their synonyms into the following platforms: Google Scholar, ResearchGate, Scopus, Web of Science, and ScienceDirect.
2. Apply a publication date filter for the most recent five years.
3. Prioritize articles published in high-ranking journals.
4. Analyze citation counts and the academic standing of the authors.
5. Review articles published in journals where the authors have previously published.
6. Identify journals that regularly publish research on similar topics.

Example 4:

1. Define the key concepts of the manuscript and use them as search queries in Scopus.
2. Analyze the search results and select articles that:
- are closely aligned with the topic and required structure;
- are published in high-ranking journals (Q1–Q2);
- include well-developed figures, tables, and analytical components.

3.4. Searching for Articles in International Databases: Google Scholar and Scopus

The first step is to clearly define and analyze the topic of the article, followed by the identification of its key concepts.

Importantly, key concepts are not the same as keywords. Key concepts represent a set of fundamental ideas that capture the essence of the study and facilitate the identification of similar or related research. These concepts may be classified as primary and auxiliary. Primary key concepts form the scientific foundation of the article, whereas auxiliary concepts help refine and narrow the search scope.

Primary key concepts may not necessarily appear explicitly in the abstract or the main text of the article. In many cases, they provide a more precise representation of the research focus than conventional keywords.

Examples of key concepts:
- phytoremediation + heavy metals;
- phytoremediation + phytomass + soil contamination;
- phytoremediation + phytomass + waste (industrial);

As illustrated by the abstract example, the term “phytoremediation” does not explicitly appear in the text; however, it provides the most comprehensive characterization of the processes examined in the study.

These key concepts should be used when searching for relevant articles in databases such as Scopus and Google Scholar.

For example, consider the following article abstract.

ABSTRACT

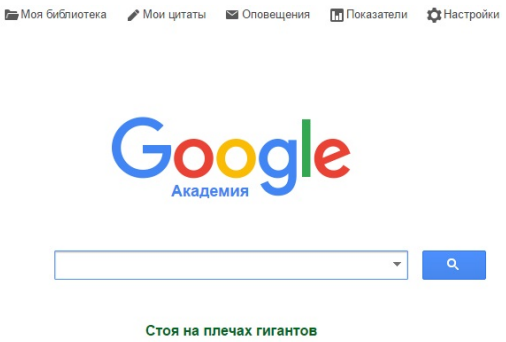
This study considered the possibility of using plant community phytomass for the assessment of soil pollution with heavy metals from industrial wastes. The three-year long field experiment was run under the regional natural meadow vegetation; the polymetallic galvanic slime was used as an industrial waste contaminant. It is shown that soil contamination primarily causes decrease of phytomass in the growing phytocenosis. The vegetation experiments determined non-linear dependence of cultivated and wild biomass on the level of soil contamination; it is described by the equations of logistic and Gaussian regression.

In the absence of permanent contaminants, the soil is self-cleaned over time; it reproduces phytomass mainly due to the productivity increase of the most pollution-tolerant species in the remaining phytocenosis; this phenomenon is defined as environmental hysteresis. Soil pollution by industrial waste leads to the loss of plant biodiversity.

The research shows that the study of the heavy metals impact on ecosystems is expedient given consideration of the "soil-phytocenosis-pollutant" complex in the "dose-response" aspect. The reaction of phytocenosis on heavy metals showing decline in phytomass makes serious limitations in the choice of accumulating plants, because the adsorbed heavy metals are rejected through phytomass.

Search for Articles via Google Scholar

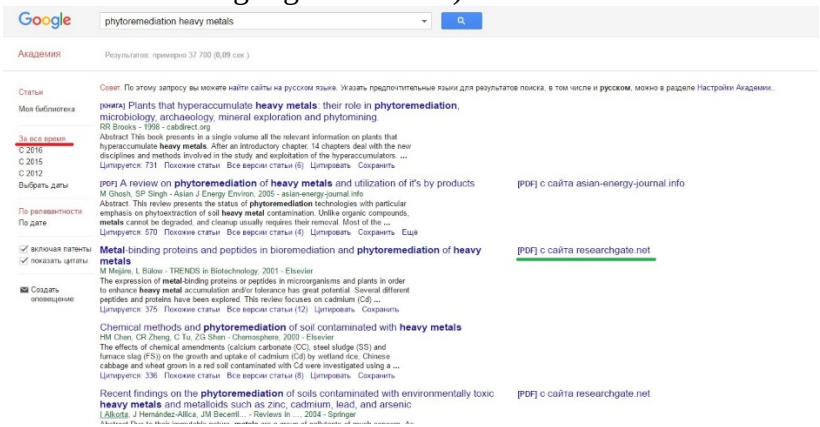
1. Access Google Scholar at: scholar.google.com



2. Enter the identified key concepts into the search field.

3. Apply a publication date filter (as indicated in the highlighted section).

4. Identify articles available for open-access download (as indicated in the highlighted section).



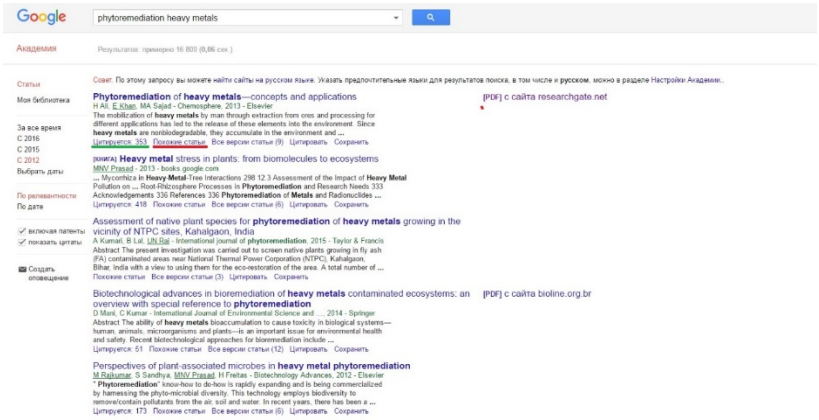
5. Identify the most relevant key concepts and the appropriate date range. Review the search results, select the most suitable articles, and download them.

6. If a highly relevant article is identified, examine the “Cited by” and “Related articles” sections. In many cases, a substantial proportion of the articles listed under these links are available in open access.

7. If the article aligns well with the research topic, select the “Cited by” option to access subsequent studies that have cited it, often providing a large number of additional relevant sources for download.

8. Alternatively, use the “Related articles” option to identify thematically similar studies.

9. Download the PDF versions of all relevant articles and proceed with their detailed analysis.




Похожие статьи

Phytoremediation of heavy metals—concepts and applications [PDF] с сайта researchgate.n
H Ali, E Khan, MA Sajad - Chemosphere, 2013 - Elsevier
The mobilization of heavy metals by man through extraction from ores and processing for different applications has led to the release of these elements into the environment. Since heavy metals are nonbiodegradable, they accumulate in the environment and ...
Цитируется: 353 Похожие статьи Все версии статьи (9) Цитировать Сохранить

Challenges and opportunities in the phytoremediation of heavy metals contaminated soils: A review [PDF] с сайта researchgate.n
A Mahar, P Wang, A Ali, MK Awasthi, AH Lahori... - Ecotoxicology and ..., 2016 - Elsevier
Abstract Mining operations, industrial production and domestic and agricultural use of metal and metal containing compound have resulted in the release of toxic metals into the environment. Metal pollution has serious implications for the human health and the ...
Цитируется: 1 Похожие статьи Все версии статьи (4) Цитировать Сохранить

Hyperaccumulators of metal and metalloid trace elements: facts and fiction [PDF] с сайта researchgate.n
A van der Ent, AJM Baker, RD Reeves, AJ Pollard... - Plant and Soil, 2013 - Springer
Abstract Background Plants that accumulate metal and metalloid trace elements to extraordinarily high concentrations in their living biomass have inspired much research worldwide during the last decades. Hyperaccumulators have been recorded and ...
Цитируется: 245 Похожие статьи Все версии статьи (16) Цитировать Сохранить

Role of hyperaccumulators in phytoextraction of metals from contaminated mining sites: a review [PDF] с сайта researchgate.n
V Sheoran, AS Sheoran, P Poonia - Critical Reviews in ..., 2010 - Taylor & Francis
Accumulation of heavy metals in selective locations of the environment has been attracting considerable public attention over the last decades. The conventional clean-up technologies to extract and remove heavy metals from mining sites are either inadequate or too ...
Цитируется: 60 Похожие статьи Все версии статьи (6) Цитировать Сохранить

[PDF] Heavy metals in contaminated soils: a review of sources, chemistry, risks and best available strategies for remediation [PDF] с сайта hindawi.com
RA Wuana, FE Okieimen - ISRN Ecology, 2011 - downloads.hindawi.com
Scattered literature is harnessed to critically review the possible sources, chemistry, potential biohazards and best available remedial strategies for a number of heavy metals (lead, chromium, arsenic, zinc, cadmium, copper, mercury and nickel) commonly found in ...
Цитируется: 359 Похожие статьи Все версии статьи (9) Цитировать Сохранить Ещё

Heavy metal hyperaccumulating plants: how and why do they do it? And what makes them so interesting? [PDF] с сайта wisc.edu
N Rascio, F Navari-Izzo - Plant Science, 2011 - Elsevier
The term "hyperaccumulator" describes a number of plants that belong to distantly related families, but share the ability to grow on metalliferous soils and to accumulate extraordinarily high amounts of heavy metals in the aerial organs, far in excess of the levels found in the ...
Цитируется: 477 Похожие статьи Все версии статьи (10) Цитировать Сохранить

A review on heavy metals (As, Pb, and Hg) uptake by plants through phytoremediation [PDF] с сайта hindawi.com
BV Tangahu, SR Sheikh Abdullah, H Basri - International Journal of ..., 2011 - hindawi.com
Heavy metals are among the most important sorts of contaminant in the environment. Several methods already used to clean up the environment from these kinds of ...

Importantly, Google Scholar employs the same search operators and functionalities as the standard Google search engine.

It is therefore essential to familiarize oneself with the core search features (see: lifehacker.ru/2014/07/03/vse-sekrety-google

One of the most effective tools is the “exact phrase search” function.

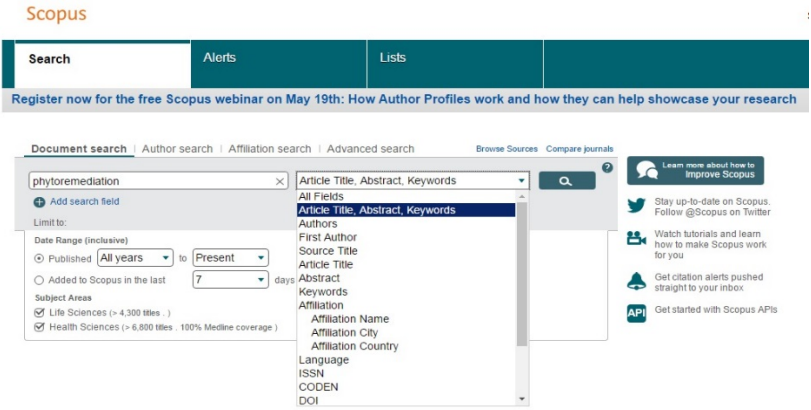
Search for Articles via the Scopus System

Login credentials are typically available through a university. Alternatively, access to the Scopus database may be obtained through major public or academic libraries, which often provide institutional access.

1. Access the Scopus system via the following link: scopees.elsevier.com

2. Enter the login credentials (username and password). If the browser returns an error, retry the login process; Mozilla Firefox is generally the most stable option.

3. Proceed to the search field and enter the relevant query terms.

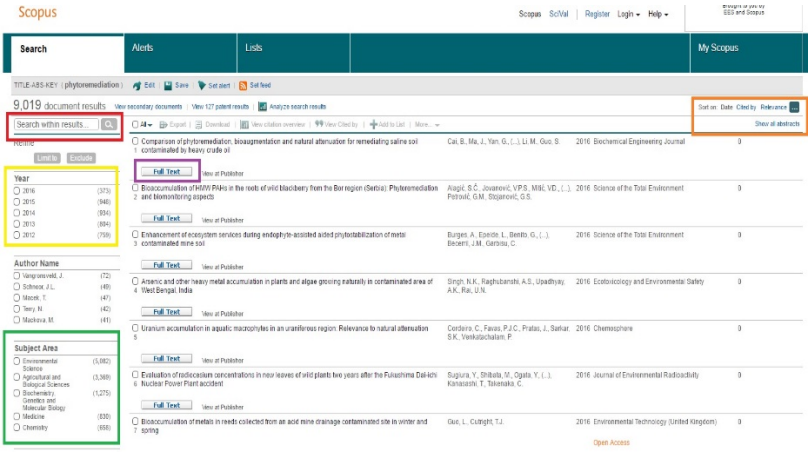


Importantly, the Scopus system enables searches across multiple parameters available within the interface.

At the initial stage of the search, only the primary concept should be entered.

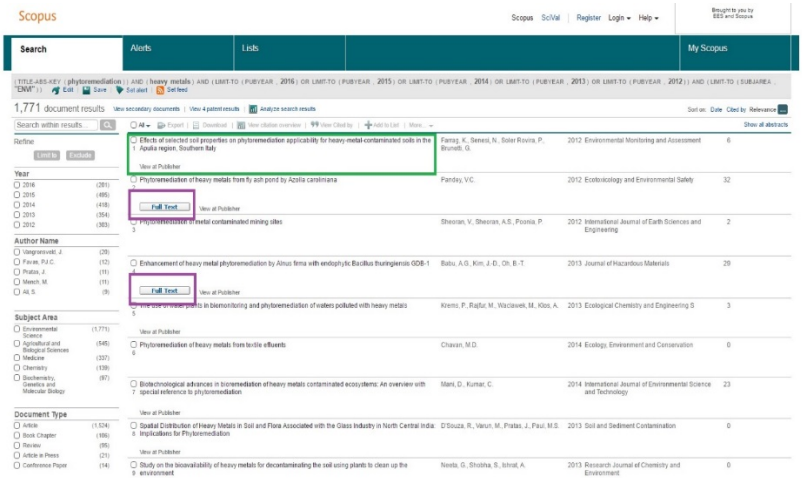
4. Proceed to the search results.

Importantly, Scopus provides a wide range of filtering options. Among the most significant are: refinement by additional concepts (highlighted in red), sorting criteria (e.g., by date, relevance, or citation count) (highlighted in orange), subject area classification (highlighted in green), and publication date (highlighted in yellow).

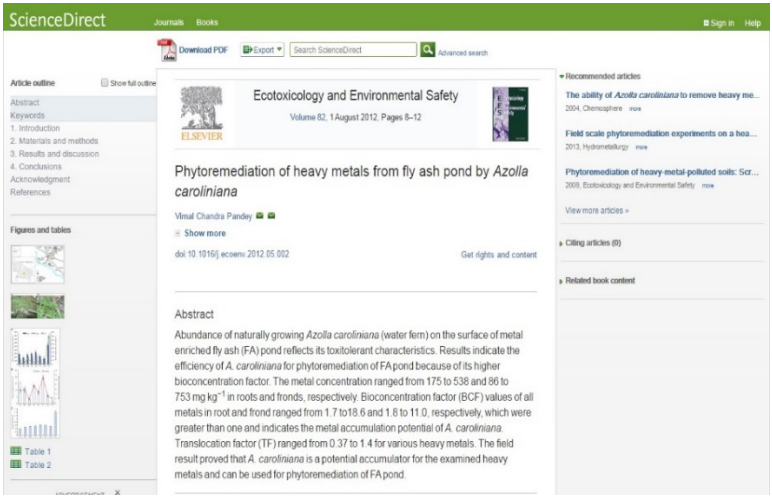


5. Select the articles to be used for further analysis.

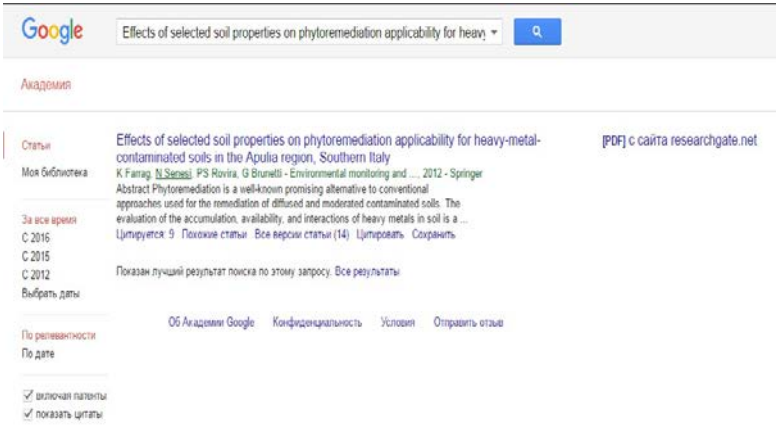
Importantly, Scopus indicates which articles are available in open access. By clicking the “Full Text” option (highlighted in purple), you will be redirected to the journal’s website hosting the article. However, even if direct access is unavailable, it is advisable to check for the article via Google Scholar, as alternative access options may be available.



6. Verification of full-text availability on the journal's website.



7. Verification of full-text availability via Google Scholar. Copy the article title (highlighted in green) and enter it into Google Scholar. This illustrates a case where access is unavailable in Scopus but accessible through Google Scholar.



8. Download the relevant articles and proceed with their analysis.

3.5. High-Quality Academic Writing by the Author

Journal editors encounter a large volume of manuscripts of varying quality throughout their professional careers. As a result, it is unlikely that a weak or average manuscript will be accepted for publication. Although factors such as publication fees or prior relationships with a journal may sometimes influence outcomes, the present consideration focuses on a scenario in which the author seeks publication based solely on the merit of the work.

There should be no doubt that the manuscript is the product of human authorship. This is particularly relevant for authors who make use of artificial intelligence. Experienced editors and reviewers are generally able to distinguish between AI-generated and human-written content. Attempts to mislead the editorial process through the use of AI ultimately undermine the author's position.

Authors must provide comprehensive evidence demonstrating that the work has been genuinely conducted. This includes substantiation of the research through empirical data, documentation, and, where applicable, visual materials.

Authors must provide comprehensive evidence demonstrating that the work has been genuinely conducted. This includes substantiation of the research through empirical data, documentation, and, where applicable, visual materials.

The study must be based on authentic primary data that can be readily verified. In practice, situations often arise where tables in accompanying Excel files are merely replicated from the manuscript text, indicating the absence of underlying datasets and actual calculations. Such practices suggest that the results are not empirically grounded.

A rigorous study requires the presence of primary data, as well as clearly presented formulas and calculations. The absence of these elements is unacceptable.

Another common issue concerns the use of overly generic terminology. For example, in a study titled “Metaverse technologies in …,” repeatedly referring only to “metaverse technologies” throughout the text, without specifying the exact technologies applied in the research context, reflects a lack of precision. This is often indicative of AI-generated or insufficiently developed content, as it fails to address the specific technological components relevant to the study.

The manuscript may be returned for revision or, in less favorable cases, disregarded entirely, which carries more serious consequences for the author. It is therefore advisable to ensure that the work is properly prepared from the outset.

Primary data must originate from verifiable sources. For example:

1. If the study involves survey research, datasets should include individual-level responses for each participant. These data should be aggregated into a unified dataset, which then serves as the basis for subsequent analysis. Excel files should

contain functional formulas rather than merely copied numerical values.

2. If the analysis is based on company data, the dataset must consist of authentic corporate statistics obtained from official or publicly accessible sources. Again, Excel files should include formulas and calculations, not simply replicated figures.

3. If computations are performed using specialized software, the corresponding data files must be available and documented.

Accordingly, the manuscript must be grounded in verifiable empirical evidence and structured upon reliable primary data.

1. Empirical (real-world) data. The study should be grounded in verifiable data sources, such as statistical datasets, analytical reports, company disclosures, and similar materials. It is also appropriate to refer to real-world systems or platforms where observable processes occur and can be documented (e.g., through screenshots or photographs), enabling subsequent quantitative analysis. The key requirement is that the underlying evidence must be accessible and verifiable by any reader.

Artificial intelligence tools may be effectively used for data discovery; however, all information must be verified against reliable primary sources. Reports and supporting materials should be stored in an accessible repository or provided via direct links.

For each table or figure presenting such data, a source note must be included, for example:

Source: developed by the author based on data from [reference, including year].

All referenced data sources must also be included in the reference list. Preference should be given to the most recent available data (ideally from the current or preceding year).

2. Experimental data.

In addition to real-world data, the study may incorporate data generated through original empirical work, such as large-scale surveys. In such cases, the manuscript should include the questionnaire instrument, as well as supporting materials (e.g., Excel datasets with approximately 1,000 responses), which form the basis for analysis. Additional evidence may include photographs of research processes, images of study sites, or screenshots of applications.

At the same time, visual materials should not be excessive; their inclusion must be methodologically justified rather than decorative.

Survey data can be efficiently collected using tools such as Google Forms. Including screenshots of the questionnaire and providing a link to the instrument (e.g., in the Methods section or an Appendix) helps demonstrate the authenticity of data collection.

If the study proposes an original development (e.g., a proprietary language-learning application or a virtual museum), it is important to specify that this constitutes a prototype or draft developed and tested by the authors. The full-scale implementation (e.g., a functional application or platform) should be positioned as a direction for future research.

3. Original calculations.

At this stage, artificial intelligence tools may be employed to perform advanced analytical or computational tasks. Authors are often limited by their own expertise in data analysis, whereas AI can generate a wide range of calculations based on provided datasets (whether empirical or experimental). However, all results must be critically evaluated for logical consistency and realism, as current AI systems may still produce distorted or inaccurate outputs. The interpretation and presentation of results must be carried out by the author, rather than delegated to AI. The use of AI should enhance the analytical rigor and clarity of

the study, resulting in well-structured and methodologically sound outputs.

4. Unverified sources.

Special caution must be exercised when using AI tools for literature selection. All suggested sources must be independently verified. In some cases, references generated or suggested by AI may not exist or may contain incorrect or mismatched bibliographic information.

In addition, retracted publications (identified by a "retracted" notice) must not be used, despite the fact that such sources are sometimes recommended by AI systems.

5. Additional considerations.

In accordance with the topic of the article, the manuscript should include at least one figure, preferably more. In some cases, a paper may be methodologically strong and enriched with schemes, graphs, and analytical visuals, yet lack direct visualization of the core subject matter. For example, in a study on clarinet performance, an illustrative image of clarinet playing should be included. Similarly, if the topic concerns musical performance in virtual reality, the article should contain visuals that directly correspond to and illustrate the described context.

Example 1:

In journals indexed in Web of Science and Scopus within the fields of education and psychology, the majority of publications (approximately 80–90%) employ quantitative research designs. These typically include experiments, surveys, psychometric testing, and statistical analyses (e.g., regression analysis, factor analysis, structural equation modeling). Such approaches align with international research standards and are highly sought after by academic journals.

Qualitative methods - such as interviews, focus groups, thematic analysis, and case studies - are used less frequently but remain relevant in certain research contexts.

Example 2:

In one study, the authors analyze how digital graphic and animated notations can facilitate the creation of electronic music and support collaboration between musicians and composers. The findings are grounded in original author-developed materials, including draft musical scores and screenshots illustrating the use of specialized software (e.g., Decibel ScorePlayer), thereby providing direct evidence of the creative and analytical processes described in the article.

Example 3:

The study provides a detailed description of specific artificial intelligence and deep learning tools, including corresponding codes and algorithms. It proposes an original framework integrating modular learning tools with multi-level AI functionalities. The research is grounded in an experimental design that implements these technologies in music and aesthetic education, aiming to improve the accuracy of musical emotion recognition.

Example 4:

The article examines how computational methods can contribute to understanding creativity in musical performance. The methodology is based on an experiment involving the recording of a performer playing Mozart's sonatas on a digital piano, followed by subsequent analytical processing. The illustrative materials include musical scores and visual representations of performance trajectories.

Examples of research methods:

1. Collaborative creation method.
2. Ethnographic method.

3. Combination of document analysis and case study methods.

4. Narrative review method.

5. Duoethnographic method.

6. Methods for integrating representative and positional objects.

7. 3D dance scanning methodology.

8. Sparse modeling.

9. Ethnomusicological and ethnochoreological methods, including fieldwork, participant observation, analysis of primary and secondary sources, network analysis, and motion capture techniques.

10. Semi-structured interviews combined with interpretative thematic analysis.

11. Individual testing sessions (e.g., absolute pitch test, verbal working memory test, melodic error detection test).

12. Basic music theory test combined with semi-structured interviews.

13. Analysis of video and audio recordings and interviews, complemented by eye-tracking of participants.

Section 4. Technical Assignment for the Article (TOR, Audit, Checklist)

The primary requirement is a thorough analysis of benchmark (sample) articles. The manuscript should match or exceed the quality of such exemplar publications from leading international journals. It is essential to identify a research problem that is both current and of interest to high-ranking journals, considering both thematic relevance and the potential contribution of the results.

Journal submissions are evaluated in English. The manuscript may initially be prepared in either Russian or English; however, if the author's proficiency in English is sufficiently high, drafting directly in English is preferable. Otherwise, the manuscript should be written in the author's native language and subsequently translated by a qualified professional translator.

The recommended length of the manuscript (including abstract, main text, and references) is approximately 5,000–7,000 words. The article should not take the form of a review paper (i.e., a summary of existing studies). Instead, it must present original research and author-derived findings.

During the writing process, the use of AI-based text generation tools (e.g., ChatGPT, Bing AI) for producing the manuscript text is not permitted. However, AI tools may be used for auxiliary purposes, such as identifying relevant sources, retrieving up-to-date empirical data, performing calculations, or supporting other research-related tasks that do not involve generating the textual content of the article.

Checklist for Article Structure and Content

The following sections are mandatory:

1. Abstract

The abstract should be approximately 250–350 words in length.

The opening sentence should provide a general introduction, justifying the relevance and importance of the research topic. This should be followed by a concise presentation of: (1) the purpose of the study; (2) the methodology employed; (3) the key results obtained; and (4) brief conclusions with an emphasis on the practical implications of the findings.

Importantly, the abstract represents a condensed summary of the central ideas and outcomes of the study; therefore, it is recommended to compose it after completing the full manuscript. The use of abbreviations and references should be avoided in the abstract.

2. Keywords

The recommended number of keywords is 5–7.

Keywords should reflect the principal concepts of the study, representing the core subject matter and facilitating indexing and discoverability of the article. Abbreviations should not be used in the keyword list, and repetition of terms already included in the title should be avoided where possible.

3. Introduction

The recommended length of this section is approximately 500–800 words.

This section should:

- Provide a concise overview of the research topic. It should outline the key problems and challenges, supported by references to international scholarship. Their potential causes and consequences should be discussed, taking into account global experience. Relevant and up-to-date statistical data should also be included. Importantly, the introduction should not begin with a discussion of a specific regional context; rather, it

should first address global trends and issues, and only then proceed to more localized considerations.

- Establish the relevance of the study by identifying gaps or limitations in existing research and positioning the present work accordingly (e.g., by demonstrating how the study addresses unresolved issues or extends prior findings). The novelty of the study - serving as the foundation of the research - must be clearly articulated. At the same time, formulaic expressions commonly found in theses (e.g., "the relevance of the study lies in…", "the novelty of the research is associated with…") should be avoided.

- Avoid tentative formulations such as "this study attempts to examine" or "the authors attempted to investigate." Research objectives are expected to be either achieved or not; the use of such wording is often perceived negatively by reviewers and editors.

- Conclude by explicitly stating the practical significance of the study and its contribution to the advancement of global scientific knowledge.

4. Literature Review

The recommended length of this section is approximately 600 words.

The literature review should be based on the analysis of approximately 10–15 recent and relevant sources on the topic.

This section should:

- Identify general trends in the existing body of research, including how the problem has been addressed or studied in different countries, supported by specific examples from prior studies;

- Highlight inconsistencies or conflicts in theory, methodology, practice, or research findings identified in the reviewed literature;

- Identify gaps and limitations in existing studies.

When presenting the literature review, it is not necessary to include authors' full names, titles of works, or academic

credentials within the main text. Instead, the key idea should be stated concisely, followed by an in-text citation. Impersonal constructions and passive voice are recommended. For example:

Incorrect: Practicing educators I. Petrova and A. Semenova, in their recent work “Inclusive Education,” define an inclusive learning environment as one in which interaction is organized between teachers and specialists providing psychological and pedagogical support to students with disabilities.

Correct: An inclusive learning environment may be defined as one in which interaction is organized between teachers and specialists providing psychological and pedagogical support to students with disabilities (Petrova & Semenova, 2023).

5. Problem Statement

The recommended length of this section is approximately 200 words.

This section should:

- Provide a clear justification for the motivation underlying the study (e.g., the development of a new methodology, the generation of new experimental data, the optimization of a process, or the resolution of a specific problem);
- Clearly define the aim of the study;
- Specify the research objectives.

6. Methods and Materials

This section should:

- Describe in detail the specific methods and techniques applied in the study;
- Define the objects and subjects of the research under analysis.

The primary purpose of this section is to provide sufficient detail to ensure the reproducibility of the study, enabling other researchers in the field to accurately replicate the research process. It is necessary to specify the methodological

frameworks underpinning the study, with appropriate references to relevant scholarly works.

General scientific methods (e.g., comparison, synthesis, literature analysis) should not be listed; instead, the focus should be on specific methodological details. This includes the criteria used for analysis, the time period examined, the sources of data and materials, and the software tools employed for data processing and interpretation.

If the study involves a survey or experimental design, the sample should be described in detail, including the number of participants, their demographic characteristics (e.g., age), sampling criteria, and the potential margin of statistical error. The rationale for selecting the particular sample should also be provided.

The section must conclude with a discussion of the study's limitations, including any constraints encountered, challenges faced during the research process, and justification of the sample's relevance. Ethical considerations should also be addressed, including data usage rights and informed consent obtained from participants.

The Methods section should be structured into thematic subsections, such as Methodological Framework, Theoretical Framework (if applicable), Research Design, Sample (if applicable), Data Analysis, Statistical Processing, Ethical Considerations, and Methodological Limitations, as appropriate to the specific study.

7. Results

This is the central section of the article and should:

- Clearly demonstrate the novelty of the study, which serves as the primary motivation for its conduct;
- Present the author's original observations and describe the obtained results;
- Ensure that the reported results are fully aligned with the stated aims and research objectives;

- Describe the specific ideas and concepts applied within the study, with a focus on concrete implementation.

The Results section should explicitly articulate the innovative contribution of the study, avoiding the use of vague or generalized statements, similar to the requirements outlined for the Introduction. References to external sources should be minimized, with emphasis placed on the author's own findings and analytical outcomes.

A strict correspondence must be maintained between the research aims, the presented results, and the conclusions (i.e., each objective should be directly reflected in the results and subsequently addressed in the conclusions). The section should provide a clear and detailed account of the concepts and approaches applied, grounded in specific evidence.

The primary requirement for this section is clarity, logical consistency, and completeness in presenting all findings. To enhance interpretability, results should be supported by visual materials, including tables, figures, and formulas. Any numerical data presented in the text must be accompanied by appropriate tables or graphical representations.

It is essential that the article includes visual elements such as figures, tables, graphs, diagrams, or flowcharts (typically 7–8 items on average; more may be included in technical or economic studies). The titles of all visual elements must accurately reflect their content. Each figure, table, or diagram must be explicitly referenced in the main text (e.g., "the data are presented in Figure 1" or "see Figure 2").

For all figures and tables, the source must be clearly indicated. If the data are entirely original, the source should be cited as: Source: author's own elaboration. If the figure has been created by the authors using quantitative data from an external source, the citation should be formatted as: Source: developed by the authors based on data from [reference].

Direct copying of figures from other sources and inserting them into the manuscript is not permitted. All tables, graphs, and

diagrams included in the article must be editable (i.e., not inserted as static images). If visual materials (e.g., charts or graphs) are constructed by the authors, the underlying datasets and calculations must be provided in a reproducible format (e.g., Excel) alongside the manuscript.

8. Discussion

The recommended length of this section is approximately 600–800 words.

This section should:

- Compare the findings of the present study with those reported in existing literature;
- Identify similarities and/or differences between the results;
- Critically evaluate prior findings by indicating agreement with some results and disagreement with others, supported by evidence from the current study;
- Provide a synthesis and overall assessment of the results obtained;
- Identify the theoretical or scientific framework through which the findings can be interpreted;
- Assess the reliability and validity of the results;
- Where appropriate, examine international practices related to the research topic, including similar challenges in other countries, approaches to addressing them, and the potential for adapting such experience;
- Situate the study's findings within the broader structure of existing scientific knowledge.

After generating results, it is essential to compare them with analogous studies to identify points of convergence and divergence. Agreement or disagreement with prior findings should be substantiated by the empirical evidence of the present research, with a clear comparison of similarities and differences.

Where relevant, the section may also include a comparative analysis of practices across countries, preferably representing different levels or models of economic development.

Although some journals combine the Results and Discussion sections, in this study, they should be presented as two distinct sections.

9. Conclusions

The recommended length of this section is approximately 350 words.

The Conclusions should:

Provide a concise summary of the key findings of the study;

Describe the scientific and practical significance of the research;

Identify potential areas for the application of the findings;

Outline directions for future research.

The final two elements may be presented as a separate subsection within the Conclusions, titled **"Practical Implications and Future Research."**

10. References

- The reference list should include approximately 30–60 sources, the majority of which should be international publications from the period 2016–2026;

- All sources cited in the text must be included in the reference list, and all references listed must be cited within the text.

Additional resources for search and citation:

Relevant materials can be efficiently located using Google Scholar - https://scholar.google.com/

If full-text access is unavailable, the article link or DOI may be entered into platforms such as: https://www.sci-hub.st/ to retrieve the full text (subject to legal and institutional access considerations).

For generating citations, tools such as the "Cite" function in Google Scholar or reference management platforms (e.g., https://zbib.org may be used. By entering a DOI or URL, these tools can generate both in-text citations and full reference entries in the required format.

Section 5. Revision of the Manuscript

5.1. Manuscript Revisions and Responses to Reviewers during the Revision Process

Manuscript revision is no less important than the initial writing of the article. The level of revision complexity depends on the comments from reviewers and the journal editor.

The **primary objective is** to revise the manuscript thoroughly and in accordance with all received comments.

No comments should be omitted or ignored, as editors and reviewers will systematically verify all revisions; failure to address them adequately may result in rejection due to insufficient or negligent revision.

The quality of revisions must be high. For example, if reviewers request the inclusion of recent sources, the revised manuscript should incorporate up-to-date references, particularly from the last 1–3 years. If improvements to the Results section are required, this section should be expanded comprehensively in line with both the journal's published articles and the general requirements outlined in the technical assignment (TOR).

If certain reviewer comments are unclear or request clarification of aspects that the author is expected to understand, the author should independently develop a reasoned response. This may involve consulting related studies and adapting relevant approaches. The key requirement is that any additions or clarifications must be logically consistent, aligned with the overall conceptual framework of the article, and not contradict either the existing content or broader scholarly standards.

If the author has reasonable grounds to believe that a reviewer's comment is not entirely justified, it is sufficient to

provide a polite and well-reasoned response explaining the disagreement. Such a response should be supported by references to established theories and relevant scholarly literature.

If, during the revision process, the author identifies typographical, technical, or substantive errors in the manuscript that were not noted by the reviewer, these should be corrected without hesitation. It is not necessary to mention such corrections in the response to reviewers; however, the revised text should be clearly highlighted within the manuscript.

All revised sections of the manuscript must be clearly indicated (e.g., by using a different color). Deleted text may be removed without highlighting, except for references, which should be marked accordingly (e.g., struck through).

Revisions should be conducted in the same language as the manuscript: either in Russian (if the manuscript will subsequently be translated) or directly in English.

Revisions should be made in the English version of the manuscript. Importantly, the English version represents the editor-approved file; therefore, formatting must not be altered. Authors should not change fonts or layout, nor remove page or line numbering (if present).

Reviewers typically provide their comments in a separate document (e.g., “Reviewer Comments”). However, in some cases, comments may also be inserted directly into the manuscript file.

As a general rule, responses to reviewers should be prepared in the “Reviewer Comments” document. Each comment must be addressed individually with a detailed and substantive response, rather than brief statements such as “Done” or “Corrected.”

If comments are provided within the manuscript using the “Comment” function, responses should be inserted directly in the same file using the “Reply to Comment” function.

Reviewers may also highlight the strengths of the manuscript. In such cases, it is sufficient to acknowledge these remarks with a brief expression of appreciation (e.g., “We appreciate your positive evaluation of this aspect of the manuscript” or “Thank you for your encouraging comments”).

Responses to reviewers should be prepared in the same language as the manuscript: either in Russian (if the manuscript will subsequently be translated) or directly in English.

It is considered good practice to acknowledge the reviewers’ efforts and their contribution to improving the manuscript. Therefore, it is recommended to include brief expressions of appreciation at the beginning or end of the response document.

All responses to reviewers should be clearly distinguished (e.g., by using a different color).

All reviewer comments must be addressed comprehensively. This is a standard requirement in the academic publication process: reviewers provide comments, and the author is expected to revise the manuscript accordingly, including comments from the journal editor.

Each reviewer's comment must be accompanied by a detailed and structured response. The response should explicitly indicate how the comment has been addressed and include a relevant excerpt of the revised text (presented in quotation marks) demonstrating the implemented change. In the manuscript itself, all revised sections should be clearly highlighted (e.g., using a different color).

No comment should be ignored. All reviewers must be addressed in a polite, professional, and thorough manner.

With regard to reviewer comments, it is important to recognize that reviewers are specialists in their respective fields, appointed by the journal editor to evaluate the manuscript. While their level of expertise may occasionally be subject to doubt, their assessments form the basis upon which the editor makes the final decision. Therefore, the primary objective is to address and satisfy each reviewer to the greatest extent possible in order to facilitate acceptance of the manuscript.

Authors should refrain from making dismissive or critical statements about reviewer comments (e.g., describing them as vague or incorrect). Instead, all comments should be addressed constructively, provided that they do not directly contradict one another. In cases of conflicting recommendations (e.g., one reviewer suggests reducing the mathematical component, while another recommends expanding it), the author may adopt the position that appears more methodologically justified. The response to the other reviewer should remain polite and reasoned, explaining the decision (e.g., by noting the alternative recommendation, referencing similar published studies, and aligning the choice with journal guidelines or disciplinary standards).

For comments such as “improve the quality of figures and tables,” this should be interpreted as a requirement to ensure that all visual elements are clear, legible, and meet technical standards (e.g., appropriate resolution such as 300 dpi and acceptable formats such as JPG or TIFF), with all labels and annotations clearly readable.

A comment such as “include references to works not currently used in the study” is a common reviewer request and should be addressed accordingly. The cited sources should be incorporated both into the main text (with appropriate analysis or discussion) and into the reference list.

The revision process involves engagement with editors and reviewers from diverse international contexts, each of whom may have distinct perspectives and expectations. These must be taken into account in order to increase the likelihood of manuscript acceptance.

Academic journals maintain highly competitive selection processes and publish only manuscripts that meet rigorous standards. Reviewers evaluate completed submissions based on their expertise and the specific requirements of the journal; therefore, authors should not expect preliminary guidance but rather respond thoroughly to feedback provided during the review process.

Issues related to differing interpretations and perceptions of reviewer comments.

A lack of willingness on the part of the author to devote sufficient time to the revision process, resulting in correspondingly suboptimal outcomes.

Reasons for Returning a Manuscript for Further Revision:

1. The fact that all reviewer comments are included again in the revised files does not mean that each comment must be addressed repeatedly from the beginning. Particular attention should be paid only to those points for which additional notes or remarks have been provided. All other comments should remain in the file, as the full review history must be preserved when resubmitting the manuscript to the journal.

2. All comments initially provided are observations made by the reviewers and editors of the specific journal. It is therefore necessary to verify whether each of them has been addressed fully and appropriately. Experience shows that reviewers respond positively only to complete and well-substantiated replies - responses that leave no room for further questions or doubts. Accordingly, if any comment has been addressed only partially, if the response is insufficiently detailed, or if the

corresponding revision has not been incorporated into the manuscript, the author must improve these aspects. This is not optional but essential. Many journals reject manuscripts without the possibility of further revision if the editor or reviewers find the responses incomplete.

3. Every manuscript passes through several stages of evaluation. The initial stage typically involves a general assessment based on common requirements for scientific articles, including both structural and content-related standards. However, each journal also has its own specific requirements. At this stage, much depends on how thoroughly the author revises the manuscript and how carefully and respectfully the reviewer and editor comments are addressed. Authors are, of course, entitled to disagree with particular comments, but in such cases their position must be justified in a clear, reasoned, and evidence-based manner.

4. The revision process is also subject to human factors, and reviewer or editor comments may occasionally be formulated in a vague or non-specific manner. It is not possible to infer the exact intent behind such comments, as only the reviewer or editor fully understands their meaning. Contacting the journal for clarification on one or several comments is generally not advisable, as editorial correspondence may take several weeks, thereby significantly delaying the revision process within a limited timeframe.

In cases where a comment appears ambiguous, the author should nonetheless revise the manuscript to the best of their understanding and provide a response indicating that the comment may not have been fully interpreted, but that all reasonable efforts have been made to address it. If the reviewer intended a different meaning, they may provide further clarification in subsequent rounds of review.

5. More specifically, when a journal issues a decision of “revise and resubmit,” it indicates that the manuscript is not acceptable in its current form but possesses sufficient merit to

warrant reconsideration, provided that substantial revisions are made. Such decisions require significant modifications to the manuscript. Minor or "cosmetic" changes (e.g., altering the title or removing a few paragraphs) are insufficient to meet the expectations of the editor or to justify resubmission for further review. When the reviewers explicitly request "major revisions" or "major rewriting," this should be interpreted as a requirement for comprehensive and substantive revision. All such comments must be addressed in full. For example, if a recommendation to reduce content applies only to the Introduction, while the Methods section requires expansion, both instructions must be followed accordingly.

6. Even if a reviewer or editor is likely familiar with a specific term, a request for clarification must be addressed explicitly and directly, without referring the reader to external sources. An English-language editor will not be expected to translate or consult materials in another language; therefore, all necessary explanations must be provided within the response. If the original manuscript already contains relevant information addressing the comment, this should be clearly indicated, with precise references to page or line numbers (where applicable).

Examples of Responses to Reviewers

Manuscripts typically require substantial revision before they are ready for publication in a journal.

For example, a reviewer may state:

"The manuscript contains some interesting elements and appears to be based on a reasonably robust quantitative methodology; however, the discussion is not sufficiently convincing. I am also concerned about several key aspects. The author argues that higher GDP and linguistic similarity are the main drivers of migration, which does not substantially challenge or extend existing knowledge. Therefore, while the study shows some potential, it requires significant revisions

before it can be considered for publication. An annotated version of the manuscript with detailed comments is attached."

1. Cultural aspects of migration are extensively discussed in sociological literature; therefore, this claim cannot be fully substantiated.

Response: In accordance with the reviewer's comment, the statement concerning "the influence of the culture of migrants" has been substantiated through references to recent scholarly and institutional sources, including Barbashin (2025) and the United Nations report *Culture in the Localization of the SDGs: An Analysis of Voluntary Local Reviews (2025*). Accordingly, the Introduction section has been revised to incorporate a new argument emphasizing the role of sociological literature in explaining the cultural dimension of migration.

Specifically, it is now stated that migration connects communities and states not only through economic and social relations, forming an integrated socio-economic space, but also through cultural interactions. Contemporary sociological perspectives recognize cultural attractiveness as a significant factor influencing migration flows. In this context, migration is conceptualized as a function of the relative attractiveness of countries of origin and destination: cultural factors may act as push factors in emigration contexts and as pull factors in immigration contexts. Furthermore, migrants' inherent need to preserve cultural traditions may, in some cases, hinder acculturation processes, thereby making social adaptation a critical issue at both individual and institutional levels (Barbashin, 2025; United Nations, 2025). The findings of Barbashin (2025) further highlight the necessity of an interdisciplinary approach to migration studies, with sociology playing a central integrative role.

2. In discussing the "nature of migration processes," the authors emphasize the "natural needs" of migrants, thereby reinforcing an objectivist conceptual framework that may be insufficiently informative for cultural analysis.

Response: In response to this comment, the Introduction has been expanded to include a more nuanced perspective on the role of migration in both material and immaterial dimensions of culture. The revised text emphasizes that migration interacts with culture not only through spatial and structural factors but also through social and cultural capital.

The manuscript now highlights the growing importance of cultural capital in processes of social integration and cohesion, as well as in human capital development. It also addresses issues related to cultural inequality and access, including the role of public policy in ensuring inclusivity in cultural participation. Particular attention is given to the expansion of cultural services, the activation of public spaces through cultural expression, and the democratization of culture via the decentralization of cultural infrastructure (United Nations, 2025).

3. The objectives of the article are not clearly formulated in the Introduction. The "problem of migration" represents a complex set of issues that can be examined from multiple perspectives; therefore, a more precise focus is required.

Response: In accordance with this comment, the Introduction section has been substantially revised to include a clearly articulated research objective, as well as an overview of key issues relevant to European migration practices in 2025.

Specifically, experts from the International Center for Migration Policy Development (ICMPD) identify several critical migration-related challenges that require attention from European governments in the near term. These include the increase in irregular migration driven by growing instability in countries of origin, exacerbated by the economic consequences of the COVID-19 pandemic; migration pressures resulting from political instability and escalating humanitarian crises; the ongoing reform of the European asylum system, particularly with regard to the fair distribution of responsibility and solidarity among member states; and the development of legal migration pathways. Based on the most recent data on

international migration, the present study is aimed at examining the economic and cultural determinants of migration in Europe within the context of contemporary socio-political conditions.

4. The discussion is clearer; however, it would be advisable to move this issue closer to the beginning of the manuscript and to elaborate on the social significance of the study. Why is it important not only to examine migration in general, but also to precisely identify its cultural and economic determinants

Response: Thank you for this comment. The justification of the importance of studying migration - specifically, the identification and measurement of its cultural and economic determinants - has been incorporated into the revised Introduction.

The proposed interpretation of migration practices enables the identification of macro-social patterns and trends, which necessitates a mixed-methods approach integrating both qualitative and quantitative data sources.

5. The analysis is of interest; however, it remains largely descriptive, resembling a report. The manuscript should place greater emphasis on what these statistical data reveal about macro-social patterns and trends.

Response: The Results section has been fully revised and now focuses on the interpretation of statistical data within the framework of macro-social patterns and trends. The key findings of the revised Results section are as follows:

- Migration contributes to the enhancement of human capital quality and the maximization of the contribution of individuals' competencies and knowledge to the socio-economic development of a country;
- A significant driving force behind migration is the violation of human rights within the cultural framework of national policies governing migrant societies. In this context,

culture operates at multiple policy levels and encompasses systems of cultural values, legal culture, education, and lifestyle;

- The assessment of migration from both economic and cultural perspectives reveals substantial differences between countries with varying levels of human development, particularly in terms of human mobility and the cultural values inherent to individuals based on their place of birth and residence.

6. Were any additional potential factors influencing migration decisions considered in the statistical analysis? Furthermore, to achieve a more comprehensive understanding beyond purely numerical analysis, it is recommended to focus on one or two specific cases and provide historical context alongside detailed information on current social conditions.

Response:

(a) The Results section has been fully revised. In the updated version, the statistical analysis incorporates additional variables, including: the percentage of migrants across 48 European countries; the proportional distribution of migration drivers, encompassing both economic indicators (e.g., percentage of labor migration) and cultural factors (e.g., legal migration pathways, including family reunification rates, residence permits issued, asylum grants, and access to education); as well as composite rankings based on three indices: The Henley Passport Index, The Fragile States Index, and the Human Development Index.

(b) The Discussion section has been expanded to include two case studies that provide historical context and detailed insights into current social conditions:

- L*, M., V*, A. (2025). * migration *. *, volume *, pp. *. …

- T*, A., P*, C., Л*, B. (2025) …

7. In general, both differences in GDP and linguistic similarity between countries have long been documented as key factors influencing migration. Therefore, the study would benefit from highlighting more atypical or novel aspects.

Response: The manuscript has been substantially revised, resulting in a new version that no longer emphasizes traditionally established determinants of migration, such as GDP differences and linguistic similarity. Instead, the revised study focuses on factors that are increasingly significant in contemporary migration processes, particularly the foundations of state cultural policy, including cultural institutions, legal culture, education systems, and lifestyle dimensions.

8. Introduction and Literature Review. The statement "However, the educational process cannot simply be transferred to an online environment. Digital education requires changes in materials and technologies, pedagogical and methodological approaches, perception, etc." should specify in greater detail what kinds of changes are required for the transition to the digital environment.

Response: This comment was considered highly significant and was addressed with particular attention during the revision process. The manuscript has been expanded to include additional data on contemporary technologies required for the digital transformation of education. Furthermore, the methods and technologies necessary to enhance educational quality and support interactive learning have been elaborated in greater detail.

9. Methodology. The "Methods and Materials" section should provide a more detailed explanation of how the study was conducted, including the rationale for the selection of the student sample, the factors influencing the choice of research methods, and the manner in which ethical considerations were addressed (particularly in cases involving minor participants).

Response: In accordance with these recommendations, the methodology section has been expanded to provide a more detailed description of the research design, data collection procedures, analytical methods, and ethical considerations.

10. The “Problem Statement” section should present the research objectives more explicitly. Structuring them into clearly defined points may improve clarity.

Response: The “Problem Statement” section has been revised and clarified through the explicit formulation of the study’s aims and research objectives.

11. Discussion. It is recommended to move the comparison of the study’s results with those of other researchers to the Discussion section. This would improve the overall coherence of the manuscript. The Results section should focus exclusively on data obtained in the course of the study.

Response: Thank you for this comment. The content relevant to the Discussion section has been relocated from the Results section. The comparison of the obtained findings with those reported in international studies is indeed more appropriate for inclusion in the Discussion.

12. How many students participated in the study, and from which universities were they recruited?

Response: The methodology section has been expanded to provide a more detailed description of the student sample, including the number of participants and the universities from which they were recruited.

13. Which subject areas were represented by the participating educators?

Response: In accordance with this recommendation, revisions have been made to the description of the educator sample. The manuscript now provides a more detailed account

of the participants' areas of specialization, including the number of respondents within each field.

14. In addition to the analysis of subjective assessments and statistical data, the study should evaluate the practical effectiveness of implementation and compare the performance of traditional and online educational programs. This would enhance the overall relevance and applicability of the research for educators, enabling them to apply the findings in the development of their own instructional programs. Without such analysis, the study may lose part of its practical value.

Response: An additional stage of the research has been incorporated, focusing on the evaluation of practical online learning, including changes in educational quality and the effectiveness of instructional delivery.

15. The Results section should rely on more recent data than those from 2024. Given the rapid evolution of digital technologies, particularly in the context of artificial intelligence and changes in educational programs, it is essential to ensure that the data are up to date and, where possible, comparable with data from 2025–2026. The relevance of the data should be a priority; therefore, a revision is recommended.

Response: The primary data sources and underlying studies have been reviewed and updated, with a focus on more recent evidence from the period 2020–2026.

16. In addition, a more detailed description of the sample should be provided, including clarification of the term "Generation Z" (i.e., what it represents and which population it encompasses).

Response: The manuscript has been revised to include a more detailed explanation of the concept of "Generation Z," with particular attention to its defining characteristics and implications for learning processes.

17. A more detailed elaboration of these aspects would allow for a clearer understanding of the study's focus, results, and implications.

Response: The manuscript has been expanded to provide a more comprehensive description of the research focus, the factors characterizing each stage of the study, as well as the results and their implications.

5.2. Key Considerations and Common Errors in the Revision Process

The revision of a manuscript for journal submission should begin with a critical evaluation of its overall quality by the author or co-authors.

To revise a manuscript effectively, authors must first develop a clear understanding of its content and scientific value. This involves assessing whether the data presented are accurate, reliable, complete, and methodologically sound. Authors working within the relevant field are typically capable of determining whether the study meets these criteria. However, many authors - even those with prior international publication experience - lack a clear understanding of journal expectations. To address this, it is essential to analyze recently published articles in the same or closely related fields. By examining such benchmark studies, authors can evaluate both the structural quality of their manuscript and the relevance of the research topic within the current academic discourse.

The next stage involves revising the manuscript based on insights gained from these exemplar articles. Authors must have a clear vision of the desired final outcome. Each contributor should understand what the completed manuscript should look like in terms of quality, structure, and contribution.

If authors lack this clarity, revisions may remain superficial. In practice, some manuscripts undergo multiple rounds of revision with minimal substantive improvement, as changes are limited to isolated additions rather than comprehensive restructuring. As a result, the manuscript may still fail to meet publication standards. Although authors may perceive that effort has been invested, such revisions often do not introduce meaningful improvements. This can lead to repeated submissions and subsequent rejections over an extended period. In such cases, the underlying issue is typically one of two: either the author does not have a clear understanding of the expected standard and structure (which can be addressed by analyzing high-quality published studies), or the author is not prepared to undertake the level of effort required to meet journal expectations.

These considerations also determine the requirements for citation practices and the universality of the manuscript. One of the most common and critical shortcomings in academic articles is the improper use of citations. This typically manifests in the presentation of factual statements that are not supported by references.

For example, authors may report specific data (e.g., a percentage decrease in disease incidence over a defined period) without indicating the source of such information. Similarly, statements asserting the “high relevance” of a study represent vague generalizations and should be avoided. In international academic writing, generalized or declarative statements are not valued; instead, emphasis is placed on precise, evidence-based claims.

Rather than asserting that a topic is relevant, authors are expected to demonstrate its relevance through references to prior research. By citing existing studies and situating the work within an established body of literature, the significance of the research becomes evident without the need for explicit claims.

Excessive use of generic or repetitive statements (e.g., claims regarding the “importance” or “value” of the study without substantiation) should be avoided, as such content does not contribute to the scientific quality of the manuscript and often serves only to increase its length without adding meaningful substance. With regard to article length, journals typically impose upper limits rather than strict minimum requirements. While many manuscripts naturally exceed 3,000 words due to the complexity of academic research, the emphasis should not be on length but on content quality. In some disciplines, such as mathematics, shorter articles may be entirely appropriate if they are dense with analytical or formal content. Conversely, most journals are unlikely to accept manuscripts exceeding approximately 8,000 words, making excessive length undesirable.

Therefore, manuscripts should prioritize conciseness and clarity. Redundant or non-informative content should be eliminated, and all claims should be supported by appropriate references. For instance, if an article includes 25 references in the Introduction, these should not be clustered into a single sentence. Instead, each key idea should be presented in one or two sentences, followed by two or three supporting references. Statements such as “this issue has been studied by the following foreign scholars…” do not constitute an adequate literature review and are considered inappropriate. Instead, each cited author should be linked to a specific study, with a brief explanation of its contribution. This approach allows the author to construct a coherent scholarly context, establishing a foundation of existing knowledge upon which the present research is built.

Another critical deficiency commonly observed in academic manuscripts is the absence of a well-developed Discussion section. This section fundamentally relies on engagement with the existing literature. It requires the author to identify relevant studies and systematically relate their findings

to those presented in the current work through comparison and interpretation.

For example, if the study reports that the yield of certain chemical fractions is 15%, this result should be contextualized by referencing comparable findings in prior research (e.g., "which is consistent with the yields reported in previous studies under similar reaction conditions"). Even if the specific materials or parameters differ (e.g., alternative catalysts), the comparison remains valid when the underlying process is analogous.

Thus, each result presented in the manuscript should, where possible, be supported or contextualized by reference to similar studies. This approach strengthens the scientific validity of the research, as it demonstrates that the findings are consistent with, or meaningfully extend, the existing body of knowledge. It also signals to the reader that the study is methodologically sound and appropriately situated within the scholarly discourse of the field.

A fundamental requirement of any academic article is that it aligns with current developments in the field. If the research topic itself lacks strong novelty or timeliness, its relevance can, to some extent, be reinforced through engagement with up-to-date and pertinent literature.

A second common issue related to literature is the lack of universality in many manuscripts, particularly those focused on narrowly defined regional contexts. For instance, a title such as "Key Trends in the Development of Civil Society Institutions in a Small Country" reflects a limited scope and may reduce the broader applicability and international relevance of the study.

The study should be framed within an international context. On the basis of international experience, a more specific and analytically relevant research focus should be developed.

For example, civil society represents a broadly studied and conceptually rich area, with a substantial body of existing literature. In contrast, a narrowly defined focus on a single

"small country" is typically of limited interest if it is treated in isolation. In such cases, the country should be positioned as a case study rather than the sole object of analysis. The research should aim to provide a generalized understanding of civil society development, illustrated through the example of the selected country.

This may also require reconsideration of the article title. Alternatively, the scope can be broadened within the abstract by explicitly stating that the study examines the development of civil society across multiple countries, using the selected case as an illustrative example. Such an approach significantly expands the relevance and applicability of the research. However, it also necessitates comparative analysis with other countries included in the study.

It is essential to situate the research within a broader conceptual or analytical framework that introduces novelty. This positioning enables submission to journals that address the development of social institutions and broader social systems, thereby increasing the range of suitable publication venues.

Furthermore, comparative analysis across neighboring or similar countries allows for the identification of shared challenges, highlighting the universal nature of issues related to the development of social institutions within a given region.

A methodological framework, as well as a clearly articulated idea or conceptual approach with potential for practical application, should be proposed. In order to ensure proper conceptualization, it is essential to demonstrate that the proposed methodology is transferable to other countries. The scope of applicability should be defined by the parameters established in the study. For instance, if the research is framed within the post-Soviet context, the methodology should be applicable to post-Soviet states; if it is defined within the context of Central Asia, it should extend to other countries in that region. In this way, a set of universal characteristics can be identified that are common to these countries. By applying these

characteristics to a specific case (e.g., a “small country”), the study moves from a particular case to broader generalizations.

An alternative and equally robust approach is to situate the analysis within the broader category of developing countries. Developing countries are geographically diverse, encompassing regions such as Africa, Asia, and Latin America. A country characterized by a transitional regime - whether in economic or social terms - can be compared with other developing countries that have undergone similar transformations or structural challenges. Such comparative analysis enables the identification of shared developmental patterns and trajectories. Furthermore, the study may incorporate comparisons with countries that have successfully progressed beyond transitional stages. For example, countries such as South Korea, which have experienced comparable phases in the development of civil society and have subsequently achieved a high level of institutional maturity, can serve as relevant benchmarks. This allows the researcher to identify specific mechanisms, policies, or institutional practices that may be adapted and implemented in the focal country. If these measures prove effective within the selected case, they may subsequently be extrapolated and applied to other countries within the same regional or developmental context.

Authors are encouraged to establish clear connections between their research and topics of current relevance. The more actual and timely the subject matter, the higher the likelihood of successful publication. For example, an analysis focused narrowly on the foreign policy concept of a single country may have limited appeal. In contrast, studies addressing the foreign policy of major global actors, such as the United States, China, or the European Union, tend to attract broader scholarly interest due to their global significance. However, even research centered on less prominent countries can be made relevant by situating it within a broader, more actual context. For instance, a study of the foreign policy of Azerbaijan may gain relevance if it is framed within regional security dynamics, such as its

strategic role in Central Asia or its proximity to Afghanistan. By linking the analysis to pressing global challenges - such as regional security, transnational threats, or geopolitical stability - the research acquires greater significance and applicability.

Accordingly, authors should identify and emphasize those dimensions of their topic that align with contemporary global or regional priorities. This strategic positioning enhances the perceived value of the study, making it more attractive to academic journals. In essence, even a narrowly defined topic can be reframed to highlight its broader implications, thereby increasing its visibility and its chances of publication.

Effective positioning of the manuscript. The author's task is to highlight the strengths of the study, particularly when the manuscript is substantively sound. The literature review plays a pivotal role in this process. A well-structured and analytically grounded review can substantially enhance the overall quality of the article by foregrounding its strongest contributions while minimizing less robust elements through careful framing. In practice, this can transform an otherwise moderate manuscript into a compelling scholarly contribution. It should also be noted that reviewer engagement varies. Some reviewers provide detailed and rigorous evaluations, while others may rely on more formal indicators (e.g., the scope and recency of the literature). Situations may arise where reviewer feedback is inconsistent - for example, when several reviews are positive and one is exceptionally critical. In such cases, it is important to maintain a professional and reasoned response strategy. If there are grounds to question the balance or fairness of the review process, this may be communicated to the editorial team in a measured and evidence-based manner. Editorial decisions are often influenced not only by the content of revisions but also by the quality of communication between authors and editors. Clear, respectful, and well-argued responses to reviewer comments can positively affect the outcome of the review process. Therefore, even highly critical feedback should be treated as an opportunity

for constructive revision. Engaging thoughtfully with all comments remains an essential component of successful publication.

The rationale underlying the alignment of interests between the editor and the author was articulated in the cover letter. Specifically, it was argued that assigning four reviewers to a single manuscript constitutes an excessive number, given that the standard practice in most academic journals involves two to three reviewers. This position was supported by the practical consideration that accommodating divergent comments from four independent reviewers is inherently challenging.

When multiple reviewers evaluate a manuscript, each may present distinct and, at times, contradictory perspectives. For instance, one reviewer may recommend reducing the number of references, whereas another may criticize the manuscript for insufficient engagement with the literature. In such situations, the author faces an inherent methodological and editorial dilemma, as it becomes difficult to reconcile mutually exclusive recommendations. In the response to the editor, it was emphasized that all feasible revisions had been implemented, while explicitly acknowledging those comments that could not be addressed due to internal contradictions. It was further noted that, among the four reviewers, three provided generally constructive and moderately critical feedback, whereas one reviewer submitted an extensive and strongly negative evaluation. Based on this imbalance, it was cautiously suggested that a potential conflict of interest might be present, particularly if the reviewer was closely affiliated with the research domain and thus not entirely impartial. The editor ultimately accepted this reasoning and, during the subsequent round of peer review, reduced the number of reviewers. This outcome illustrates that editorial decisions are influenced not only by the substantive revisions made to the manuscript but also by the clarity, consistency, and persuasiveness of the author's communication. A well-structured and reasoned response, combined with a clear

understanding of one's own position, can play a crucial role in the peer review process.

Figures. The quality of figures must meet high publication standards. Journals frequently impose strict requirements at the production stage, as low-quality or improperly embedded images may create technical difficulties during typesetting. In particular, figures inserted directly into word-processing files (e.g., Microsoft Word) may lose resolution or become corrupted, making it difficult to recover the original quality. This issue is especially critical for technical manuscripts that include multiple diagrams, illustrations, or graphical elements. Accordingly, all figures should be prepared in high resolution and, where required, submitted as separate files in appropriate formats.

Equations. Mathematical expressions should be formatted using an equation editor rather than inserted as images. This can be verified directly in the document: if selecting a formula reveals it as an editable object (e.g., created via the built-in equation editor), it is acceptable. However, if the formula behaves as an image (i.e., opens image-formatting tools when selected), it must be reformatted. In such cases, all equations should be recreated using the equation editor to ensure proper rendering, consistency, and compatibility with journal production standards.

Tables. Tables must be created using the native tools of word-processing software (e.g., Microsoft Word) and should not be inserted as images. All tabular elements must remain fully editable. More broadly, any content containing textual or numerical data should be provided in an editable format. Adhering to this requirement significantly facilitates subsequent stages of editing and production, thereby reducing the time and effort required for manuscript preparation.

Abstract and Conclusions. Particular attention should be devoted to the abstract and the conclusions, as these are critical components of the manuscript. The abstract should typically range between 150 and 250 words and must be concise,

informative, and clearly structured. It serves as the primary entry point for readers and reviewers, thereby shaping the initial evaluation of the article. Similarly, the conclusions should succinctly synthesize the main findings and contributions of the study, reinforcing its significance and overall coherence.

Conclusions. The conclusions section should present clearly structured and systematized findings. It must not consist of loosely stated observations (e.g., “we found that…”), but rather provide a concise synthesis of the most significant results of the study. The purpose of this section is to summarize the core contributions of the article in a precise and coherent manner. Statements should be factual, avoiding generalizations, redundancy, or declarative phrases regarding the “importance” or “relevance” of the research. Academic writing should prioritize evidence-based content. A shorter manuscript grounded in clear, well-supported findings is substantially more valuable than a longer text containing excessive descriptive or non-essential material. In high-impact publications, it is not uncommon for the introduction to be relatively brief (e.g., one to one and a half pages) while incorporating a substantial number of relevant references. This reflects a deliberate and focused writing strategy, where each statement is supported by appropriate citations and contributes directly to the research objective. A critical requirement is the relevance and accuracy of all cited sources. References must be placed appropriately and directly support the statements to which they are attached. Arbitrary or misplaced citations undermine the credibility of the manuscript. Reviewers frequently verify references, and any inconsistency may raise concerns regarding the rigor of the study. Even minor inconsistencies can lead reviewers to scrutinize the manuscript more critically, increasing the likelihood of identifying additional issues. Therefore, maintaining internal consistency and precise alignment between claims and supporting sources is essential for a successful publication outcome.

Section 6. Formatting the Manuscript in Accordance with Journal Requirements

6.1. General Principles of Manuscript Formatting for Target Journals

The optimal reference point for formatting is a recently published article from the target journal, preferably from its latest issue.

Author details must be verified with particular care. In most cases, it is not possible to make corrections after submission; therefore, inaccuracies in author information may persist into the final publication. Author data should be checked both at the stage of initial entry and again after completing the manuscript formatting.

If required author information is missing, it should be requested directly from the authors. It is not appropriate to infer, search for, or fabricate such data independently. If any information appears questionable (e.g., inconsistencies in institutional affiliations or author names), it should be carefully verified.

The accuracy of the journal title must also be confirmed prior to submission. Similar journal titles may lead to submission to an incorrect journal, which may not be indexed in the intended database. In such cases, withdrawal of the manuscript may not be possible. For example, confusion may arise between journals such as “Journal of Business and Economic Management” and “Journal of Business Economics and Management.”

Additionally, authors should ensure that the correct journal title is included in the cover letter template. Failure to do so may signal a lack of attention to detail and undermine the perceived professionalism of the submission.

If the journal website does not provide explicit formatting guidelines or a manuscript template, it is necessary either to examine examples of articles published in the most recent issue of the journal or to contact the editor directly with a request for detailed author instructions.

Formatting must be executed with the highest possible level of accuracy and consistency. The individual responsible for formatting should approach the task with particular attention to detail. This includes ensuring uniform indentation and line spacing, consistent presentation of volume, issue, and page information in the reference list, standardized formatting of subsection headings, consistent text color, and the absence of unnecessary hyperlinks or embedded comments. It also includes proper table alignment, consistent font usage in figure labels, and careful attention to punctuation and typographic conventions (e.g., the correct use of dashes, hyphens, commas, and periods). The manuscript should not contain superfluous spaces, missing spaces, inconsistently formatted page ranges, or misaligned numbering. Common formatting errors include omitted publication years, inconsistent spacing, variation in reference styles, and improperly aligned numbering.

Ensure consistency in the spelling and formatting of author names, universities, and countries. For example, if only the first name and surname are used for one author, the same format should be applied to all authors; do not include patronymics for some and not others. Likewise, avoid using multiple versions of the same university name within a single article.

For example,

IM Sechenov First Moscow State Medical University и First Moscow State Medical University named after I.M.Sechenov

R. Patekov, T.S. Mebedeva, Elena Dikanova

All in-text citations must be carefully cross-checked against the reference list, and vice versa. It is essential to ensure consistency in publication years, correct attribution of all authors, and accurate bibliographic details.

Attention should also be paid to the structural requirements of the manuscript. If the journal's author guidelines specify that the article must include sections such as Abstract, Keywords, Introduction, Methods, Results, Discussion, Conclusions, and References, the manuscript must strictly adhere to this structure. Missing sections should be added in accordance with the requirements rather than left unaddressed.

Compliance with formal limits is equally important. For example, if the abstract exceeds the journal's specified word limit (e.g., 400 words instead of the required maximum of 200), it must be appropriately reduced. The same applies to limits on the number of figures, tables, references, total word count, or character count.

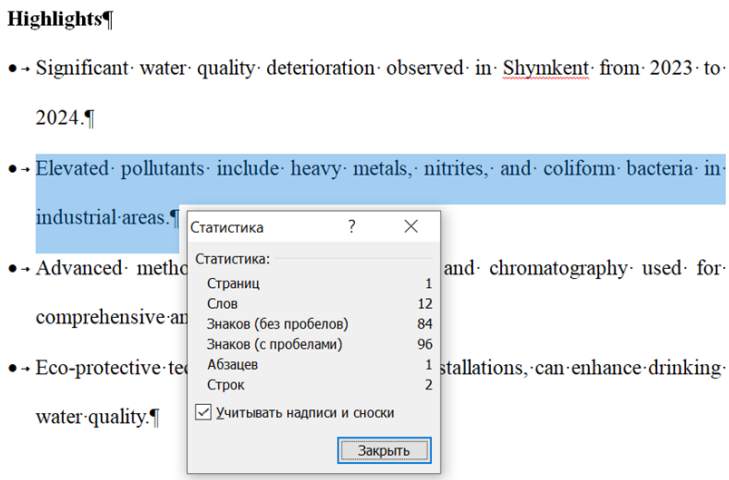
In addition to the main manuscript, all required supplementary documents must be prepared in advance, including, where applicable, a title page, copyright agreement, cover letter, and any other files specified in the journal's submission guidelines.

For example, in accordance with journal requirements, authors may be required to prepare multiple submission files, such as: Manuscript, Cover Letter, Bullet Points, Title Page, Figure 1, Table 1, etc.

In the present case, the submission package includes the following files:

1. Title page.
2. Each figure submitted as a separate file.
3. An anonymized version of the manuscript, including the title, abstract, keywords, main text, references, tables, and a list of figure captions (without the figures themselves).
4. A cover letter addressed to the journal, requesting consideration of the submitted manuscript.

5. 3-5 Highlights:



After completing the formatting of the manuscript, save and close the document, briefly shift attention to another task, and return to the formatted version after 3–4 minutes to conduct a final review. It is also essential to carefully check the document for any remaining Russian-language insertions or labels in figures, as the manuscript and all of its components must ultimately be presented in English.

Basic Manuscript Formatting Requirements

1. Verification of Text Components:

- Ensure that all required sections of the manuscript are present.
- Confirm that the entire text is translated into English.
- Check for unclear or corrupted fragments (e.g., strings of unintelligible symbols).
- The main text must not contain colored formatting; color may be used only in tables or figures where appropriate.

- In some cases, text may appear in gray; it should be corrected to standard black font.

2. Formatting (unless otherwise specified by journal guidelines):

- Page format: A4.
- Margins: 1 inch (2.54 cm).
- Font: Times New Roman.
- Font size: 12 pt.
- Paragraph spacing: none (0 pt before and after).
- Line spacing: double-spaced.
- Text alignment: justified (aligned to both margins).

3. Author Information:

- Number of authors.
- Order of authorship.
- Institutional affiliations of authors (one or multiple institutions).
- Order of listed institutions.
- Identification of the corresponding author.
- Email address of the corresponding author.
- Affiliation format: Department, University, City, Country.

4. Declarations:

- A statement regarding funding must be provided.
- A conflict-of-interest statement must also be included (in many cases, authors declare the absence of conflicts).

5. Abstract:

- The abstract should be presented as a single continuous paragraph (unless a structured format is specifically required).
- At the initial formatting stage, no content should be reduced or omitted.

6. Keywords:

- Keywords should be separated primarily by semicolons.
- They should be listed in alphabetical order.

7. Equations:

- All equations must be editable and should not be inserted as images.

8. Tables:

- All tables must be referenced within the main text.
- Decimal numbers in English should use a period (not a comma).
- Tables should not contain vertical lines and should include only minimal horizontal lines.
- Tables should be placed at the end of the manuscript file (after the reference list), with each table on a separate page.
- In the main text, tables should be removed and replaced with a placeholder on a separate line (e.g., [Table 1 here]).

9. Figures:

- All text within figures must be presented in English.
- Figures must be submitted as separate files in JPEG or TIFF format with a resolution of 300 dpi.
- If a figure consists of multiple parts, it should still be treated as a single figure and provided as one file.
- Figures should be placed at the end of the manuscript file (after the reference list), with each figure on a separate page.
- In the main text, figures should be removed and replaced with a placeholder on a separate line (e.g., [Figure 1 here]).
- After the reference list (and all tables), a separate section titled Figure Captions should be included, listing the titles of all figures without embedding the figures themselves.
- Text within editable figures should be in Times New Roman, in black color.
- All figures must be cited in the main text.

10. Citations:

- All sources included in the reference list must be cited in the text, and vice versa.
- When citing multiple sources consecutively, they should preferably be listed in alphabetical order.
- Journal-specific guidelines for citation must be followed. If not explicitly stated, authors should refer to recently published articles in the same journal as a model.
- Author names must be consistent in spelling both in the reference list and within the text.
- Publication years must match exactly between in-text citations and the reference list.
- The required citation style must be strictly followed. If the journal does not specify a style, authors should follow the format used in its published articles. If no specific journal is designated, APA 7th edition should be applied.

11. Reference List (if not specified in journal guidelines):

- No sources should be removed from the reference list. If formatting is unclear, examples from the target journal should be consulted.
- References should be arranged in alphabetical order.

Examples of Reference Formatting (if the target journal has not yet been selected):

In-text citations:

- One author: (Surname, year) → (Adams, 2024)
- Two authors: (Surname 1 & Surname 2, year) → (Adams & Wang, 2022)
- Three or more authors: (Surname et al., year) → (Adams et al., 2023)
- Multiple sources cited together should be listed in alphabetical order and separated by semicolons → (Adams, 2024; Wang et al., 2024)

Journal article format:

Surname, Initials., & Surname, Initials. (Year). Title of the article. Journal Title, volume(issue), page range. DOI

Example:

Babić Rosario, A., Sotgiu, F., De Valck, K., & Bijmolt, T. H. A. (2016). The effect of electronic word of mouth on sales: A meta-analytic review of platform, product, and metric factors. *Journal of Marketing Research, 53*(3), 297-318. https://doi.org/10.1509%2Fjmr.14.0380

Book:

Surname, Initials., & Surname, Initials. (Year). Title of the book. City: Publisher.

Example:

Hsiao, H.-H. M., & Lin, C.-Y. (2009). *Rise of China.* Abingdon: Routledge.

Book chapter / section in an edited volume / conference paper:

Surname, Initials., & Surname, Initials. (Year). Title of the chapter. In Initials Surname (Ed.), Title of the book (pp. xx–xx). City: Publisher. DOI

Example:

Gervais, B. T. (2016). Political Communication. In A. Farazmand (Ed.), *Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 70-100). New York, NY: Springer, Cham. https://doi.org/10.1007/978-3-319-31816-5_2531-1

Online article (news website) with an identified author:

Surname, Initials. (Year). Title of the article. Website Name. Retrieved from URL (accessed Date).

Example:

Cheng, E. (2017). *China is living the future of mobile pay right now.* QualityTechNews. Retrieved from

http://qualitytechnews.com/china-is-living-the-future-of-mobile-pay-right-now-cnbc-com-cnbc/ (accessed 15 September 2021).

Online article (news website) without an identified author:

Website Name. (Year). Title of the article. Retrieved from URL (accessed Date).

Example:

Congressional-Executive Commission on China (2021). *Freedom of Expression in China: A Privilege, Not a Right.* Retrieved from https://www.cecc.gov/freedom-of-expression-in-china-a-privilege-not-a-right (accessed 15 September 2021).

Online article (news website) without an author and without a publication year:

Website Name. (Year or n.d.). Title of the article. Retrieved from URL (accessed Date).

Example:

Congressional-Executive Commission on China (2021). *International Agreements and Domestic Legislation Affecting Freedom of Expression.* Retrieved from https://www.cecc.gov/international-agreements-and-domestic-legislation-affecting-freedom-of-expression (accessed 15 September 2021).

Legal document (law, regulation, etc.)

Issuing authority. (Year). Title of the legal act. Retrieved from URL (accessed Date).

Example:

State Duma (2006). *Federal Law No. 149-FZ On Information, Information Technologies, and Information Protection" (as amended and supplemented), of July 27, 2006.* Retrieved from http://base.garant.ru/12148555/ (accessed 15 September 2021).

Direct website reference (not a specific article):

Website Name. (Year or n.d.). Official website. Retrieved from URL (accessed Date).

Example:

Federal State Statistics Service of the Russian Federation (2021). *Official website.* Retrieved from https://rosstat.gov.ru/ (accessed 15 September 2021).

Patent:

Patent holder. (Year). Title of the patent. Retrieved from URL (accessed Date).

Example:

Sukhanova, M. V., Sukhanov, A. V. & Malinovsky, S. V. *Patent 2618106 Russian Federation, IPC A01C 1/06. The method of presowing seed treatment and the device for its implementation. Patent holder Sukhanova M. V.-No. 201613101318, application 19.01.2016; publ. 02.05.2017, 2017.* Retrieved from https://patents.s3.yandex.net/RU2618106C1_20170502.pdf (accessed 15 September 2021).

Sources originally in English:

If specific formatting requirements are provided in the journal guidelines, they should be followed. If not, the title of the article, journal, and other elements should be translated into English. During the revision process, the journal will indicate whether transliteration, original titles, or translated versions are required.

6.2. Identifying Journal Formatting Requirements

When preparing a manuscript, the primary reference point should be a well-formatted article (PDF version) from the most recent issue of the target journal.

Formatting a manuscript in accordance with journal requirements involves two key stages:

1. Identifying the specific formatting requirements of the journal.

2. Preparing the manuscript in full compliance with these requirements.

In most cases, all necessary information regarding manuscript preparation can be found in the journal's Instructions for Authors section. For example:

2. Preparation of Manuscripts: The entire manuscript must be typed **double-spaced,** (including title page, text, references, footnotes, figure legends and tables). Times Roman is the preferred typeface. Files should be prepared using a Microsoft Word program, indicating whether it is an IBM or Macintosh platform and what version is used. All pages should be numbered consecutively; starting with the title page and including pages containing tables and figure legends. Title, abstract, references and figure legends should be on separate pages. Tables, figure legends, and furnished art should be grouped together at the end of the manuscript to facilitate processing. Authors should write in clear, concise English. For guidance regarding English language editing, translation, manuscript formatting, and/or figure preparation, please visit http://www.tandfeditingservices.com/. The responsibility for all aspects of the manuscript preparation rests with the authors. The Editors will not undertake extensive changes or rewriting of the manuscript. The maximum length for standard research articles is 7000 words. This limit also includes references, figures and tables. Regular size figures and tables are 300-word equivalents, although multi-paneled figures or excessively large tables may count as 600 words. For example, a research article with 6000 words including references and 3 regular figures is considered a 6900-word article. Manuscripts submitted that are in excess of this limit will be returned by the Managing Editor for shortening. Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher. As an author, you are required to secure permission if you want to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as "derivative reproduction" (where you have created a new figure or table which derives substantially from a copyrighted source).All accepted manuscripts, artwork, and photographs become property of the publisher.

The title page should include the title, authors' names and addresses, phone and fax numbers, and running head not to exceed 60 characters, including spaces. All manuscripts should be accompanied by an abstract not to exceed 200 words, as well as a list of key (indexing) terms. Three to six terms not in the title will assist indexers in cross-indexing your article. The key terms should follow the abstract. Particular care should be used in preparing manuscripts involving mathematical expressions. Italic or boldface type should be clearly indicated, and Greek or unusual characters should be written plainly or explained by annotations. Simple fractional expressions should be written with a slant line rather than in the usual manner, so that only a single line of type is required.

Key aspects that require careful attention are as follows:

1) Title page formatting

- Font style and positioning of the article title.
- Presentation format of author names.
- Format of affiliations (institutional details of the authors).
- Indication of the corresponding author.
- Inclusion of a running title.

It is essential to verify whether the title page should be submitted separately (as in a blinded manuscript) or together with the main text.

2) Abstract and keywords formatting

- Compliance with the word limit for the abstract.
- Whether a structured abstract is required.
- The required number of keywords.

3) Article structure and section formatting

4) Table formatting

5) Figure formatting

6) Reference style and formatting of in-text citations and the reference list

The manuscript must be prepared in strict accordance with the journal's guidelines. Attention should be paid even to minor formatting details, as non-compliance may affect the review process.

Many journal websites provide downloadable templates. These templates are pre-formatted documents in the journal's required style, into which the content of the manuscript should be inserted.

Where to find author guidelines?

Most journals published by major publishers follow a standardized website structure; therefore, the author guidelines are typically located under the same tabs across different journals. In addition, a direct link to the guidelines is usually available on the journal's homepage.

Formatting of references and the bibliography

There are two principal citation styles: **Harvard and Vancouver.**

1. Characteristics of the Harvard style: it is most commonly used in the social sciences and humanities and is also referred to as the author–date style. In-text citations are presented in the form (Author, Year). The reference list (bibliography) is arranged in alphabetical order.

2. Characteristics of the Vancouver style: it is a numerical citation format. Common forms include (1), [1], or [1]. The reference list (bibliography) is organized in the order in which sources are cited in the text.

In the author guidelines on a journal's website, the main requirements for the citation style are typically specified immediately after the manuscript formatting requirements.

3. References: References should follow the text and begin on a separate page, be **double-spaced** and **alphabetized.** Each line after the first of each reference should be indented. If there is more than one reference by one author or group of authors in the reference, they should be placed in chronological order. Use small letters (1998a, 1988b) for references published in the same year. Reference style should follow the Council of Science Editors (CSE) manual, *Scientific Style and Format*, 7th edition. Journal titles should be abbreviated according to the Chemical Abstracts Service Source Index, 1985. Examples:

Journal articles: Meise CJ, Johnson DL, Stehlik LL, Manderson J, Shaheen P. 2003. Growth rates of juvenile White Flounder under varying environmental conditions. Trans Am Fish Soc 132(2): 225–345.

Document: Ford PL, Fagerlund RA, Duszynski DW, Polechla PJ. 2004. Fleas and lice of mammals in New Mexico. Fort Collins (CO): USDA Forest Service Rocky Mountain Research Station. General Technical Report No. RMRS-GTR-123.

Chapter in an edited book: McDaniel TK, Valdivia RH. 2005. New Tools for virulence gene discovery. In: Cossart P, Bouquet P, Normark S, Rappuoli R, eds. Cellular microbiology. 2nd ed. Washington (DC): ASM Press. p. 473–488.

All References should be referred to in the text by author's name and year of publication typed within parentheses (Jones, Bartlett, and Howe 1995), (Jones and Bartlett 1994), (Howe, 1993), (Howe, 1993; Bartlett, 1994) or Greenhill (1984). If there are 3 authors, all three should be cited in the first in-text reference; *el al.* should be used for all subsequent in-text references. If there are 4 or more authors, use *et al.* after the first author's name for all citations, *e. g.* (Brooks *et al.* 1988).

Let us consider the main types of literature sources in international academic publications:

- Journal article.
- Book.
- Book chapter.
- Conference proceedings.

It is important to learn how to identify the type of source based on its structural elements (author, title of the article or conference paper, title of the source such as journal or book, and year). The formatting of the reference should then be determined accordingly.

If the provided source lacks complete bibliographic information, it should be located in full using a search engine such as Google.

In high-quality English-language academic articles, the majority of sources (over 90%) typically consist of journal articles.

Any journal article citation typically consists of the following components:

1) Authors.

This element usually appears first and requires particular attention. Key aspects include:

- Punctuation (e.g., “Meise C.J.” vs. “Meise CJ,” which reflect different citation styles);
- Placement of initials (e.g., “CJ Meise,” “C.J. Meise,” or “Meise, C.J.”);
- Use of capitalization (e.g., “MEISE CJ” vs. “Meise CJ”);
- The conjunction before the final author (e.g., “and,” “&,” or omission, depending on style);

The use and placement of “et al.” for multiple authors.

2) Title of the article;

3) Title of the journal:

- May be presented in full or in an abbreviated form;
- Italicization is commonly applied.

4) Year of publication;

5) Volume and issue number;

- Formatting may vary (e.g., Volume(issue) or Volume:issue);

6) Page range of the article;

7) DOI (Digital Object Identifier).

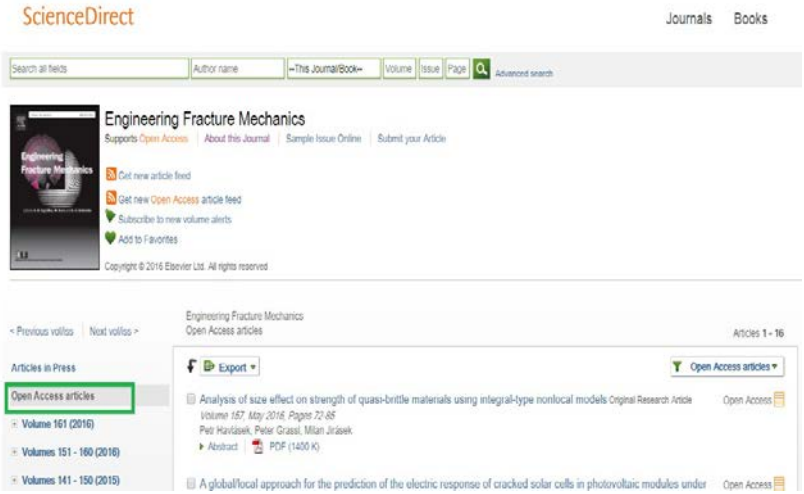
Journal Article for Final Comparison

Formatting requirements should be verified on the official website of the target journal. In addition, it is recommended to download a PDF version of an article from the journal’s most recent issue and use it as a benchmark for comparison with the formatted manuscript. This allows authors to obtain a clear and practical example of the required formatting standards.

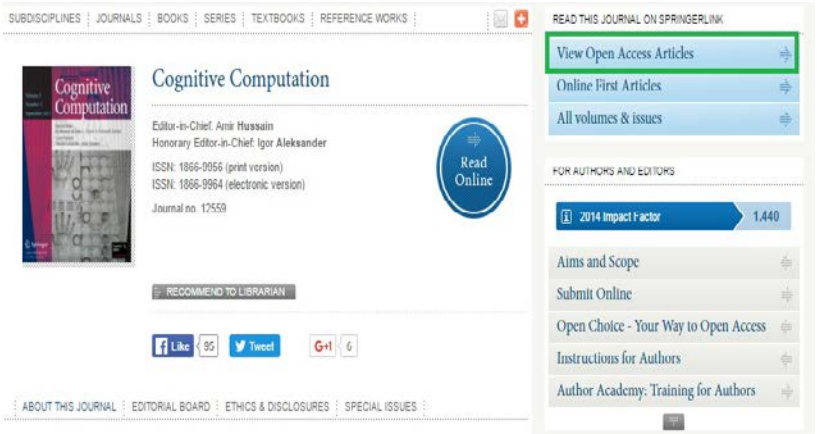
Most journals provide a selection of articles in open access, which can be downloaded and used for this purpose.

Example:

1. **Elsevier Publishing House.** Access the journal's page on the ScienceDirect platform and navigate to the Open Access Articles section. Select any available article and download it for reference.



2. **Springer Publishing House**. On the journal's homepage, select the View Open Access Articles option to access and download available open-access publications.



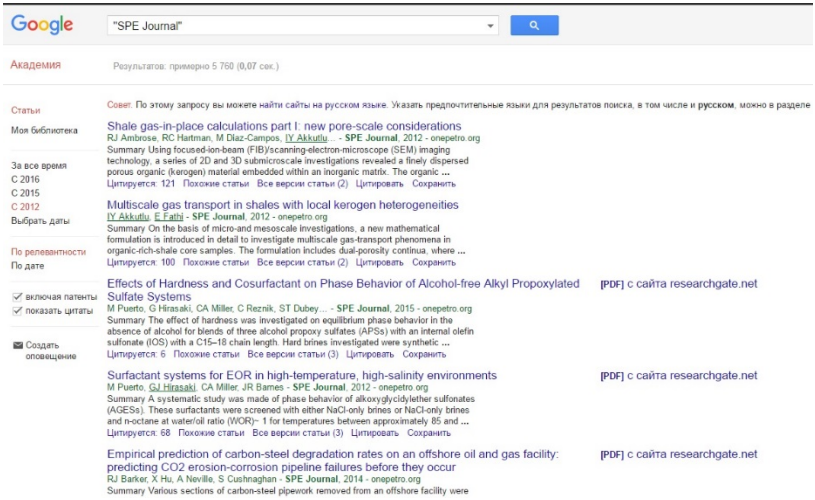
3. **Taylor and Francis Publishing House**. On the journal's homepage, navigate to Browse Journal and select Open Access Articles to access and download available publications.

Some journals may not provide open access to their articles. However, this does not necessarily mean that their publications are unavailable in open access. Authors often upload versions of their articles to publicly accessible platforms, subject to journal policies.

To locate such materials, the following steps may be taken:

1. Access Google Scholar.
2. Enter the journal title in the search field using quotation marks to ensure an exact match, and apply a publication date filter (e.g., from 2012 onward). Articles available for download will typically be indicated on the right-hand side of the results page.

For example:



Articles downloaded from journals are typically presented in their final published format, often arranged in a two-column layout to optimize space. However, when submitting a manuscript to a journal, it should generally be formatted in a single-column layout to facilitate readability for reviewers, unless the journal's author guidelines explicitly state otherwise. In all other respects, the published version may serve as a useful reference for formatting.

Examples of manuscript formatting in accordance with journal requirements, as well as reference formatting, are provided in the Appendices.

6.3. Journal-Specific Formatting Considerations (Examples of Common Errors)

A **cover letter** must accompany all submissions, formally requesting the journal to consider the manuscript. A sample is typically provided in a separate document.

Each **table** should be placed on a separate page. Tables must not be separated by blank lines; instead, a page break function should be used to ensure correct formatting.

Music education research:

Two versions of the manuscript must be prepared: one anonymized and one including full author details.

The anonymized version must not contain any declarations (e.g., funding statements, conflict of interest disclosures).

The manuscript must be formatted according to the journal template, including margins, headers/footers, and section structure. The template (Taylor & Francis) can be accessed here:

https://authorservices.taylorandfrancis.com/publishing-your-research/writing-your-paper/formatting-and-templates/

References, both in-text and in the reference list, must follow the **Chicago citation** style rather than the default style used in the initial draft. Instructions should be followed accordingly:

https://files.taylorandfrancis.com/tf_ChicagoAD.pdf

Revista espanola de pedagogia:

Carefully verify the header and footer settings, as they do not follow the standard 2.54 cm format.

Paragraph indentation (excluding the title page, abstract, tables, etc.) should be set to 0.5 cm.

Sections and subsections must be numbered.

Subsections should be formatted in Times New Roman, 12 pt, without indentation and without italics.

The word “Table” should be formatted using small caps.

An author contribution statement should be included before the reference list.

Tables do not need to be submitted as separate files, as they are already incorporated into the manuscript in accordance with the template.

Canadian journal of development studies-revue canadienne d etudes du developpement:

The reference style must follow Chicago, not APA.

Interaction studies:

Margins: 3 cm on all sides.

Page and line numbers must be included in the manuscript.

A brief author biography (maximum 100 words) must be provided.

Use placeholders such as [FIGURE 1 ABOUT HERE] within the text.

Each table should be placed on a separate page.

Cambridge journal of education and **Attachment & human development**:

Follow the journal template for headers/footers and paragraph indentation.

Use the **Chicago citation style.**

Cambridge journal of education, Attachment & human development:

The manuscript should strictly follow the journal template, including page layout, declarations, reference list formatting, and the presentation of table and figure titles.

The total word count must be indicated. The abstract should not exceed 150 words (this requirement applies specifically to Cambridge Journal of Education), and the number of keywords must comply with journal guidelines.

Avoid unnecessary blank lines throughout the document. Subheadings at the H2 level should remain in bold italics. Explanations of symbols following equations must be formatted consistently with the main text (double spacing, 12-point font, and a 1.27 cm indentation).

In the declarations section, statements on Ethics Approval and Informed Consent must be included where the study involves human participants.

According to APA 7th edition guidelines, references to book chapters and conference proceedings should include only the publisher's name; the location of the publisher is no longer required.

References listed as "in press" should be verified via Google Scholar and, if necessary, by accessing the publisher's webpage directly, as publication details may already be available even if not yet updated in indexing databases.

For TAYLORANDFRANCIS journals that apply a "double anonymous peer review" process, two versions of the manuscript must be prepared: (1) a full version including author details and declarations, and (2) an anonymized version excluding all identifying information, including institutional affiliations (e.g., replacing them with "[BLINDED] University" where necessary).

The TAYLORANDFRANCIS submission system may not reliably process figures in TIFF format; therefore, JPEG is recommended.

If multiple submissions of the same manuscript are made within the TAYLORANDFRANCIS system, the title should be slightly modified to distinguish each submission.

Development and change:

Page layout should be configured with margins of 2.54 cm on all sides, including the bottom margin.

The entire manuscript should be formatted in 12-point font, with no spacing before or after paragraphs.

The abstract does not require reduction unless explicitly specified by the journal.

Attention should be given to the correct formatting of headings, as well as the titles of tables and figures.

For in-text citations involving two authors, the conjunction “and” should be used instead of “&” (e.g., Wise and Halpern, 2024 rather than Wise & Halpern, 2024).

The reference list requires careful revision, as formatting errors are common. Particular attention should be paid to punctuation (use of periods and commas), the correct application of italics, and adherence to style conventions. For example, “pp.” should not be used for journal articles, and page ranges should be presented in abbreviated form (e.g., 235–60 rather than 235–260). Additionally, some references to book chapters may be incomplete and should include all required bibliographic elements.

Interaction Studies:

The manuscript should be formatted in 12-point font throughout, with no spacing before or after paragraphs, and with double line spacing.

The abstract should not exceed 150 words.

Journal of labor research:

A running title is not required.

An Author Contributions statement must be included in the declarations section (as required by Springer journals).

Citation formatting should be carefully checked; for example, (Han et al, 2023) should be corrected to (Han et al., 2023).

JEL codes must be included.

Remove any unnecessary spacing after paragraphs.

Ensure correct formatting of table and figure titles.

For double-blind peer review, all identifying author information must be removed from the manuscript. For instance, citations such as Fronin et al. should be replaced with [AUTHOR] et al., with corresponding adjustments in the reference list.

Use of 10-point font is not mandatory.

Tables and figures may remain embedded within the text.

For website references, “Retrieved from” statements should reflect access dates within approximately one month prior to submission.

Economics & Politics и Analyses of Social Issues and Public Policy:

The manuscript should be formatted in 12-point font throughout, with double line spacing and no spacing before or after paragraphs.

Citation formatting has not been fully verified; in several instances, citations appear as (Han et al, 2023) instead of the correct format (Han et al., 2023).

For Analyses of Social Issues and Public Policy, the abstract should not be structured. Authors are advised to consult published articles from the journal for formatting examples.

Figures must be submitted as separate files, while tables should be placed at the end of the manuscript document for Analyses of Social Issues and Public Policy.

For double-blind peer review, all identifying author information must be removed from the manuscript text. In this case, citations such as Frunina et al. should be replaced with [AUTHOR] et al., with corresponding changes made in the reference list.

Special attention should be paid to the formatting of headings, as well as the titles of tables and figures, in accordance with the style used in the journal’s published articles.

Journal of theoretical politics:

The manuscript should be formatted in 12-point font throughout, with double line spacing and no spacing before or after paragraphs.

In-text citations have not been formatted in accordance with the required style, and the reference list has been completed inconsistently.

Each table placed at the end of the document must appear on a separate page.

Journal of infrastructure, policy and development:

The citation style should follow the author–date format rather than numerical referencing (consult the journal guidelines and published articles for examples).

Particular attention should be paid to spacing before and after headings, as well as the formatting of figure and table titles.

A completed checklist must be uploaded together with the manuscript submission.

The filled-in checklist must be uploaded with the submission.

Provided as a separate file - Checklist Example Checklist_JLI august 2025.docx

https://relx-elsevier-erms.my.salesforce.com/sfc/p/1t000000qIy5/a/Tl000000KYIU/DUqntciSBATsDiW9LLBXdO0MsGgPA58NwfGDMQhrMrk

Cambridge journal of education:

1. An anonymized version of the manuscript, without author information, has been added.

2. The total word count has been indicated in the manuscript.

European journal of information systems:

1. The article title has been rephrased, as the Taylor and Francis submission system monitors parallel submissions.

2. The total word count has been indicated in the manuscript.

Health education research:

1. The font size throughout the manuscript has been corrected to 12 pt, and double line spacing has been applied consistently.

2. The volume and issue numbers in the reference list have been reformatted in italics instead of bold typeface.

Journal of the learning sciences:

1. Instead of a separate title page, the manuscript file containing the author information has been added.

2. The article title has been rephrased, as the Taylor and Francis submission system monitors parallel submissions.

Learning and instruction:

1. The article title was missing from the title page and has now been added.

2. Declarations were added to the title page, including the required author contribution statement.

Authors' contributions

All research processes were conducted by author: conceptualization, methodology, software, validation, formal analysis, investigation, resources, writing - original draft preparation, writing - review and editing, visualization, etc.

3. **Conclusions** should be presented as a separate numbered section and designated as Section 5.

Bulletin of the council for research in music education:

The title page should use double line spacing and justified alignment.

Declarations should be placed on the title page rather than in an Author Note.

Author information should appear at the top of the page, while declarations should follow directly below without excessive blank spacing.

The corresponding author should be identified immediately after the affiliations, not within an Author Note.

Double spacing must be maintained throughout the manuscript. Article titles and section headings should not use 1.5 spacin.

If the main text is justified, the abstract should also be justified.

Section headings should appear in bold only; subsection headings should be formatted in bold italics. Statistical Analysis should be treated as a subsection within the methodology section.

A blank line should precede subsection headings

In the reference list, conference papers must include the editors of the conference proceedings.

Table formatting should include only horizontal lines: one at the top, one at the bottom, and one below the column headings. All other horizontal lines should be removed.

Opera quarterly:

The current in-text citation formatting is incorrect. Please review the journal's use of endnotes, which involve automatic numbering through end-of-document notes. Endnotes should be inserted via References → Insert Endnote. The endnote number should appear after punctuation marks.

The formatting of the reference list was more accurate in the previous version. Following the revisions, substantial bibliographic information was removed, including author names, publication years, and publication locations. If the required formatting remains unclear, consult published articles from the journal for guidance.

The title page should not contain special indentation, custom alignment settings, or non-standard font formatting. Standard formatting should be used throughout: Times New Roman, 12 pt, double spacing, and justified alignment. Avoid inserting multiple blank lines before the title or excessive spacing after affiliations. An Author Note at the bottom of the page is not required; instead, declarations should be placed immediately after the corresponding author's email address.

Musica hodie:

The template header should not be removed: Música Hodie | ISSN: 2317-6776 DOI: 10.5216/mh.vxx.xxxxx

The title font is correct; however, the spacing is incorrect.

The abstract should use single line spacing rather than 1.5 or double spacing.

Please consult the journal guidelines carefully, as all formatting requirements, including indentation and spacing, are explicitly specified there**.**

* The section text must be defined using Times New Roman, 12-point size, justified, single line space and 6-point spacing afterwards.

* The first paragraph of the section, subsection and subsection must not contain the indentation of the first line; the other paragraphs must have the indentation of the first line of 0.75 centimeters.

* The header of a section title must be in bold, 14-point size, initial capital letters, aligned to the left, with a line space and an additional spacing of 24 points before and 12 points after.

Table formatting does not comply with the journal guidelines. Bold formatting, the use of a dash between the table number and title, excessive table lines, and incorrect spacing should be removed.

In the reference list, hanging indents (second-line indentation) should not be used. Instead, automatic paragraph **spacing after each reference entry should be applied**.

The placeholder **“[insert access date]”** has not been completed, and the access date must be specified

Journal instructions example:

https://www.sciencedirect.com/journal/food-chemistry/publish/guide-for-authors

The Writing and formatting section contains all essential formatting requirements, including the title page, abstract, highlights, manuscript structure, section numbering, and reference formatting (both in-text citations and the reference list, including appendices).

If specific formatting details are not explicitly described, the following standard formatting conventions should be applied:

- A4 page format;
- 2.54 cm margins;
- Double line spacing;
- Times New Roman, 12 pt;
- Justified alignment;
- No first-line paragraph indentation;
- No automatic spacing before or after paragraphs (except for a single blank line before section or subsection headings).

Section headings should be formatted in bold, while subsection headings should appear in bold italics.

Tables should be placed at the end of the manuscript file, whereas figures should be submitted separately.

These represent the standard formatting conventions. However, if the journal provides its own formatting instructions, authors must follow those instructions and use published articles from the journal as reference models.

Issues related to journal templates:

Canadian journal of plant pathology - the journal provides a template, but it was not used.

Plant biosystems - the journal provides a template, but it was not used.

South african journal of botany - the journal provides a template, but it was not used.

Plant disease - an incorrect template was selected and used.

Journal of plant diseases and protection, Journal of plant pathology:

Tables and figures should remain embedded within the text.

Plant biosystems, Canadian journal of plant pathology:

Margins: top and bottom - 2.5 cm; left and right - 3 cm

The abstract should appear on a separate page, with spacing of 18 pt before and 15 pt after (for Canadian Journal of Plant Pathology, the abstract should be unstructured).

A 1.27 cm paragraph indentation has not been consistently applied throughout the text.

Attention should be paid to the formatting of lists, declarations, and the titles of tables and figures.

Special attention should also be given to the formatting of references containing more **than 10 authors.**

South African Journal of Botany:

Each sentence in the Highlights section must not exceed 85 characters, including spaces.

Tables should be placed at the end of the manuscript; particular attention should be paid to the formatting of table titles.

Not all in-text citations comply with the journal guidelines.

For double-blind peer review, author names and institutional affiliations must be anonymized (e.g., Salbekova et al. should be replaced with [AUTHOR] et al., with corresponding modifications in the reference list).

Journal titles in the reference list should be presented in abbreviated form.

For Elsevier journals, affiliations must include the full institutional address, including street and postal code.

Plant Disease:

The page format should be set to Letter.

The abstract should be unstructured.

The reference list should appear under the heading Literature Cited.

Figure titles should consistently use the abbreviated format (e.g., Fig. 1).

The journal applies specific formatting requirements for references to book chapters.

The journal also applies specific formatting requirements for dissertations and theses.

Arab journal of basic and applied sciences:

Keywords should be arranged in alphabetical order.

Figures: if a figure consists of multiple parts, it should still be treated as a single figure and submitted as one file. Accordingly, the correct format is not **Fig**. 1a and **Fig**. 1b, but rather Fig. 1, with all components combined within a single file.

International journal of agriculture and biosciences:

In the reference list, initials should be written without spaces.

DOI formatting should follow the format doi:.

Page ranges should be abbreviated (e.g., 751–7 rather than 751–757).

When anonymized references are used for blind review, the full non-anonymized versions should still be retained on the title page. Otherwise, restoring the original references at later stages may become difficult. For example, references formatted as Author et al. (2025). Details withheld to preserve blind review.

should have their complete citation details preserved separately on the title page.

Journal of the science of food and agriculture:

In-text references should appear in superscript format after the punctuation mark. For example, the citation number should follow the period rather than precede it (i.e., "." followed by the superscript number, not "1."). Special automated citation formatting is not required in this case; manual (non-automated) numbering should be used.

In the reference list, paragraph spacing is incorrect. Journal titles should be presented in abbreviated rather than full form. Before the final author name in a reference entry, only "and" should be used, without a preceding comma.

The declarations section must include three mandatory statements:

1. Funding;
2. Conflict of interest;
3. Data availability.

Regional environmental change:

References:

In-text citations for two authors should use "and" rather than Rai and Gael 2025).

If there are more than five authors in a reference,

then those five names should be given, followed by "et al".

DOI formatting should follow the form **doi**:

Online sources without DOI numbers should include an access statement in the format: Accessed 26 June 2025...

References listed as "in press" should be verified, as some may already have been formally published (as in the case of Zhon H (2025).

Each table should begin on a new page.

One in-text citation has been highlighted in yellow, and one source in the reference list appears with automatic numbering; both formatting inconsistencies should be corrected.

Analytical and Bioanalytical Chemistry, Food and bioprocess technology, Plant foods for human nutrition:

Tables and figures should remain embedded within the text.

When formatting books or book chapters in APA 7 style, the publisher's location is not required (Food and Bioprocess Technology).

For references to book chapters, page ranges should be indicated at the end of the citation **(Plant Foods for Human Nutrition).**

Attention should be paid to the formatting of **table titles.**

Journal of food measurement and characterization:

Tables should remain within the text.

In the reference list, the titles of journal articles and book chapters should not be included.

Attention should be paid to the formatting of table titles**.**

Journal of Food Composition and Analysis:

The abstract should not exceed 200 words.

There are inconsistencies in the numbering of second- and third-level subheadings (e.g., 2.2., 2.2.2.).

Figure references in the text should use the abbreviated format (e.g., **Fig. 1**).

When formatting books or book chapters in APA 7 style, the publisher's location should not be indicated.

Attention should be paid to the formatting of table and figure titles, including the use of a period after the figure number.

Each **Highlight** statement must not exceed 85 characters, including spaces.

Analytical methods:

Superscript numbering in the text should be placed after the period at the end of the sentence.

There are inconsistencies in the formatting of second- and third-level subheadings.

Tables have not been formatted correctly: vertical lines should be removed, and the first row in each table should be presented in bold typeface.

Attention should be paid to the formatting of table and figure titles.

In the reference list, page ranges should be presented in full format (e.g., 2739–2749 rather than 2739–49).

The abstract does not require reduction.

Figure resolution must be 300 dpi.

An ethics declaration is missing and should be added.

Nutrition, Metabolism and Cardiovascular Diseases:

For double-blind peer review, a separate title page is required, and all institutions and authors associated with the research must be anonymized.

In-text numbering involving two or more references should be formatted without spaces (e.g., [1,2] rather than [1, 2]).

Attention should be paid to the formatting of table and figure titles.

Each Highlight statement must not exceed 85 characters, including spaces.

Page ranges in the reference list should use abbreviated formatting (e.g., 1151–210 rather than 1151–1210).

The abstract does not require expansion.

Bmc cardiovascular disorders:

The abstract should contain structured sections.

A list of abbreviations must be included.

Page ranges in the reference list should use abbreviated formatting (e.g., 1151–210 rather than 1151–1210).

An author contributions statement is required.

The abstract does not require expansion.

Internal medicine journal:

Superscript numbering should be placed after punctuation marks within the sentence.

Attention should be paid to the formatting of table and figure titles.

Page ranges in the reference list should be presented in abbreviated format (e.g., 1151–210 rather than 1151–1210).

Special attention should be given to the formatting of references containing more than six authors.

The abstract does not require expansion.

Archives of cardiovascular diseases:

A graphical abstract is missing and should be added.

A list of abbreviations is required.

For double-blind peer review, a separate title page must be provided, and all institutions and authors associated with the study should be anonymized.

In-text citations containing two or more references should be formatted without spaces between citation numbers (e.g., [1,2] rather than [1, 2]).

Highlights must be submitted as a separate file, with each statement not exceeding 85 characters, including spaces.

Figure legends should be placed on a separate page.

The abstract does not require expansion.

Annals of nutrition and metabolism:

Page ranges in the reference list should be presented in abbreviated format (e.g., 1151–210 rather than 1151–1210).

Attention should be paid to the formatting of references containing more than six authors.

Table formatting must comply with the journal template, including spacing, font, and font size requirements.

Cardiovascular Diagnosis and Therapy:

Tables should be submitted as separate files.

In-text citations containing two or more references should be formatted without spaces between citation numbers: (1,2) rather than (1, 2).

Second-level headings should not be highlighted.

Attention should be paid to the formatting of references containing more than three authors.

Page ranges in the reference list should be presented in abbreviated format (e.g., 1151–210 rather than 1151–1210).

Attention should be paid to the formatting of table and figure titles.

Arquivos brasileiros de cardiologia:

Superscript numbering should be placed after the period at the end of the sentence.

The reference list should follow the formatting style used in the journal's published articles.

A section entitled What's New should be added.

Water security:

The reference list has not been formatted.

The title page should be submitted as a separate file.

The Highlights section should be revised, taking character limits and spaces into account.

Headings should be numbered.

Attention should be paid to the formatting of table and figure titles.

Urban water journal:

Margins should comply with the journal template.

The abstract should begin on a new page.

Spacing before and after paragraphs should be corrected.

Declarations should be formatted according to the journal template.

In-text citations should be revised, with particular attention to references containing three authors.

Author identities should be concealed in the anonymized version of the manuscript.

Table and figure titles should be formatted in accordance with the journal template.

Author contributions should be specified individually for each author.

Water international:

Margins should comply with the journal template.

The abstract should begin on a new page, should not exceed 100 words, and spacing before and after should be adjusted accordingly.

Declarations should be formatted in accordance with the journal template.

In-text citations should follow APA 7 style.

Author identities should be concealed in the anonymized version of the manuscript.

Table and figure titles should be formatted according to the journal template.

Environmental Conservation:

Multiple citations within the same parenthetical reference should be separated by commas (e.g., Abuneh 2024, Kabab et al. 2025).

Figure references within the text should use the abbreviated format (e.g., **Fig. 1).**

Water and Environment Journal:

Highlights should be placed directly within the manuscript text, immediately after the abstract, with each statement limited to 85 characters, including spaces.

Attention should be paid to the formatting of headings, as well as table and figure titles.

In the reference list:

- no spaces should appear between author initials;
- when more than one author is listed, no comma should appear before the ampersand;
- no period should follow the publication year;
- the journal issue number should appear in regular font rather than italics.

Journal of arid land:

The manuscript should be formatted according to the journal template.

The previously unavailable template can be accessed here:

[Journal of Arid Land Template]

http://jal.xjegi.com/EN/column/column8.shtml

A copyright statement should be added.

Water security:

Highlights must not exceed 85 characters, including spaces; character counts should be verified carefully.

On the title page, affiliations should include full institutional addresses, and an author contribution statement should be provided.

In-text citations for two authors should use “and” rather than an ampersand (e.g., Malson and Tankin, 2025).

Book chapter references are incorrectly formatted: a comma should follow the chapter title, and page ranges should appear at the end of the citation.

Journal titles are not consistently presented in abbreviated form and should be standardized throughout the reference list**.**

Urban Water Journal:

An unnecessary space appears after the article title.

The heading preceding the abstract is missing.

A 1.27 cm paragraph indentation has not been applied consistently throughout the manuscript.

Declarations should be formatted in 11-point font, with 1.5 line spacing and 6 pt spacing before the paragraph.

Table and figure titles should be formatted with 12 pt spacing before and 1.5 line spacing.

Particular attention should be paid to references containing more than 10 authors; only the first seven authors should be listed, with the remaining authors replaced by et al.

Water International:

An unnecessary space appears after the article title.

The heading preceding the abstract is missing.

The abstract should use spacing of 18 pt before and 15 pt after.

A 1.27 cm paragraph indentation has not been applied consistently throughout the manuscript.

Declarations should be formatted in 11-point font, with 1.5 line spacing and 6 pt spacing before the paragraph; an author contribution statement is not required for this journal.

When formatting books or book chapters in APA 7 style, the publisher's location should not be indicated.

Institutional affiliations in the anonymized version should be concealed using the designation *[BLINDED]*.

Table and figure titles should be formatted with 12 pt spacing before and 1.5 line spacing.

Example of how author contributions should be described:

Elmira Keiba – Software, Validation; Aysul Abda – Formal Analysis, Investigation; Chave Avinda – Resources, Data Curation; Bdani Okov – Conceptualization, Methodology, Writing – Review & Editing; Nailya Baeva – Writing – Original Draft Preparation, Visualization; Bekiz Kubatyrov –

Supervision, Project Administration, Funding Acquisition. All authors read and approved the final manuscript.

Genome research:

When two or more references are cited together in the same location, they should be arranged in alphabetical order (e.g., Hafelt et al. 2024; Xu et al. 2023).

In-text citations should be corrected: when an author is explicitly mentioned in the sentence and followed by a citation number, the author–date format should instead include the publication year in parentheses. For example, “our study and Xu et al.’s [9] work…” should be revised to “our study and Xu et al.’s (2021) work…”.

The reference list formatting should be corrected: double line spacing should be applied throughout, with no additional spacing after entries.

The reference list requires careful revision and correction: some entries are missing page numbers or journal titles, and in several cases, commas have been used instead of periods.

Biochemical engineering journal:

Affiliations should include the full institutional address, including street name and postal code.

The reference list should be reviewed carefully and corrected: some references are missing page numbers or journal titles, and punctuation is inconsistent, particularly after article titles.

Tables should be placed at the end of the manuscript document.

Biotechnology and bioengineering:

In-text citations should be corrected: when an author is explicitly mentioned in the sentence and followed by a citation number, the author–date format should instead include the publication year in parentheses. For example, “our study and Xu

et al.'s [9] work…" should be revised to "our study and Xu et al.'s (2021) work…".

Tables should be placed at the end of the manuscript document.

In the reference list, journal titles should be written in full, and several entries are missing page numbers that should be restored.

Journal of the american medical informatics association

Affiliations should include the full institutional address, including street name and postal code.

Headings should be formatted in accordance with the journal requirements.

Alt text should be added for the figure.

The reference list formatting should be corrected: double line spacing, no spacing after entries, and a hanging indent of 1.25 cm.

The citation rules for references containing more than three authors have not been consistently followed.

For book chapter references, the publisher's location should be added, and the punctuation following it should be removed.

Previously deleted page numbers should be restored and formatted in abbreviated style (e.g., 3467–71 rather than 3467–3471).

Medical decision making

A running head should be added to the title page.

Tables should be placed at the end of the manuscript document.

Empty section headings Acknowledgements and

Statements and Declarations should be inserted before the reference list.

Superscript references within the text should appear after punctuation marks (e.g., evolution of genomes.^1).

The reference list should be formatted with double-line spacing, no spacing after entries, and a hanging indent of 1.25 cm.

In the reference list, et al. should be used when there are more than six authors. All instances of Epub ahead of print should be removed and replaced with the format year;volume:pp–pp, with page ranges presented in abbreviated form. Published articles from the journal should be used as formatting examples.

DOI numbers are missing from several references and should be added where available.

An ethics declaration should be included throughout the manuscript where required.

Diabetes and metabolism:

Author contributions should be specified individually for each author.

Affiliations should include the full institutional address, including street name and postal code.

Headings should not be numbered.

Highlights should not exceed 85 characters, including spaces.

When formatting book chapters, the full title of the book should be provided, and the publisher's location should be added.

The reference list should be carefully checked for punctuation errors (e.g., missing closing parentheses, incorrect punctuation marks), and automatic numbering should be used throughout.

Table and figure titles should be revised in accordance with the formatting style used in the journal's published articles.

Endocrine pathology:

A title page is missing and should be added.

Page numbering should be included.

Tables and figures should remain embedded within the text.

The reference list formatting should be corrected: double line spacing, no spacing before or after entries, and a hanging indent of 1.25 cm. Automatic numbering should also be applied to the reference list.

Issue numbers should be added for journal articles, and publisher locations should be included for books, book chapters, and conference proceedings.

DOI numbers are missing from several references and should be added where available.

European journal of clinical investigation:

A graphical abstract and accompanying explanatory text should be added.

Author contributions should be specified individually for each author.

In-text citations should be converted to superscript numbering placed after punctuation marks (e.g., patient care.^1).

The reference list formatting should be corrected: double line spacing, no spacing before or after entries, and a hanging indent of 1.25 cm. Automatic numbering should also be applied.

"Available from:" should be removed;

- page ranges should be written in full rather than abbreviated form;
- journal, book, and conference titles should appear in italics;
- DOI numbers should use the abbreviated format (e.g.,doi: 10.52341/jrmi.v7i2.527);
- publisher locations should be added where required.

If a reference contains more than six authors, only the first three authors should be listed, followed by et al.

Book chapter references should be formatted according to the journal's published examples: Dahin A, Grusenko K. Pharmacological. In: Irman KD, Vavelu N, eds. Perioperative Pain Management. Oxford: Oxford University Press; 2023. 31-7.

Clinica terapeutica:

A separate title page is required.

Single line spacing should be used throughout the manuscript.

In-text citations should follow the order of appearance and be formatted as (1).

The reference list formatting should be corrected: single line spacing, no spacing before or after entries, and a hanging indent of 1.25 cm. Automatic numbering should also be applied to the reference list.

In the reference list, italics should be removed, and the formatting of book chapters should be corrected, including publisher location and punctuation.

Bangladesh journal of medical science:

First-level headings should be underlined.

In-text citations should follow the order of appearance and be formatted as (1).

The reference list formatting should be corrected: double line spacing, no spacing before or after entries, and a hanging indent of 1.25 cm. Automatic numbering should also be applied to the reference list.

Issue numbers for journal articles and publisher locations for books, book chapters, and conference proceedings should be restored. Book chapters should be formatted in accordance with the journal requirements.

Health communication:

Alt text should be added for all figures.

In the anonymized version of the manuscript, the institution where the research was conducted should be replaced with "[BLINDED] University."

Certain references should be reformatted either as books or as book chapters, depending on the source type.

Endocrinology and metabolism:

The journal template should be used.

A copyright statement should be added.

Book chapters are formatted incorrectly: publisher locations are missing, titles have been abbreviated, the order of information is incorrect, and punctuation does not comply with the required style.

Asian journal of law and economics:

A separate title page is required.

Formatting should be prepared without using a template.

The reference list should be corrected in accordance with the formatting used in the journal's published articles.

International review of law and economics:

The abstract should be reduced to 250 words.

On the title page, affiliations should include the full institutional address (street and postal code), author contributions should be specified individually for each author, and a declaration entitled "Availability of Data and Material" should be added together with author biographies.

Keywords should be arranged in alphabetical order.

Declarations should be removed from the main manuscript document.

Automatic numbering should be used for the reference list.

Reference [2] is a book rather than a book chapter and should be formatted accordingly.

Book titles should not be abbreviated when formatting book chapters, and the publisher's location is mandatory.

Issue numbers for journal articles should not be removed.

Punctuation throughout the reference list should be reviewed carefully and corrected where necessary.

Website references should include an "(accessed …)" statement, and their formatting should be corrected, including placement of the publication year at the end of the reference.

Capital markets law journal:

A separate title page is required, including a declaration entitled "Availability of Data and Material."

The abstract should be reformatted into a "Key Points" section (maximum 250 words).

Keywords should be arranged in alphabetical order.

Footnote numbers should appear after punctuation marks; the footnote text should be formatted in 11-point font with double line spacing.

Footnotes are formatted incorrectly: journal titles should appear in abbreviated form, and issue numbers have been confused with page numbers. All other references should also be reviewed and corrected.

Page numbering should be added.

Journal of world investment and trade:

The journal title in the cover letter should be corrected to match the target journal.

On the title page, a declaration entitled "Availability of Data and Material" should be added; keywords should be arranged alphabetically; JEL codes are not required.

The manuscript should use 1.5 line spacing.

Footnote numbers should appear after punctuation marks.

Heading numbering should be corrected (without periods after numbers).

Footnotes should be reviewed carefully: the type of each source (book, journal article, or book chapter) should be identified and formatted accordingly; full author names should be provided; journal titles should appear in abbreviated form; and issue numbers and page ranges should be added where required.

Legal issues of economic integration:

A separate title page is required, including a declaration entitled "Availability of Data and Material."

Author biographies should be added.

Footnotes should be formatted according to Chicago style: the type of each source (book, journal article, or book chapter) should be identified and formatted accordingly; page numbers, publisher locations, and issue numbers should not be removed.

6.4. Accompanying Documents for Journal Submission

Declaration to the editor

Title of the manuscript: **THE * OF THE * FROM THE * TO THE ***

Author: **Yulia Yulievna Yulina**

I the undersigned declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere.

I wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

I confirm that there are no other persons who satisfied the criteria for authorship but are not listed.

I also confirm that I have followed the regulations of my institutions concerning intellectual property.

I further confirm that any aspect of the work covered in this manuscript that has involved either experimental animals has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

I confirm that I have provided a current, correct email addresses for the correspondence (*@*.*, *@*.*).

Date: 01/11/2025 Signature: **Yulina Y.**

Conflict of Interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed.

We further confirm that the order of authors listed in the manuscript has been approved by all of us.

We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing we confirm that we have followed the regulations of our institutions concerning intellectual property.

We understand that the Corresponding Author is the sole contact for the Editorial process (including Editorial Manager and direct communications with the office). He is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

We confirm that we have provided a current, correct email address which is accessible by the Corresponding Author and which has been configured to accept email from (*@*.*, *@*.*).

1. AS* Ka*
2. UZ* Ru*
3. NU* Da*
4. SA* Dy*
5. SH* As*

01.10.2025

CONTRIBUTION

We confirm that all Authors of this manuscript have made substantial contributions to

- the conception and design of the study
- the acquisition of data
- the analysis and interpretation of data
- the drafting the article and revising it critically for important intellectual content,
- the final approval of the version to be submitted.

Authors	Conception and design	Acquisition of data	Analysis and Interpretation of data	Drafting of the manuscript
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

Authors	Critical revision of the manuscript for important intellectual content	Statistical analysis	Obtaining funding	Administrativete chnical or material support	Super vision
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					

COVER LETTER TO THE EDITOR

A cover letter should always be prepared and submitted together with each manuscript.

Some journals impose highly specific requirements regarding the information to be included in the cover letter, and such requirements are usually specified in the journal's Instructions for Authors. Therefore, authors should ensure that all mandatory elements are included in the submitted letter.

A strong cover letter explains to journal editors why the manuscript is suitable for publication in their journal.

Cover letters should be concise and should focus on the significance and originality of the findings, as well as their relevance to the interests and scope of the journal's target audience.

The primary purpose of the cover letter is to persuade the journal editors to consider the manuscript for publication.

The Cover Letter should include the following elements:

1. The title of the manuscript.
2. The title of the target journal.
3. The full names of all authors, clearly identifying the corresponding author.
4. The full academic titles, positions, and degrees of the authors, including institutional affiliations.
5. Suggested reviewers, including full name, email address, and telephone number.
6. An explanation of why the manuscript is relevant to the journal and what novel, significant, and practically valuable contributions it offers, particularly in relation to the reported findings.

Following the structure of an abstract, the cover letter should include a concise characterization of the main topic, the research problem addressed in the article, the objectives of the study, and its principal findings. It should also indicate the novelty of the manuscript in comparison with other studies of similar subject matter and purpose.

Example 1:

This article examines the problems of … The characteristic features of … and their application within the process of … are analyzed. The necessity of … is identified and substantiated. Based on the conducted research, the author proposes …, provides its definition, and formulates the main characteristics of …

Example 2:

The article is devoted to …, which … It is demonstrated that … play an important role in society, as they may … or alternatively … In the twenty-first century, … should develop according to …, characterized by … aspects. The principal advantage of the approach proposed by the author lies in …, …, and …

Example 3:

The article aims to examine … using the example of … As a result of the analysis, the author demonstrates for the first time in … that … These phenomena possess … This provides an opportunity to …

Example 4:

The article addresses the issues of … The author examines the objectives, forms, and types of … Particular attention is devoted to … and … Based on the analysis of …, its …, as well as …, the role of … in … is determined.

The cover letter should also include:

7. The number of figures.
8. The number of tables.
9. The total word count of the manuscript.
10. If the manuscript has been previously submitted to the journal, the manuscript ID from the earlier submission should be provided.

Before submission, please ensure that you have prepared:

(a) the complete version of the manuscript;

(b) the anonymized version of the manuscript intended for blind peer review (without author names or identifying information).

Do you have any conflicts of interest? If yes, please specify them.

Example of a cover letter:

4. Sample Cover Letter

My Name
University of Research
804 Research Drive
Los Angeles, CA, USA 90210
310-555-1234
m.name@researchu.edu

Dr. John Editorian
Editor-in-Chief
Journal of Science

August 3, 2012

Dear Dr. Editorian:

I am pleased to submit an original research article entitled "Neofunctionalization of polymerase rho in *Ustilago maydis*" by Albert Postdoc and My Name for consideration for publication in the *Journal of Science*. We previously uncovered a role for polymerase rho in DNA repair in *U. maydis* **[citation]**, and this manuscript builds on our prior study to determine the evolution of this unique enzyme.

In this manuscript, we show that polymerase rho... **[list a few important results]**.

We believe that this manuscript is appropriate for publication by the *Journal of Science* because it... **[specific link to the journal's aims & scope]**. Our manuscript creates a paradigm for future studies of the evolution of essential enzymes in yeast.

This manuscript has not been published and is not under consideration for publication elsewhere. We have no conflicts of interest to disclose, but we do respectfully request that Dr. Glen Meanie not review our manuscript. If you feel that the manuscript is appropriate for your journal, we suggest the following reviewers:

[list reviewers and contact info, if requested by the journal]

Thank you for your consideration!

Sincerely,

My Name, PhD
Professor, Department of Evolutionary Mycology
University of Research

Title: ***

Lena Nico* Bar* – Doctor of *, Professor
* University, Department of *, City, Country
E-mail: *@*.*

Abstract
Purpose – Discuss the *. Determine the concept of *.
Design/methodology/approach – Proposed a new *. In the mathematical *. We use the *. For this purpose *.
Findings – For the development of *, as *, but *.
Practical implications – *, the basic models of *. The new * of *.
Originality/value – The paper introduces * on * of the. It helps to *.

Keywords *, *, *, *

Number of words: 4228

Dear editor,

Herewith I submitted the following article to the journal "*"/

I would be glad to receive your broadened recommendations to complete my paper for the next review to be successful.

Kindly asking to assist me in pre-term paper review and its publishing in next issue of a journal.

The revisions will be made in accordance with journal's recommendations and guidelines in a shortest time possible and in an excellent quality.

Hope for your assistance and cooperation.

Thank in advance.

I hope to listen from as soon as possible.

Sincerely yours, **Lena Nico* Bar***!

Title: ***

I* U* S*, Doctor of *

Correspondence: I* U* S*, *, * Str., apt. *, City, Country, 10000. Tel: *. E-mail: *

Received: -------- / Revised: ---------- / Accepted: ---------- / Published online: ----------

Abstract.
Objective: to study the * of the * and cases of *.
Methods: the experiment *. It is the *.
Results: * and * were * in the * of *. ***
Conclusion: the * with * of. They are *.

Key words *:* *, *, *

Number of words: 3322

We have no conflicts of interest to disclose.
If you feel that the manuscript is appropriate for your journal, we suggest the following reviewers:

Dear editor,
Herewith I submitted the following article to the journal "*****"

Will you be so kind to help with the article's publication.
Due to my presentation of the dissertation I have to meet deadline very soon.
Kindly asking to assist me in pre-term paper review and its publishing in next issue of a journal.

The revisions will be made in accordance with journal's recommendations and guidelines in a shortest time possible and in an excellent quality.

Thank in advance.
Hope to hear from you soon.

Sincerely yours, I* U* S*

6.5. Checklist for the Submission of the Final Version of a Scientific Manuscript

1. FILES REQUIRED FOR SUBMISSION

	TITLE PAGE - title not exceeding 56 characters, written entirely in capital letters.
	TITLE PAGE - full names of all authors, including institutional affiliations (with postal addresses and email addresses).
	TITLE PAGE - clearly identified corresponding author, including telephone number and email address (with country code).
	TITLE PAGE - structured abstract not exceeding 250 words.
	TITLE PAGE - up to 6 keywords.
	TITLE PAGE - author biography(ies), including author name(s), institutional affiliation(s), and a brief description of research interests. Maximum 75 words per author.
	Manuscript - length between 6,000 and 8,000 words at the initial submission stage (including references, tables, and figures).
	Anonymous manuscript - should not reveal the identity of the author(s).
	Manuscript - tables and figures embedded within the manuscript file.
	HIGHLIGHTS - from 3 to 5 bullet points, each not exceeding 85 characters including spaces. Highlights should read as a concise presentation focused on the main content of the manuscript.
	Author Contributions Statement: Conceptualization; Data Curation; Formal Analysis; Funding Acquisition; Investigation; Methodology; Project Administration; Resources; Software; Supervision; Validation; Visualization; Writing - Original Draft Preparation;

	Writing - Review and Editing. The author contribution statement should be formatted by listing the author names first, followed by the corresponding contribution role(s).

2. FORMATTING

	Abbreviations should not be used, except for universally recognized terms.
	Page numbers should be included in the manuscript file in the lower-left corner.
	Double line spacing should be used throughout the manuscript; text should be left-aligned with a ragged right margin.
	Spelling should consistently follow either American English or British English conventions (not a combination of both).
	Paragraph length should not exceed approximately 15 lines (roughly 125–200 words).
	Manuscript formatting should comply with APA guidelines. The manuscript structure, content organization, use of double line spacing, reference formatting (including correct capitalization, italics, punctuation, indentation, and spacing), and all other formatting elements should conform to APA standards.

3. ELEMENTS OF THE COVER LETTER

	In the case of a revised manuscript: include RESPONSES TO ALL COMMENTS provided by the editor and reviewers.
	Acknowledgements.
	Funding sources.
	Statement of interests.
	Research data availability statement.
	If blinded citations are used in the manuscript text: REFERENCES UNBLINDED.

	If the submitted manuscript forms part of a larger project or research program: provide a DESCRIPTION OF THE LARGER PROJECT and explain how the submitted work relates to other publications or manuscripts currently under preparation.
	The manuscript should be checked for overlap with other publications. Similarity with previously published work by the submitting author(s) should be minimal. Editors should be informed about any related sources connected to the manuscript (e.g., dissertation, report, conference paper, etc.).

	A graphical abstract is strongly recommended.
	Supplementary artwork may also be provided.

4. CHECK: DOES MY MANUSCRIPT COMPLY WITH THE JOURNAL'S PUBLICATION POLICY?

	My study constitutes empirical research.
	My work is not focused on the construction of measurement instruments. The journal does not publish manuscripts devoted exclusively to the development and validation of measurement instruments.
	My manuscript is situated within the international scholarly literature. The journal does not publish manuscripts addressing only local or practical issues unless they are theoretically grounded or connected to broader global perspectives.
	My study is not focused exclusively on methodology. The journal does not publish manuscripts devoted solely to research methodology.
	My study does not rely exclusively on questionnaire data. The journal does not publish manuscripts based solely on self-report questionnaire data.

5. CHECK: DOES MY MANUSCRIPT INCLUDE ALL REQUIRED CONTENT ELEMENTS.

5.1 Literature Review

	The literature review addresses all relevant concepts included in the research questions, relates these concepts to the existing body of literature, and demonstrates how the present study extends current knowledge in the field.
	Whenever possible, the literature review includes effect size indicators (e.g., correlations, coefficients, and related statistical measures).
	Recommended: the literature review should include a graphical representation of the theoretical model (i.e., the relationships among variables) underlying the study.

5.2 Method and Analysis

	The rationale for participant recruitment and selection is clearly presented and described in sufficient detail to allow evaluation of the scope of generalizability.
	Assignment to conditions is clearly specified (e.g., individual participants, intact classes).
	The sample size is justified, for example, through a power analysis.
	A description of ethical procedures and Institutional Review Board (IRB) approval is provided.
	MATERIALS: INDEPENDENT VARIABLES
	The manuscript includes a description of the design principles and their operationalization for all interventions or conditions. Additional visual representations may also be considered. Authors of design-based research are encouraged to present the design principles in a clearly identifiable section of the manuscript.
	Sufficient information is provided regarding implementation fidelity across all conditions, including control conditions and manipulation checks.

	MATERIALS: MEASUREMENT OF DEPENDENT VARIABLES
	Reliability indicators for coding procedures are reported for all measures presented in the Results section.
	For qualitative studies, a clear description of the data reduction and coding procedures is provided.
	Reliability indices are reported for all measures presented in the Results/Analysis section.
	ANALYTIC STRATEGY
	Data management procedures are described, including outlier screening and treatment of missing data.
	Explanations are provided regarding how the data were analyzed in order to generate the reported results.
	If the data are nested, multilevel data analysis is assumed by default. This applies, for example, to assigning intact classes to conditions (participants nested within groups) and/or multiple measurements nested within participants. Alternative analytic approaches may also be acceptable; however, in such cases, a clear justification supporting the validity of the chosen alternative approach should be provided.
	A subsection devoted to preliminary analyses is included. This section clarifies the order in which results are presented and reports analyses of potential confounding factors (e.g., baseline differences between conditions on relevant variables).

Self-Assessment Checklist:

Final Report:

	Verification Item	
1	A folder with the order number has been created (**120**)	
2	The formatted manuscript (**120 formatted.docx**) has been saved in the folder.	
3	All accompanying files required by the journal guidelines have been saved in the folder, including the title page, copyright agreement, cover letter, and related documents (e,g. **title page**.docx, **copyright agreement**.docx, **cover letter**.docx …)	

Intermediate Report:

	Verification	
1	Verification that the journal requirements for manuscript formatting have been identified.	
2	Verification that the formatting of author names has been standardized (if only first and last names are used for one author, the same format should be applied consistently to all authors).	
3	Verification that the formatting of affiliations has been standardized (institution and country names should be unified; multiple variants of the same institution or country name should not be used).	
4	Verification that the corresponding author information has been inserted.	
5	Verification that the formatting of the abstract has been checked.	
6	Verification that the formatting of keywords has been checked.	
7	Verification that the formatting of the manuscript title has been checked.	

8	Verification that the formatting of section headings has been checked.	
9	Verification that the citation formatting style has been checked.	
10	Verification that the placement and formatting of tables and their captions have been checked.	
11	Verification that the placement and formatting of figures and their captions have been checked.	
12	Verification that the formatting of the reference list (bibliography) has been checked.	
13	Verification that all in-text citations are included in the reference list.	
14	Verification that author names in citations correspond correctly to the entries in the reference list.	
15	Verification that publication years in citations correspond correctly to the entries in the reference list.	
16	Verification that the manuscript complies with the permitted number of figures, tables, references, words, and/or characters.	
17	Verification that the manuscript has been checked for Russian-language insertions within the text and figure captions.	
18	Verification that indentation, line spacing, formatting of volumes and issues in the reference list, subsection headings, text color, font formatting in figure labels, absence of unnecessary hyperlinks and comments, and table alignment are consistent throughout the manuscript.	
19	Verification of the correct use of dashes, hyphens, commas, and periods.	
20	Verification that there are no unnecessary spaces throughout the manuscript.	

Final Report:

	Verification	
1	Verification that examples of articles published in the latest issue of the target journal have been reviewed.	
2	Verification that all accompanying files required by the journal guidelines, including the title page, copyright agreement, cover letter, and related documents, have been prepared.	
3	Verification that the correct journal title has been inserted into the cover letter template.	
4	Verification that, after completion of the formatting process, the document was saved and closed, reviewed again after a short interval, and checked for final accuracy.	
5	Verification that the manuscript formatting is correct.	
6	Verification that an archive containing the manuscript folder and all associated files has been saved.	
7	Verification that the manuscript has been submitted to the journal.	

Section 7. Preparation of the Final Version (FV) of the Manuscript

Comprehensive verification following review by all co-authors and the translator:

- author information;
- funding information;
- citation formatting;
- implemented revisions;
- confirmation of the correct manuscript file;
- submission deadline.

Verification of all manuscript components:

- confirmation that all sections of the manuscript are included;
- confirmation that the entire manuscript has been translated;
- absence of unclear fragments (e.g., strings of symbols or corrupted text);
- the manuscript text should not contain colored formatting. Only tables or figures may appear in color;
- text occasionally appears in gray and should be converted to black.

Formatting requirements (unless otherwise specified in the journal guidelines):

- A4 page format;
- margins/header-footer settings of 1 inch or 2.54 cm;
- Times New Roman font;
- 12-point font size;
- no spacing between paragraphs;
- double line spacing;
- justified text alignment.

Author information:

- number of authors;
- order of authors;
- institutional affiliations of the authors (single or multiple);
- order of institutional affiliations;
- identification of the corresponding author;
- email address of the corresponding author.

Declarations:

- see the section “Declarations”;
- statements regarding funding and conflicts of interest must always be included, even when none exist.

Abstract:

- the abstract should be presented as a single continuous paragraph (except in cases where a structured abstract is required);
- in the initial formatting stage, no content should be shortened or omitted.

Keywords:

- keywords should generally be separated by semicolons;
- keywords should be arranged in alphabetical order.

Citation:

- All sources included in the reference list must also be cited within the text.
- When multiple studies are cited consecutively, they should preferably be arranged in alphabetical order.
- Author surnames must be presented consistently both in the reference list and in the in-text citations.
- Publication years must correspond exactly in both the reference list and the in-text citations.
- The required citation style must be followed consistently. If the journal does not specify a citation style, authors should refer to articles published in that journal. If the target journal for the final version has not yet been determined, APA 7th edition style should be used.

Reference List (unless otherwise specified in the journal requirements):

- See the section “Citation.”
- The Instructions include a separate file containing examples of reference formatting. If the formatting requirements are unclear, consult this file.
- No reference entries should be removed. If there is uncertainty regarding formatting, clarification should be sought.
- References should be arranged in alphabetical order.

Equations:

- All equations must be editable; equations should not be inserted as images.

Tables:

- All tables must be referenced within the text.
- Decimal numbers in English-language manuscripts should be written using a period rather than a comma.
- According to APA 7th edition guidelines, tables should not contain vertical lines and should include only a minimal number of horizontal lines.

Figures:

- All text within figures must be presented in English.
- Ideally, figures in the final manuscript file should remain editable whenever possible.
- Figures are often uploaded as separate editable files (e.g., Excel files). In such cases, the figures are translated and remain editable. In some instances, translations are provided below the figures; therefore, previous manuscript versions should be checked, as editable figures may exist in earlier files.
- A separate archive containing figures in JPEG or TIFF format with a resolution of 300 dpi should be prepared.
- Text in editable figures should use Times New Roman font in black color.
- All figures must be referenced within the text.

Section 8. Submission of the Manuscript through the Journal's Online Platform

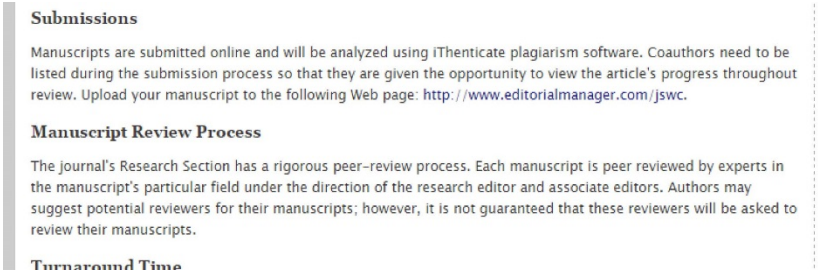
Checklist Before Submission (please verify that all items have been completed):

1. The manuscript is fully prepared for submission (revised, translated, and with references properly formatted).
2. Complete information for all authors has been prepared.
3. Figures are finalized (in .tif or .eps format; all information presented in English; high resolution).
4. The cover letter has been prepared.

Submission Process:

- Visit the journal website.

- Locate the "Submit Article" section. This is commonly labeled as "Submit the Article," "Online Submission," or "Manuscript Submission." If no separate submission tab is available, locate the "Instructions for Authors" section and carefully review the guidelines regarding online manuscript submission, then follow the provided link (see example below):



Submissions

Manuscripts are submitted online and will be analyzed using iThenticate plagiarism software. Coauthors need to be listed during the submission process so that they are given the opportunity to view the article's progress throughout review. Upload your manuscript to the following Web page: http://www.editorialmanager.com/jswc.

Manuscript Review Process

The journal's Research Section has a rigorous peer-review process. Each manuscript is peer reviewed by experts in the manuscript's particular field under the direction of the research editor and associate editors. Authors may suggest potential reviewers for their manuscripts; however, it is not guaranteed that these reviewers will be asked to review their manuscripts.

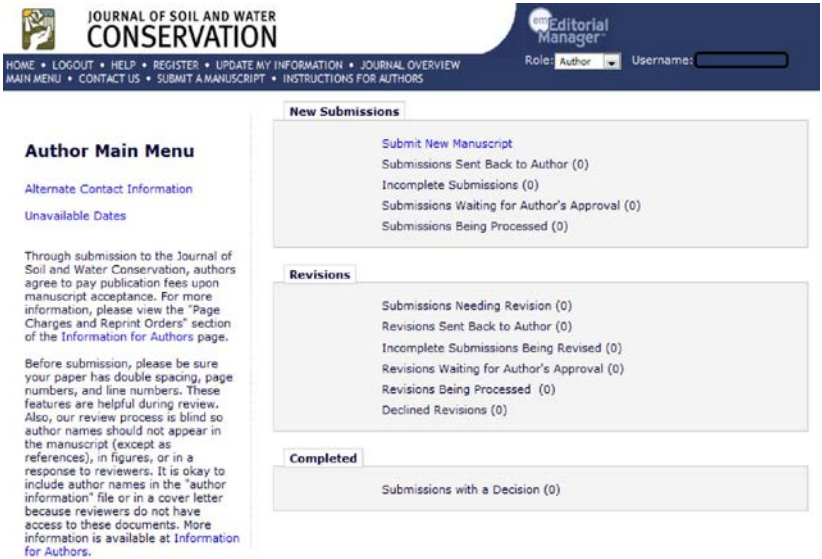
Turnaround Time

- Complete the registration process by providing an email address and creating a password.

A personal account will then be created.

- After registration, begin **the manuscript submission process through the personal account.**

Important: Some journal submission platforms provide two types of account access: 1. Author; 2. Reviewer. Always select access through the "Author" account. Submission through the "Reviewer" account does not allow manuscript submission.

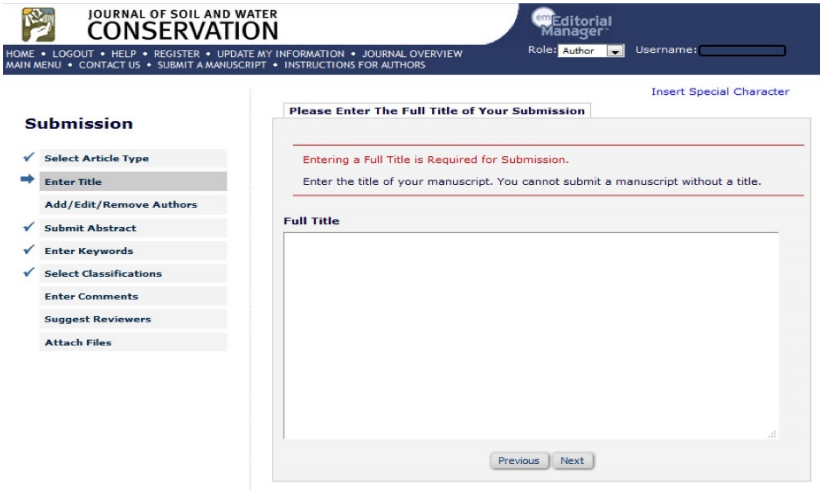


- Select **Submit New Manuscript**

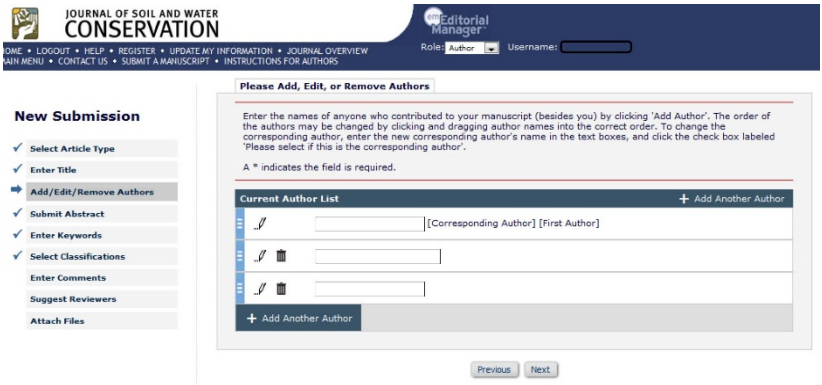
- Select "Research Paper".

However, some submission systems may use alternative designations for scientific manuscripts:

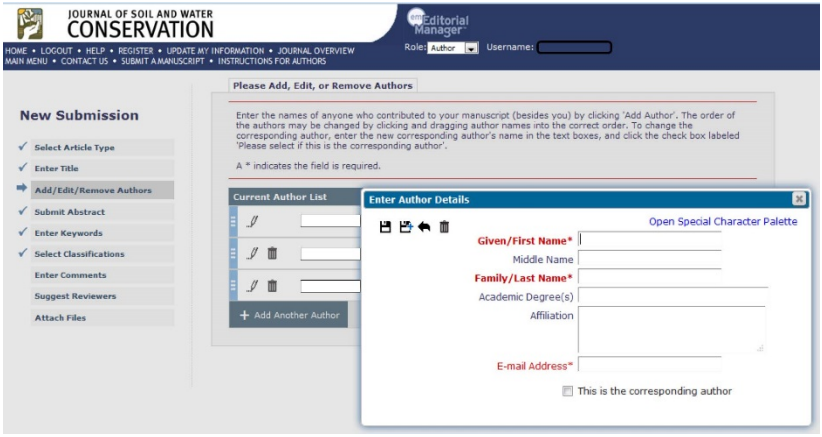
Article;
Manuscript;
Regular paper;
Original article.



- Enter the title of the article



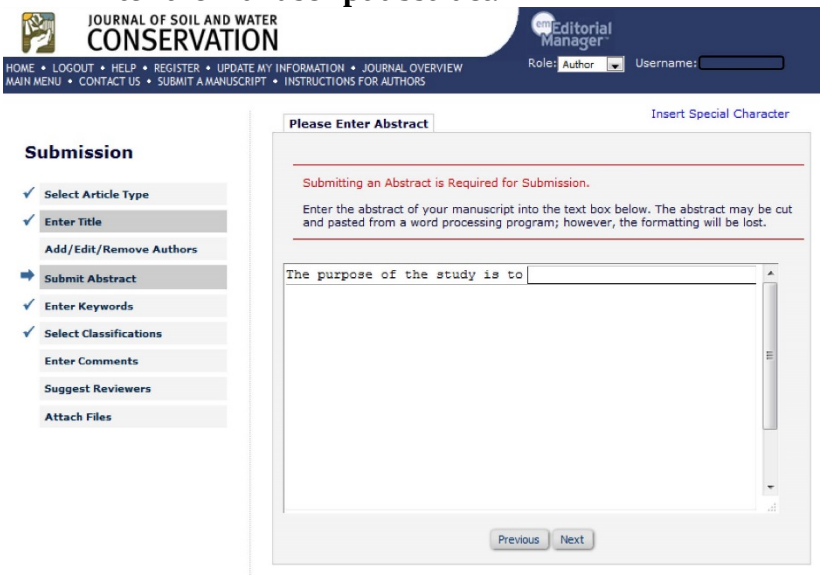
-Enter information about the authors



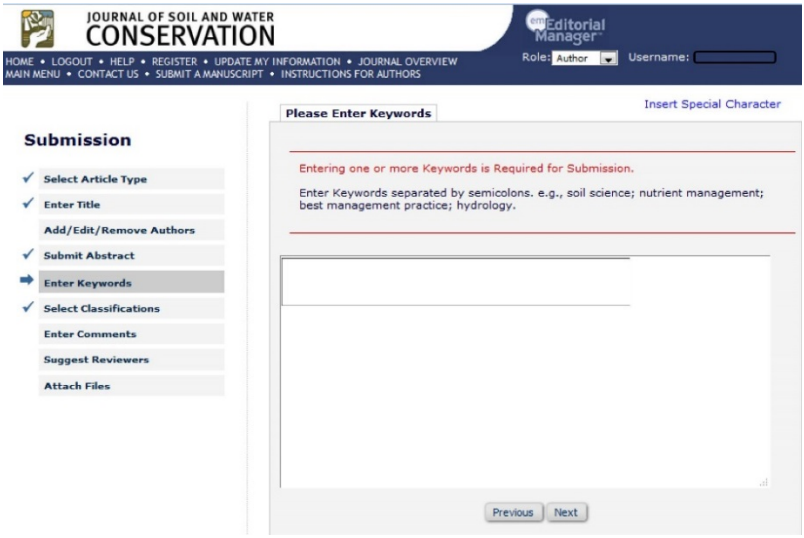
In this submission system, it is only necessary to provide the author's first name, last name, and email address. Each author must have a separate email address.

If an author does not have an email address, one should be created.

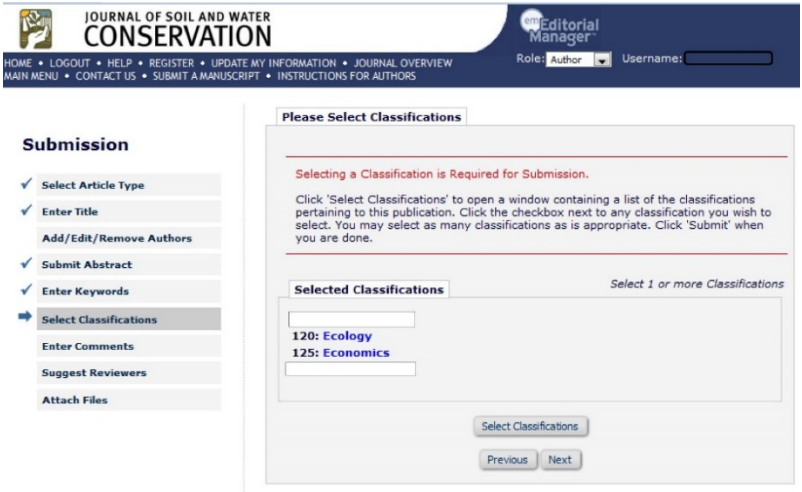
- Enter the manuscript abstract.

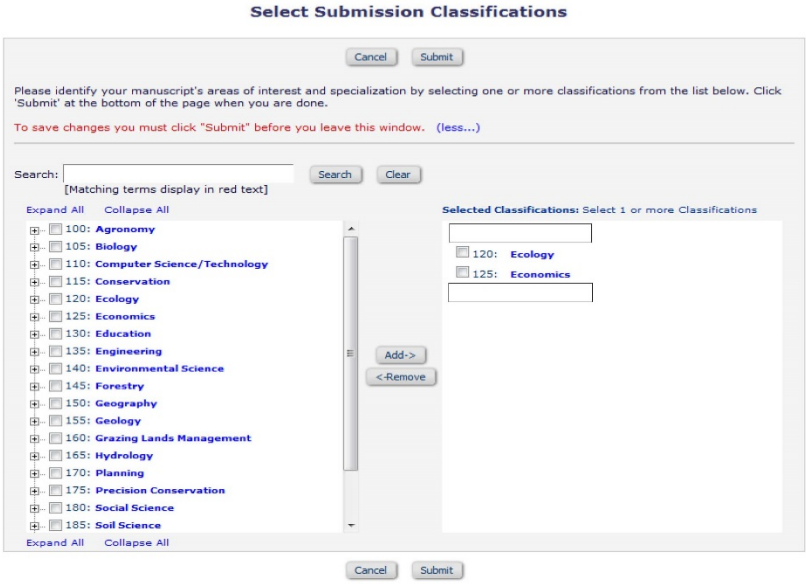


- Enter keywords. In this system, keywords are written after a semicolon.

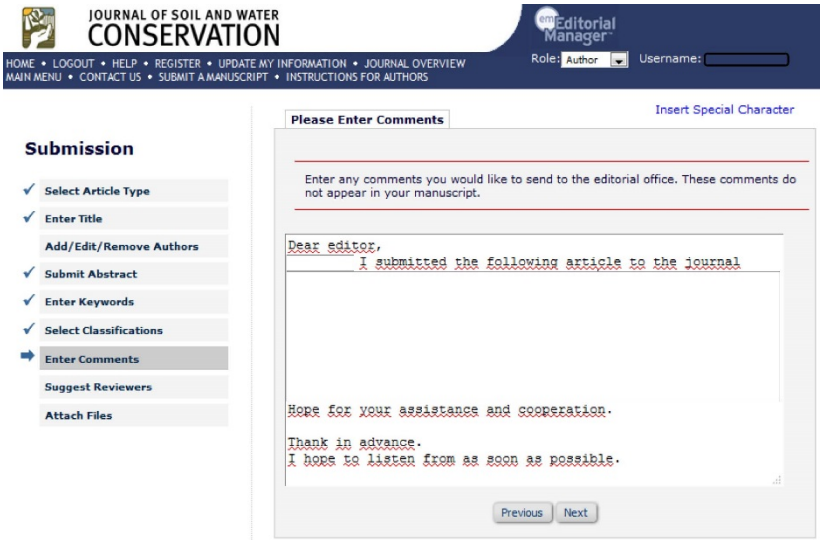


- Select the classification categories. These are the subject areas that most accurately reflect the content of the manuscript. Based on the selected classification, the journal system automatically determines the appropriate editor and potential reviewers for the submission.

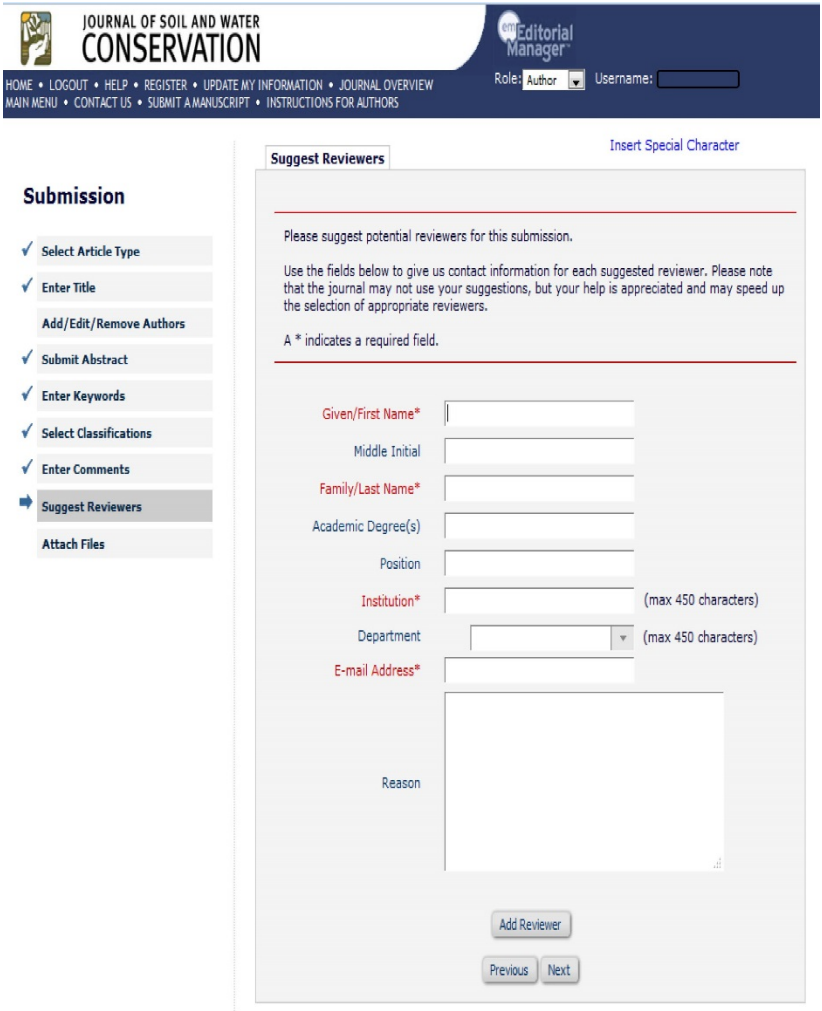




- Letter to the Editor. Prepare a standard cover letter (see the template).



- **Complete the reviewer information section.** Fields highlighted in red are mandatory. In most cases, providing a reason for reviewer selection is optional.



- Depending on the journal, additional fields may need to be completed, including information regarding the manuscript word count, number of pages, number of tables, figures, and related details (all necessary information should be taken from the manuscript file).

- Always select the checkbox confirming that "this manuscript has been submitted exclusively to this journal."

- Always select the checkbox confirming that "the authors have no claims or conflicts of interest to declare."

- Attach all required files (Attach Files):

Cover letter
Manuscript
Table
Figure

- Depending on the journal platform, the following additional documents may also be mandatory:

Declaration to the editor
Conflict of interest
Form of contribution

- Carefully verify all entered information and uploaded files. If all information is correct, confirm the submission. The manuscript will then be successfully submitted through the journal's online platform.

Save all submission-related information and records, as they may be required repeatedly throughout the editorial and review process.

Section 9. Monitoring and Verification of Manuscript Status in the Journal

It is necessary to regularly check journal submission systems and correspondence email accounts to determine whether a response from the journal has been received.

In some cases, the journal editor may return the manuscript for various reasons (this information may appear either in the journal system or via email correspondence). In such situations, the reason for the return should be carefully examined:

1. The manuscript must be shortened.
2. Certain required information is missing.
3. The manuscript formatting is incorrect.

It is also necessary to send periodic follow-up inquiries if no response has been received for an extended period, generally once every 2–4 weeks. However, authors should also consider previous responses from the journal. For example, if the editor indicated that the review process requires 2–3 months, excessively frequent reminders should be avoided.

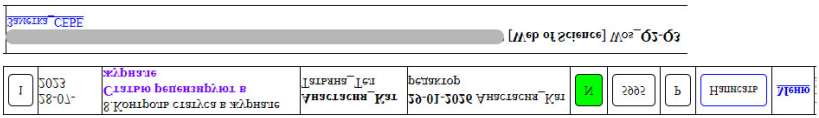
Journal rejections should also be monitored carefully.

If the rejection is standard in nature (e.g., the manuscript does not fit the journal scope, the journal receives a high volume of submissions, etc.), the manuscript may simply be submitted to another journal.

However, if the rejection concerns the quality of the manuscript itself, the manuscript should first be revised and improved before further submission attempts.

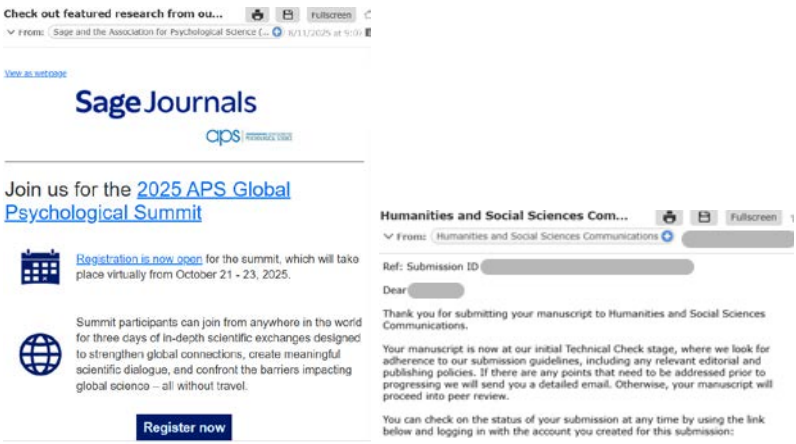
The following example demonstrates the sequence of actions required for monitoring manuscript submission to a journal or multiple journals.

There is a record regarding the manuscript topic and indexing database:

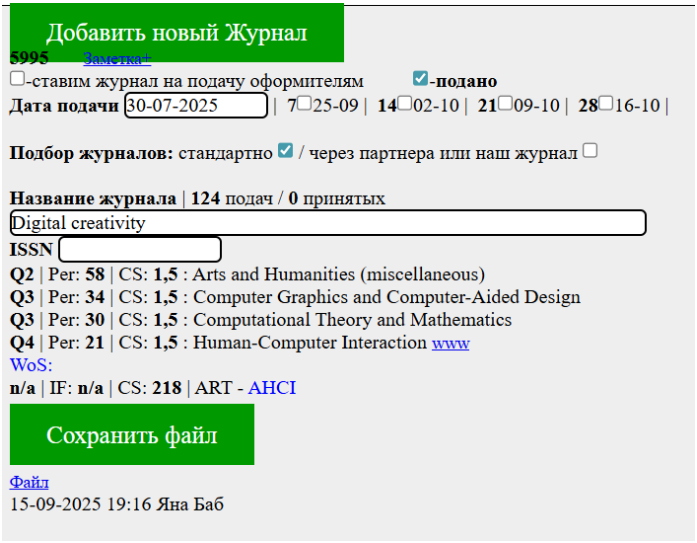


Access the active email account of the manuscript author. If the manuscript has multiple authors, access the email accounts of all authors. Review all correspondence received from journals.

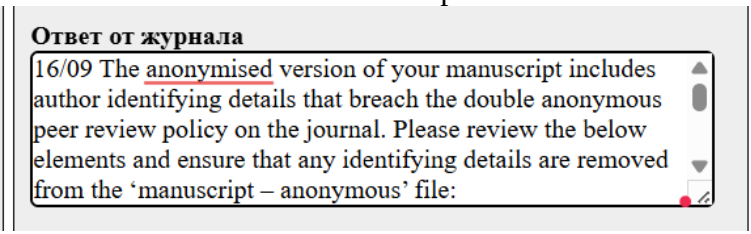
If the received message is spam, a submission confirmation, or a notification regarding manuscript status tracking, simply open the email so that it is no longer marked as unread.



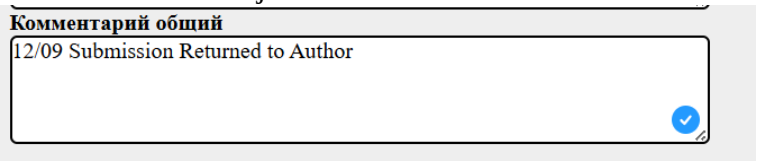
If a message is received requesting resubmission or correction due to incomplete formatting, open the journal submission record and return the manuscript to the technical editor responsible for formatting for further revision and completion.



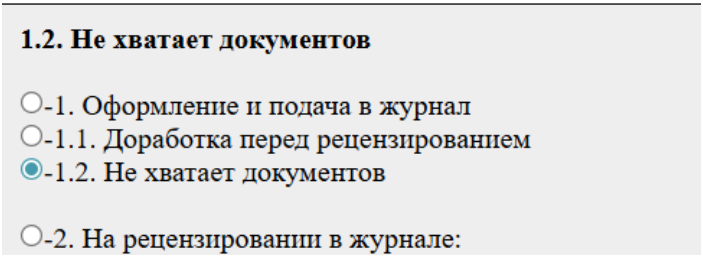
Record the information in the “Response from the Journal” field.



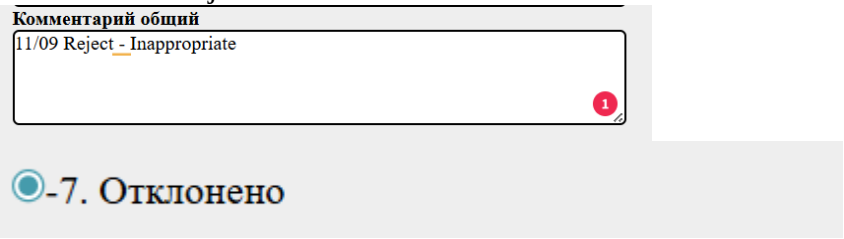
Add an entry in the “General Comment” field for future resubmission to the journal.



Assign the status “Missing Documents” in order to indicate the need for further action, and save the record.



If a rejection letter is received without specific comments, record this information in the system under “General Comment” and assign the status “Rejected.”
Do not copy the entire text of the email; instead, briefly record the reason for rejection.



A journal may also send a request for revision related to the manuscript content. Such comments are usually provided at the end of the journal’s message.

Editor and Reviewer comments:

Associate Editor: The manuscript presents several strengths, including its innovative approach to GPT-powered video games for distance learning in mathematics, a robust randomized controlled trial design, and clear results, such as substantial achievement gains, elevated posttest scores, and improved retention within the experimental group. However, the reviewers identified significant limitations that need to be addressed: the writing requires refinement for clarity, stylistic consistency, and optimized reporting of statistical results (e.g., inclusion of F and η^2 values for ANOVA and better integration of figures/tables); the literature review needs to evolve from a descriptive listing to a critical synthesis, ensuring that recent sources are verifiable across major indices; ethical considerations should be expanded to cover risks such as excessive screen time or equity concerns; the theoretical basis, especially around constructivist and sociocultural frameworks and terms such as "personalized learning," needs to be strengthened with adequate citations and conceptual precision. Methodological transparency should be improved, including justification of the platform's relevance, more complete descriptions of learning scenarios, and more in-depth statistical analyses. Because of these substantial issues, we request major revisions: authors should respond individually to each reviewer's comment, either by conducting full revisions or, if this is not possible, by explicitly acknowledging unresolved points in a section dedicated to limitations. The full verbatim comments from both reviewers are presented below:

This information should be forwarded to the author for further revision of the manuscript.

Reviewer and editor comments should be added to a Word document, converted into an archive file, and uploaded into the system together with the revision notification.

Create a record indicating: “Journal [name] requested manuscript revision.” If a deadline is specified, include the final date for resubmission to the journal. Add a note stating that the comments are included in the archive.

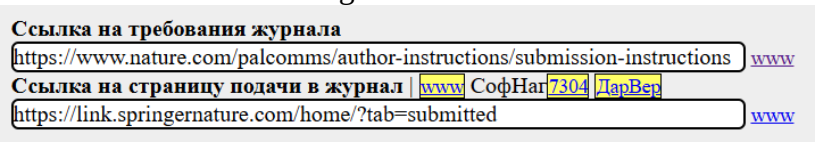
If the rejection contains specific comments, all related information should likewise be collected and transferred for further decision-making:

1. Revise the manuscript, if revision is considered worthwhile, and negotiate the possibility of resubmission with the journal.
2. Decline further revision and discontinue work with the journal.

If the manuscript has been returned for revision (either formatting-related or content-related) or rejected, all such information must be recorded in the journal record. A decision should then be made regarding whether further work with the journal is appropriate.

Unread emails should never be ignored. Every message must be reviewed, recorded in the system, and processed through the appropriate follow-up actions.

Verification of the journal system through the “Link to the Journal Submission Page”:



Open the submission system for each journal in which the manuscript is still under review, as the journal may have failed to send a notification or the email may have been lost. If the status remains current, record the updated status in the journal record under “General Comment”:
“18/09/2025 - manuscript under review” (using the current date).

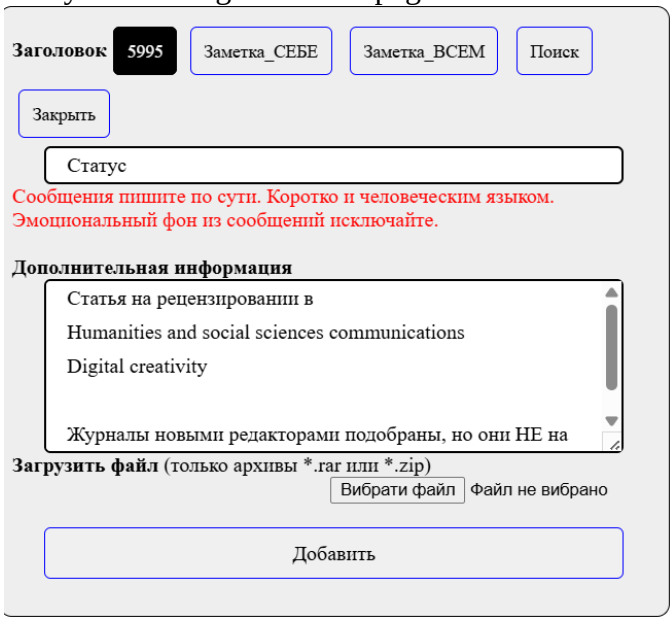
If the manuscript was submitted directly to the journal or editor via email and no response has been received within two weeks, send a follow-up inquiry regarding the manuscript status.

The following entries should then be recorded in the system:

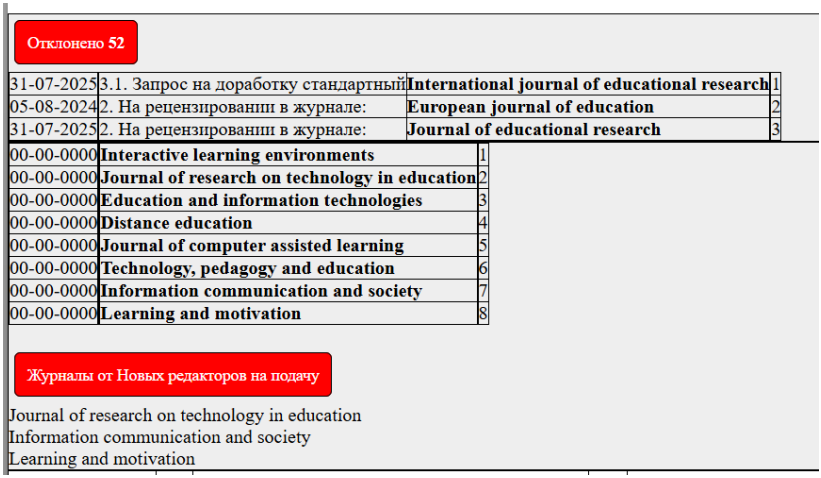
13/11 - submitted by email
15/11 - status inquiry sent
07/01 - status inquiry sent
12/02 - status inquiry sent
18/09 - no response received

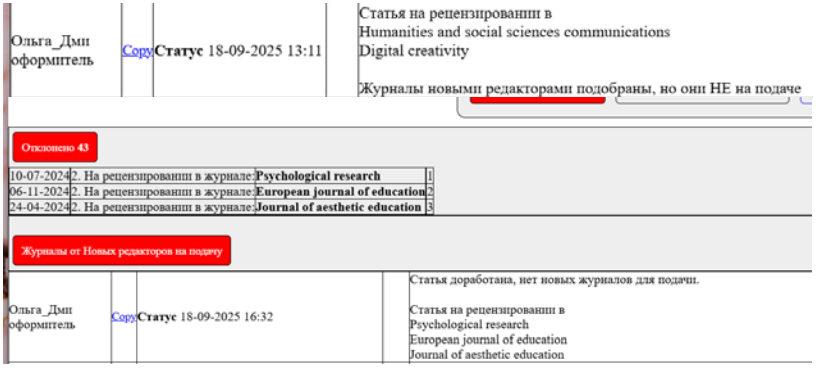
If the journal does not update the manuscript status for an extended period, an inquiry may be sent either via email or through the journal submission system.

After completing all checks, record the updated status in the system through the main page.



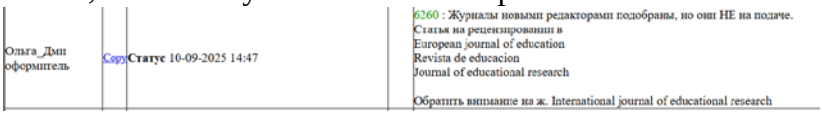
Record which journals are currently under review and whether there are journals available for future submission.



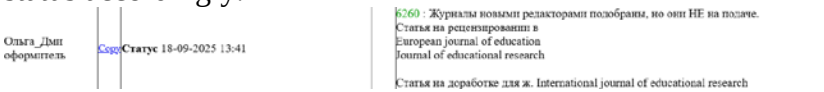


If the manuscript has been returned for revision or accompanied by comments, add a note such as: “Attention should be given to this journal.”

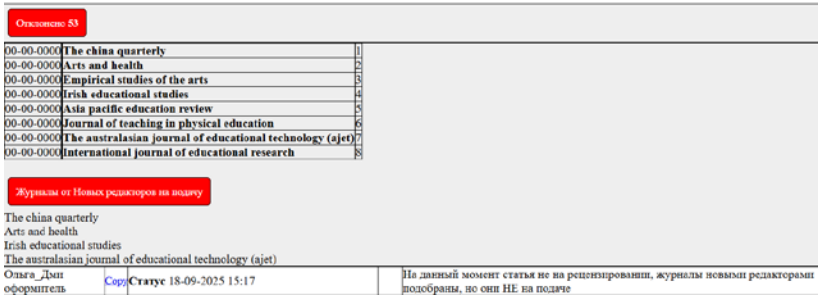
All items requiring attention should be recorded as separate entries, followed by an overall status update.



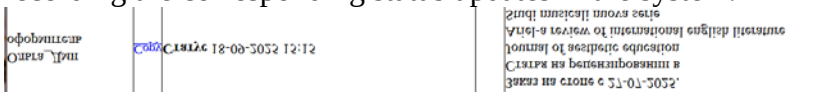
If the manuscript is already undergoing revision, record this status accordingly:



If there are no journals currently reviewing the manuscript, this should also be indicated:



If the project/order is on hold (“STOP” status), this should be recorded as well. If there are journals where the manuscript is still under review, continue checking email correspondence and journal submission systems as usual, while recording the corresponding status updates in the system.



Section 10. Working with Reviewers

10.1. Comments and Recommendations for Writing Peer Reviews

A reviewer evaluates a manuscript in accordance with the journal's requirements, provides detailed comments and recommendations, and identifies the strengths and weaknesses of the manuscript. The average length of a review is approximately 400 words.

Most reviews are submitted through online journal systems and involve completing designated forms and providing written comments.

Reviewer comments are generally divided into two categories:

1. Comments for the Editor - in this section, the reviewer communicates their overall impression of the manuscript to the editor, evaluates its degree of novelty and suitability for publication, and outlines its main strengths and weaknesses.

2. Comments for the Author - in this section, the reviewer explains to the author what aspects of the manuscript require improvement and specifies the revisions that should be made.

The primary requirements for a reviewer are awareness of current trends within the relevant research field and the ability to adequately assess manuscript quality. A reviewer must be capable of identifying the weaknesses of the study.

Typical questions that reviewers are expected to address in their comments include:

1. Is the manuscript innovative and original?

2. Are the content and conclusions valid, supported by data, and consistent with the stated objectives?

These are the principal questions upon which the decision regarding acceptance or rejection is based.

If the manuscript satisfies these criteria, the reviewer may additionally consider the following questions:

1. Does the title accurately reflect the content of the manuscript?
2. Is the abstract sufficiently informative, particularly when read independently?
3. Are the research objectives appropriately formulated in relation to the subject of the study?
4. Is the description of materials and methods sufficiently detailed to allow replication of the study?
5. Are the results presented clearly?
6. Does the manuscript formatting comply with the journal requirements?
7. Is the manuscript length appropriate for its content?
8. Are all illustrations necessary, complete (including captions), and clearly presented?
9. Is the reference list sufficient and compliant with the journal requirements?

There is no obligation for reviewers to answer every question individually. Each review should be individualized rather than formulaic. If a reviewer does not comment on a specific point, the editor will generally assume that no concerns exist regarding that aspect. Therefore, attention should be focused primarily on the strengths of the manuscript and on those elements that require revision.

There are four principal editorial decisions regarding a manuscript:

1. Accept - accepted without revisions (very rare).
2. Accept with Minor Revision - accepted subject to minor revisions.
3. Accept with Major Revision - accepted subject to major revisions (typically requiring revision of approximately 30–40% of the manuscript).
4. Reject - rejected.

A decision of “Accept” is generally reserved only for manuscripts of exceptionally high quality and is therefore extremely uncommon. Nearly all manuscripts require revision prior to publication.

The preferred outcome of the peer-review process is “Accept with Minor Revision,” whereas manuscripts of lower quality may receive “Accept with Major Revision.

Such outcomes are possible when the reviewer:

1. Clearly explains to the editor why the manuscript merits consideration for publication by briefly describing its contribution to the relevant scientific field.

2. Clearly specifies the revisions necessary for the manuscript to become suitable for publication.

An example of reviewer comments from a high-impact-factor journal is provided below, where the editorial decision was “Accept with Major Revision” (although the manuscript was close to rejection).

Reviewer #1.

This manuscript is of interest from the perspective of applying the Dual Boundary Element Method (Dual BEM) and three-dimensional (3D) modeling to the study of problems associated with holes and cracks. However, prior to consideration for publication, the following issues should be addressed:

(1) The authors refer to modifications in the application of the Dual BEM. Which specific component of the BEM has been modified?

(2) The authors appear to be insufficiently familiar with the full historical development of the Dual BEM. Please refer to the study * entitled “*”. The following excerpt from this work is particularly relevant:

“Numerous approaches have proposed various procedures, including special crack treatment techniques by * [18], as well

as methodologies for crack propagation [19]. * and * [20,21] introduced the concept of the dual boundary integral equation method, combining the standard boundary integral equation with its derivative to generate independent equations capable of overcoming the problem of *. They demonstrated how the displacement boundary integral equation (DBIE) may be differentiated and how Hooke's law can be applied to derive the traction boundary integral equation (TBIE). * and * [22] were the first to solve the system of equations formed through the combination of these two integral equations within the context of the Darcy problem."

In other words, the studies by *, *, and * are not the original sources. This issue should be properly acknowledged and explicitly emphasized in the revised manuscript.

With regard to the key scientific contributions in this field, the following studies should be considered and added to the reference list:

[20] *

[21] *

[22] *

(3) The expression "*" may be replaced with "*".

(4) The phrase "classical BEM" may be replaced with "conventional BEM."

(5) The relationship between the Dual BEM and the displacement boundary method is discussed in the following publication: *.

(6) What does "hvp" refer to? Did the authors intend to use "HPV" (Hadamard Principal Value)?

(7) The influence function symbols L and M in Equation (7) are identical to those reported in the studies by * and * (1988), as well as * and * (1999).

(8) On what basis are the authors confident in the validity of their results without comparison to the findings of other studies?

Overall, the manuscript has merit in terms of applying the Dual Boundary Element Method to hydraulic fracture problems.

I would recommend the manuscript for publication, provided that the authors revise it in accordance with the comments presented above. A second round of peer review is required.

Reviewer #2.

(I) The content of the manuscript does not correspond to either the stated title or the claimed modification of the Boundary Element Method (BEM). The study employs the conventional Dual BEM. The equations, approximations, and quadrature rules for the influence coefficients are standard. The fact that the pressure within the crack is calculated using additional fluid equations in solving the hydraulic fracture (HF) problem merely represents the addition of fluid-related equations and does not constitute a substantive modification of the Dual BEM itself. It would therefore be more appropriate for the manuscript to describe the application of the Dual BEM to the hydraulic fracture problem rather than referring to a modification of the BEM.

(II) The abstract and introduction indicate that the authors are not sufficiently familiar with modern BEM approaches for three-dimensional homogeneous elastic joints containing cracks, cavities, inclusions, and arbitrary contact conditions at the interfaces of structural components and cracks. At present, for the homogeneous elastic medium considered in this study, there is no need to complicate the problem through the combination of singular and hypersingular equations within the framework of the conventional dual method. A hypersingular equation without a singular integral is sufficient for the treatment of arbitrary cavities and cracks by placing within the cavity an elastic body possessing elastic properties identical to those of the surrounding medium, under stress conditions analogous to those prescribed on the cavity surface (sharp

displacement discontinuities inside the structure are then easily captured). In such a formulation, the only unknown density in the hypersingular integral is the crack opening displacement vector, which is appropriate for cracks but not for cavity surfaces. The authors have overlooked a substantial number of established methods capable of solving a much broader class of problems than those considered in the present manuscript. The authors are advised to examine recent studies such as *, which provide a detailed overview of current advances in this field.

(III) Based on the material presented in Section 4, it also appears that the authors are not sufficiently familiar with contemporary methods for hydraulic fracture modeling. In particular, if lag effects are neglected in the assumed case, the pressure becomes negative and tends toward infinity because * near the crack tip under the assumption of a Newtonian fluid. Consequently, the boundary condition cannot be satisfied. Furthermore, the boundary condition (and the resulting formulation) is insufficient for a borehole of nonzero radius, since the boundary condition should be applied at every point along the circumference. In addition, the velocity equation in the form * introduces an indeterminacy of the type *, because both the flow rate and crack opening vanish at the fracture front when lag effects are neglected. Therefore, all fluid-related conditions employed in the manuscript are incorrect, which calls into question the numerical results presented in Chapter 6 with respect to fluid flow.

(IV) There is an inconsistency between the justification of the borehole width and the numerical examples provided. In practice, there is no necessity to account for borehole geometry in hydraulic fractures whose dimensions exceed the borehole size by more than a factor of five within the * region. Conversely, for smaller dimensions corresponding to fracture initiation, the disk-shaped initial fracture model employed in this study is unrealistic due to the strong influence of perforation

geometry on the initial fracture shape and its subsequent propagation.

(V) The examples presented in Section 6 for a rock mass with all stress components on the order of 10 MPa appear rather unusual. The authors should clarify to which practical hydraulic fracture or rock mechanics problem these examples correspond.

(VI) The manuscript contains a number of deficiencies in preparation and presentation, including unjustified capitalization in figure captions and reference formatting, omitted conditions for tangential stresses at infinity, unexplained notations, and related issues. The reviewer does not consider it necessary to elaborate on these shortcomings at the present stage of review.

Nevertheless, considering that the authors are attempting to address a difficult applied problem, they should be given an opportunity to correct the above-mentioned deficiencies through the preparation of a substantially revised version of the manuscript.

Reviewer #3. The objective of this manuscript is to generalize the Dual Boundary Element Method (Dual BEM) for solving the complex problem of crack propagation under realistic conditions.

To achieve this objective, the authors applied the Dual BEM to the analysis of three-dimensional crack propagation under fluid loading conditions. The Dual BEM is a well-established computational method described in the works of * et al. and * et al. In this regard, I do not perceive sufficient originality in the present manuscript.

Furthermore, the proposed approach is somewhat unclear. The authors employed the traction integral equation (9) together with displacement discontinuities. For the evaluation of stress intensity factors in Equations (14)–(16), knowledge of the displacement discontinuities alone is sufficient. This is correct. However, there is no necessity to determine displacements on

both crack surfaces, and therefore the application of the Dual BEM is not required. Why, then, do the authors emphasize the use of the Dual BEM if its application is unnecessary in this context?

The present manuscript represents merely an analysis of a relatively straightforward application of established computational methods to solve the problem of three-dimensional crack propagation under distributed loading. Unfortunately, this is insufficient to classify the manuscript as an original research contribution.

10.2. Evaluation Forms Used by Different Journals

Journals use their own peer-review evaluation forms. By examining these forms, it becomes clear which aspects are emphasized by reviewers and editorial boards. Therefore, authors should carefully analyze the substantive content of such review forms and pay close attention to the elements that are expected to be included in the manuscript. Examples are provided below.

Scientific Manuscript Evaluation Form

Manuscript Number:

Submission Date:

Title of the Manuscript:

Reviewer Name:

Reviewer Affiliation:

1. Is the topic under investigation important?

( ) Yes ( ) No

2. Is the manuscript's contribution sufficient and valuable for readers?

( ) Yes ( ) No

3. Are the title and abstract adequate and consistent with the content of the manuscript?

( ) Yes ( ) No

4. Are the introduction and objectives of the manuscript sufficiently developed?

( ) Yes ( ) No

5. Are the methods applied in the experimental section adequate?

( ) Yes ( ) No

6. Are the figures, tables, graphs, and presentation of results necessary and appropriate?

( ) Yes ( ) No

7. Have the research findings been discussed in sufficient detail?

( ) Yes ( ) No

8. Are the statistical methods appropriate and adequate?

( ) Yes ( ) No

9. Are the references used sufficient and appropriate?

( ) Yes ( ) No

RECOMMENDATION (Please mark with an "X")

A. ( ) Accept

B. ( ) May be published after the revisions specified in the manuscript are completed and following evaluation by the editorial board.

C. ( ) May be reconsidered after substantial scientific and structural revisions.

D. ( ) Reject (Please provide a detailed justification).

Corrections have been made to the manuscript ( ).

I would like to review the revised version of the manuscript ( ).

Corrections, suggestions, and questions are attached on page ( ).

On behalf of the Editorial Board, we would like to thank you for your valuable contribution.

Date

Reviewer Comments

Manuscript Evaluation Form

1. MANUSCRIPT CHARACTERISTICS (select one option):

Originality of the work:

Low / Moderate / Acceptable / Good / High

Relevance to the subject area:

Poor / Satisfactory / Acceptable / Good / Excellent

Professional / Practical significance:

Low / Moderate / Acceptable / Good / High

Completeness of the work:

Poor / Satisfactory / Acceptable / Good / High

Acknowledgment of previous scholarship through citations:

Poor / Moderate / Acceptable / Good / Excellent

Structure of the manuscript:

Poor / Satisfactory / Acceptable / Good / Excellent

Clarity of the text, tables, graphs, and illustrations:

Poor / Satisfactory / Acceptable / Good / Excellent

Likelihood of long-term scholarly relevance ("standing the test of time"):

Low / Moderate / Acceptable / Good / High

2. QUALITY AND RIGOR (select one option):

Have you verified the equations and/or statistical analyses (if applicable)?

Yes / No

Are you aware of any prior publications or presentations of this work?

Yes / No

Is the manuscript free from commercial bias?

Yes / No

Is the manuscript excessively long?

Yes / No

3. RECOMMENDATION (select one option):

Outstanding quality

Acceptable

Acceptable with minor revisions

Acceptable with major revisions

UNACCEPTABLE

Please justify your recommendation in the comment sections below.

4. COMMENTS

Your comments will be used to assist the author(s) in revising the manuscript.

Please do not include your name in the comments, as these comments may be forwarded directly to the author(s).

Required revisions prior to publication:

Suggestions that could improve the quality of the manuscript but are not mandatory for publication:

Comments intended exclusively for the editor are considered confidential:

Manuscript Evaluation Form

Please select one option and provide comments.

Title

Good / Needs Improvement

Comments on the Title

Abstract

Good / Needs Improvement

Comments on the Abstract

Keywords

Good / Needs Improvement

Comments on the Keywords

Policy Recommendation

Good / Needs Improvement

Comments on the Policy Recommendations

Introduction and Content

Good / Needs Improvement

Comments on the Introduction and Content

Literature Review

Good / Needs Improvement

Comments on the Literature Sources

Research Question
Good / Needs Improvement
Comments on the Research Question
Methodology
Good / Needs Improvement
Methodological Comments
Data Collection and Presentation
Good / Needs Improvement
Comments on Data Collection and Presentation
Data Analysis
Good / Needs Improvement
Comments on Data Analysis
Results
Good / Needs Improvement
Comments on the Results
Discussion
Good / Needs Improvement
Comments on the Discussion
Conclusion
Good / Needs Improvement
Concluding Comments
Figures and Tables
Good / Needs Improvement
Comments on Figures and Tables
Recommendation
Accept
Minor Revision
Major Revision
Reject
Confidential Comments to the Regional Editor
Comments to the Author

Manuscript Evaluation Form

Comments to the Author (please answer the following questions and/or provide additional recommendations):

1. Is the manuscript logically structured and does it present a concise and coherent sequence of ideas?

2. Does the manuscript describe appropriate research methods, statistical approaches, and interpretations of the results? Can the findings be generalized? Are the conclusions justified? Are the limitations of the study clearly stated?

3. Are the references properly formatted, and does the manuscript follow the Vancouver citation style? Do most references originate from the last 3–5 years? Has the author cited 1–3 articles published in the journal ___ within the last 3 years?

4. Does the manuscript correspond to the aims and scope of the journal ___?

5. What is the quality of the language in terms of grammar, syntax, spelling, and readability of the English manuscript? Does the manuscript demonstrate critical thinking?

6. Are the ideas presented in the manuscript original?

7. Is the information current and relevant?

8. Does this manuscript expand upon and contribute to the body of knowledge previously published in the journal ___?

Confidential Reviewer Comments to the Editor

Evaluation Form

(3 = High / Yes; 2 = Moderate / Satisfactory; 1 = Low)

(Please ensure that additional comments are provided in the evaluation form.)

CONTENT

The title clearly reflects the content of the manuscript 3 2 1

The abstract clearly reflects the content of the manuscript 3 2 1

The introduction clearly presents the research problem 3 2 1

The experimental methods are adequate 3 2 1

The discussion is appropriate and sufficient 3 2 1

The results/conclusions are justified 3 2 1

The reference list is complete and sufficient 3 2 1

PRESENTATION

The quality of the figures and tables is satisfactory 3 2 1

The English language quality is acceptable 3 2 1

OVERALL SCIENTIFIC EVALUATION

Practical significance 3 2 1

Relevance 3 2 1

Technical reliability 3 2 1

REVIEWER ASSESSMENT

Please evaluate the overall scientific quality of the manuscript:

5 - Excellent

4 - High

3 - Moderate

2 - Low

1 - Unsatisfactory

Recommendation

Accept in the current form.

Return to the author for minor revisions.

Return to the author for major revisions.

Reject for the following reasons.

Confidential Comments to the Editor

Comments to the Author

Journal Reviewer Template

Manuscript Number:

Title:

Please evaluate each criterion on a scale from 1 (lowest/poorest) to 5 (highest/best):

No / Partially / Yes

Does the manuscript fit the scope of the journal?

Does the manuscript demonstrate adequate understanding of the subject matter?

Is the literature review appropriate for the field, and does it include a sufficient range of references?

Is the manuscript structure adequate? Is the manuscript well written?

Is the argumentation organized in a logical sequence?

Are the methods and results presented clearly and correctly?

Do the conclusions adequately integrate the other elements of the manuscript?

Are the title and abstract informative and relevant?

Does the manuscript contain novel and significant information?

Is publication justified?

Does the manuscript require language editing/proofreading?

YES / NO

Should the manuscript be shortened?

YES / NO

If yes, please indicate which sections should be reduced (as recommendations to the authors).

What are the primary strengths of this manuscript?

What are the principal weaknesses of this manuscript?

Suggestions to the authors (corrections, revisions, modifications, etc.).

Your recommendation (please select one):

The manuscript should be published under the following title:

1. Accept without revisions.
2. Accept after the specified revisions have been completed.
3. Revise and resubmit.
4. Reject, but recommend submission to another journal.
5. Reject.

Manuscript Evaluation

Please evaluate, using a scale from 1 to 3, the extent to which the highlighted points accurately and substantively reflect the content of the manuscript.

1 = Substantive

2 = Not Substantive

3 = Not Provided

For additional information, please refer to www…/highlights.

Please evaluate, using a scale from 1 to 3, the extent to which the graphical abstract provides an accurate and substantive representation of the manuscript.

1 = Substantive

2 = Not Substantive

3 = Not Provided

For additional information, please refer to www…/graphicalabstracts.

Reviewer Comments to the Author:

Confidential Reviewer Comments to the Editor:

For each question, please use the following scale (mark the appropriate box):

Is there any financial or other conflict of interest between your work and that of the authors?

YES / NO

Should the revised version of the manuscript be returned to the reviewer for further evaluation?

Preferred / Definitely / Not Required

Please note that your recommendation and reviewer report, if submitted together with the manuscript, should include an evaluation of the "Highlights" section and the graphical abstract.

Please provide an honest assessment of the strengths and weaknesses of the manuscript:

Is the manuscript written in a manner accessible to non-specialists?

(Note that technical details intended for specialists are acceptable provided that an accessible summary of the principal findings is included.)

Yes / No

Recommendation

Accept

Minor Revision

Major Revision

Reject

Confidential Comments to the Editorial Office

Comments to the Author

Manuscript Evaluation Form

Manuscript Structure

Article Length:

Number of Tables:

Number of Figures:

Questionnaire Yes / No / Not Applicable

Does the manuscript contain novel and significant information that justifies publication?

Does the abstract clearly and accurately describe the content of the manuscript?

Is the research problem significant and concisely formulated?

Are the experimental and/or theoretical methods described in sufficient detail?

Are the interpretations and conclusions adequately supported by the results?

Are appropriate references to related studies in the field provided?

Is the language acceptable?

Please evaluate the publication priority of this manuscript

(1 = highest priority; 10 = lowest priority).

Please indicate any conflicts of interest that may arise in connection with your review of this manuscript (please indicate "none" if not applicable).

Recommendation

Accept / Minor Revisions / Major Revisions / Reject

Confidential Comments to the Editor

Comments to the Author

Manuscript Evaluation Form

Please select one response.

Scientific Interest: Excellent / Good / Fair / Poor

Clinical Interest: Excellent / Good / Fair / Poor

Methods: Excellent / Good / Fair / Poor

Statistical Issues: Excellent / Good / Fair / Poor

Originality: Excellent / Good / Fair / Poor

Writing Quality (grammar, clarity of presentation): Excellent / Good / Fair / Poor

Length: Excellent / Good / Fair / Poor

References: Excellent / Good / Fair / Poor

Tables: Excellent / Good / Fair / Poor

Figures: Excellent / Good / Fair / Poor

Animal Welfare Concerns: Yes / No

Human Rights Concerns: Yes / No

Expedited Publication Recommended: Yes / No

Recommendation: Accept / Major Revision / Minor Revision / Reject

Reviewer Comments to the Author:

Confidential Reviewer Comments to the Editor:

Manuscript Evaluation Form

Manuscript Structure

Article Length:

Number of Tables:

Number of Figures:

Please indicate any conflicts of interest that may arise in connection with your review of this manuscript (if not applicable, please indicate "none").

If junior faculty members participated in the preparation of this review, please identify them here:

Would you recommend this junior faculty member as an independent reviewer? If yes, please provide their email address:

Could the title of this manuscript be improved? If yes, what would you suggest?

Evaluation: Excellent / Good / Fair / Below Average / Poor

Interest

Quality

Originality

Technical Quality

Clarity of Presentation

Importance to the Field

Language Quality

Citations

Conciseness

Completeness

International Significance

Scientific Value

Overall Evaluation

At the time of writing this review, are you an active or emeritus member of the American __ Society, the European __ Research Society, or the Society for __ Research?

Yes / No

Recommendation

Accept / Minor Revisions / Major Revisions / Reject

Confidential Comments to the Editor

Comments to the Author

Evaluation Form

Journal of ___

Title of the Manuscript:

Reviewer Name:

We greatly appreciate the time and effort you devote to the peer-review process. Your evaluation of the manuscript according to the criteria listed below will provide substantial assistance in selecting manuscripts suitable for publication. Your overall recommendation is an important factor contributing to the success of the journal ___.

Please provide an overall evaluation of the manuscript based on the criteria below, which will be used by the editors during the manuscript selection process:

Excellent / Good / Fair / Poor / Comments

Scientific Value of the Manuscript

Relevance of the Topic to the Scope of Journal ___

Balance Between the Manuscript's Value and Its Length

Quality of the English Language

Does the Abstract Provide an Adequate Summary of the Entire Manuscript?

Scope and Completeness of the References

Overall Recommendation to the Editors:

Acceptable without revision.

Acceptable after minor revision.

Unacceptable without major revisions, but resubmission is recommended.

(Select this option only if you expect the manuscript to become acceptable following substantial revision.)

Not suitable for publication in the journal - Reject.

Confidential Reviewer Comments to the Editorial Office:

Please provide the editors with confidential information regarding the suitability of the manuscript for publication.

Reviewer Suggestions to the Author(s) for Revision:

Please present your suggestions and recommendations as clearly and constructively as possible. These comments will be transmitted anonymously to the author(s).

Reviewer Report for the Manuscript

REVIEWER REPORT (PART I)

Please circle one response for each of the following seven questions and for the overall evaluation. If any item receives a score of (3) or lower, please use the reverse side of this page (or additional unsigned sheets, if necessary) to elaborate on your assessment. You may use the manuscript margins to correct typographical errors and provide brief comments that may be useful to both the author and the editor.

Completely Incorrect 1 2 3 4 5 Completely Correct

1. The topic is consistent with the aims and scope of the journal.
2. The manuscript makes a valuable contribution to professional practice in the fields of engineering and technology management.
3. The manuscript is logically and methodologically sound.
4. The illustrations and tables are necessary and appropriate.
5. The writing style is clear and understandable.
6. The reference list is sufficient.
7. Evaluation of this manuscript in comparison with similar articles published in reputable journals focused on practice-oriented and applied research:

Bottom 20% / Below Average / Average / Above Average / Top Tier

REVIEWER REPORT (PART II)

Recommendation

Reject (please specify the reason)

Revise and Resubmit (please explain)

Minor Revisions (please explain)

Accept (please explain)

Additional Confidential Comments to the Editor Only (50–300 words).

Comments to the Author(s) (150–400 words).

Manuscript Review Form

Please select one response:

Originality / Novelty * High / Moderate / Low / No Response

Significance of the Content * High / Moderate / Low / No Response

Quality of Presentation * High / Moderate / Low / No Response

Scientific Validity * High / Moderate / Low / No Response

Interest to Readers * High / Moderate / Low / No Response

Overall Evaluation * High / Moderate / Low / No Response

Language and Style *

Substantial language and stylistic editing required / Moderate revisions required / Language and style are acceptable / Minor proofreading required / I do not consider myself sufficiently qualified to evaluate the language and style

Does the introduction provide sufficient background information and include all relevant references? *

Yes / Could Be Improved / Must Be Improved / Not Applicable

Is the study design appropriate? *

Yes / Could Be Improved / Must Be Improved / Not Applicable

Are the methods described in sufficient detail? *

Yes / Could Be Improved / Must Be Improved / Not Applicable

Are the results presented clearly enough? *

Yes / Could Be Improved / Must Be Improved / Not Applicable

Are the conclusions supported by the results? *

Yes / Could Be Improved / Must Be Improved / Not Applicable

Overall Recommendation

Accept in the current form

Accept after minor revision (correction of minor methodological issues and editorial revisions)

Reconsider after major revision (e.g., absence of control groups in certain experiments)

Reject (the manuscript contains serious deficiencies, additional experiments are required, or the study has been conducted improperly)

Do you have any potential conflict of interest related to this manuscript?

Yes / No

Did you identify plagiarism?

Yes / No

Do you have any additional ethical concerns regarding this study?

Yes / No

Comments to the Editors

Comments and Suggestions to the Authors

Reviewer Comments to the Author

Confidential Reviewer Comments to the Editor: (selection required)

Question 1: The topic addressed in this manuscript merits investigation.

1. Strongly Disagree; 2) Disagree; 3) Neutral; 4) Agree; 5) Strongly Agree.

Response: _____

Question 2: The information presented is novel.

Question 3: The conclusions are supported by the data.

Question 4: Is the manuscript suitable for this journal?

Question 5: Does the manuscript structure comply with the established requirements?

Question 6: Are the figures, tables, and supplementary data appropriate?

Do you believe that the title accurately reflects the content of the manuscript?

Do you believe that the abstract adequately reflects the content of the manuscript?

Are the results or methods sufficiently presented in this scientific article?

Do the author(s) clearly state what has been achieved?

Do you consider the terminology used to be appropriate?

Do you consider the bibliography to be representative and up to date?

Did you find all necessary illustrations and tables included?

Do you believe this manuscript will be of interest to the journal's readership?

Comment

Final Remark

Reviewer Decision

Based on the evaluation of the manuscript, the reviewer makes a final recommendation:

Accept without revisions.

Accept after revisions and corrections.

Reconsider after revision for additional review.

Rejected.

Evaluation Form

1. Originality: Does the manuscript contain novel and significant information sufficient to justify publication?

Comments:

2. Relation to the Literature: Does the manuscript demonstrate an adequate understanding of the relevant literature in the field and provide an appropriate range of references? Have any significant studies been overlooked?

Comments:

3. Methodology: Is the argumentation grounded in an appropriate theoretical framework, concepts, or related ideas? Is the research design, or equivalent intellectual work underlying the manuscript, well developed? Are the methods employed appropriate?

Comments:

4. Results: Are the results presented clearly and analyzed appropriately? Do the conclusions effectively integrate the various elements of the manuscript?

Comments:

5. Implications for Research, Practice, and/or Society: Does the manuscript clearly identify implications for research, practice, and/or society? Does the manuscript bridge the gap between theory and practice? How may the findings be applied in practice (economic and commercial impact), teaching, public policy, or future research (contribution to the body of knowledge)? What is the societal impact (e.g., influence on public opinion or quality of life)? Are these implications consistent with the findings and conclusions presented in the manuscript?

Comments:

6. Quality of Presentation: Is the argumentation presented clearly, taking into account the technical terminology of the field and the expected level of reader expertise? Has sufficient attention been devoted to clarity and readability, including sentence structure, use of professional jargon, acronyms, and related aspects?

Comments:

Recommendation
Accept
Minor Revision
Major Revision
Reject and Resubmit
Reject

Confidential Comments to the Editor-in-Chief:

Comments to the Author(s):

10.3. Types of Peer Reviews for Manuscript Acceptance and Revision

Peer-review decisions prior to manuscript acceptance may include the following:

1. **Accept** - the manuscript is accepted immediately upon first submission. In standard academic practice, this is extremely rare. One may assume that only exceptionally authoritative scholars occasionally produce manuscripts accepted without revision.

2. **Minor Revision** - typically involving 3–5 comments. These comments are generally not substantial and may include recommendations such as adding several recent and relevant references, clarifying the research aim or objectives, refining certain concepts, and related improvements.

3. **Major Revision** - typically involving 5–7 comments. These comments are more detailed and demanding, often requiring clarification of results, inclusion of additional analytical dimensions, expansion of the discussion section, and similar substantial revisions.

Most commonly, manuscripts receive decisions of "**Major Revision**."

It is relatively rare for manuscripts to receive a "**Minor Revision**" decision after the first round of review.

In most cases, manuscripts receive either rejection decisions, rejections accompanied by comments, or requests for major revisions.

Review 1

Additional Confidential Comments to Editor Only (50–300 words):

We would like to express our gratitude for the opportunity to review a manuscript devoted to such a timely and scientifically important topic. Overall, the manuscript corresponds both to the thematic scope of the journal and to standard scholarly research requirements. Subject to minor revisions addressing the comments presented below, we recommend the manuscript for publication.

Comments for Authors (150–400 words):

The submitted manuscript examines contemporary patterns of digital transformation in the economic life of industrial societies and identifies current and prospective dynamics in the implementation of transformational processes. The author demonstrates skillful use of analytical material, identifies challenges associated with the digital modernization of the national economy, and outlines possible directions for their resolution. However, in order to improve the analytical quality of the manuscript, the following comments concerning its structural components should be addressed.

The literature review is highly fragmented and insufficiently structured. The author should systematize the existing approaches in the literature, identify methodological and applied research gaps, and justify the objectives of the present study on this basis. The review does not address classical theories of digitalization, nor does it define the concept of digital modernization. We recommend considering the works of D. Bell, E. Toffler, and D. Tapscott. In addition, the following articles provide comprehensive overviews of digital transformation concepts:

1. Markus, M. L. (2024). …
2. Vialal, G. (2025). …
3. Scharmo, D. (2023). …

We recommend including in the “Methods and Materials” section a logical framework illustrating the methodological structure of the study, clearly identifying the stages of the research, its methodological foundations, and the relevant causal relationships. The methodological depth of the manuscript could also be strengthened through the formulation of explicit research hypotheses.

The first two diagrams do not represent the author’s original findings but instead illustrate the global scope of the research problem and the scale of capitalization of digital companies. Therefore, they should be moved from the Results section to the Introduction. The data covering the period 2019–2025 serve as the empirical basis for constructing the exponential function and forecasting the dynamics of global IT-sector development; accordingly, these data would be more appropriately presented in tabular form within the Materials and Methods section. The diagram illustrating the proportion of digital services should likewise be transferred to the Introduction. The calculated proportion of digital services and the comparative analysis of the United States, China, and the European Union do not constitute novel findings but rather demonstrate digital progress and divergence in technological development trends relative to European countries.

The Conclusions section should be expanded to include directions for future research and a clearer explanation of the manuscript’s contribution to science and business practice.

The reviewed manuscript may be recommended for publication following correction of the identified deficiencies.

Review 2

Additional Confidential Comments to Editor Only (50–300 words):

We appreciate the opportunity to review this manuscript devoted to the digital modernization of economic life. The study makes a sufficiently valuable contribution to both scholarship

and practice; however, it requires several theoretical modifications in light of the revisions and comments outlined below. We recommend that the manuscript be considered for publication following the necessary improvements.

Comments for Authors (150–400 words):

The submitted manuscript addresses one of the most significant topics for both academic research and the practice of corporate and public administration - the digital transformation of the economic life of industrial societies. The author proposes a distinctive approach to examining current and projected trends in the digital modernization of the global economy, which undoubtedly enriches contemporary research methodology. Nevertheless, the manuscript requires a number of improvements in the following structural areas.

Abstract. The descriptive statements such as "The government created the digital platform '___' through which public services are delivered to the population. Private businesses are implementing digital transformation of business processes" should be moved from the abstract to the introduction.

In the Introduction, the author does not sufficiently elaborate on the research problem. The presented arguments remain overly generalized and do not adequately explain such a multisystem phenomenon as digital modernization. We recommend briefly outlining the historical and technological prerequisites of this phenomenon, as well as its advantages, challenges, and risks for developing economies. Quantitative and qualitative assessment of the digital transformation of industrial economies requires deeper mathematical and empirical analysis and encompasses multiple dimensions of the process, including assessment of business process productivity and managerial efficiency, information security risks, organizational restructuring, and related aspects. Based on the results currently presented in the manuscript, we recommend narrowing the formulation of the research objective and

reframing it as “a current and prospective assessment of transformational processes in the economic life of industrial societies in the context of the pandemic.”

The author has not incorporated all relevant contemporary studies concerning digital modernization in developing economies. To strengthen the literature review, we recommend examining and citing studies on the institutional foundations of digital modernization by the following scholars: ___ (2021), ___ (2022), ___ (2023), ___ (2024), ___ (2024).

The results of the expert survey conducted by the European Business Association should not be presented as the author’s original findings but rather as analytical material for the development of strategic directions for digital transformation. We also recommend adapting international experience in digital economic modernization for this purpose. Based on the synthesis of survey findings and successful international practices, the author could formulate original recommendations for improving the efficiency of digitalization in the domestic economy and in the economies of countries such as ___.

The relationship between the “Discussion” and “Results” sections should be strengthened to better demonstrate the author’s perspective and the extent to which the approaches of other researchers intersect with the author’s own framework. The manuscript should clarify the advantages of the proposed approach and identify the future opportunities it creates for contemporary scholarship and economic practice.

The Conclusions section refers to the synergy between digital transformation in the public and corporate sectors; however, this effect is not sufficiently developed in the main body of the manuscript.

Overall, after incorporating the necessary revisions, the manuscript is likely to be of interest to potential readers.

Review 3

The authors have addressed all requested revisions. The Discussion section has been shortened, the information regarding methods and materials has been improved, and the results are now aligned with the research objectives. I recommend this manuscript for publication. This is a timely study based on high-quality field data and employing recently developed analytical methods.

The author should be commended for conducting an important study. I recommend this manuscript for publication. The overall quality of the manuscript is good. The Introduction section provides useful information for readers. The authors have incorporated all necessary revisions.

Accordingly, the content of the manuscript possesses sufficient value for publication. The manuscript addresses a highly important topic and demonstrates several noteworthy innovations. The findings are likely to be of interest to readers.

I am satisfied with the revisions undertaken. I consider the manuscript acceptable. The study now appears more rigorous and accessible to a broader audience.

The manuscript is well written. This article has the potential to be accepted for publication.

All comments and questions have been addressed appropriately. No further revisions are required.

Thank you very much for the revisions to your argumentation. These changes improve the clarity of the manuscript and strengthen its contribution to the field.

The manuscript is well structured, concise, and engaging. It may be accepted for publication.

This manuscript is of interest from the perspective of research on the topic of _____, and its findings are likely to be of interest to the journal's readership.

Review 4

The title is unclear and requires revision in order to better correspond to the primary objective of the study. The manuscript aims to analyze antioxidant activity and the content of phenolic compounds in cereal concentrates, as well as to investigate issues related to import regulation. Several objectives are stated in the Introduction; however, the title addresses an entirely different issue. The relationship between phenolic compounds and mycotoxins within the context of this study is not sufficiently clear.

The Introduction contains several unclear points:

1. Please provide examples of pathogens contributing to cereal contamination.

2. Which heavy metals were detected, and at what concentrations?

3. I suggest that the authors provide a clearer justification for conducting this study and more explicitly state the achieved objectives in the final paragraph of the Introduction, including a more precise explanation of the rationale for the research.

4. Please briefly summarize the objectives by integrating the literature review and research aims into the Introduction section.

5. Scientific units are presented incorrectly in several instances, for example, … (should be …).

Figure 4. Quantitative and qualitative composition of mycotoxins in cereal concentrates where the primary ingredients are ___. Which specific type of cereal investigated in this study is represented in these results? I observed only one type.

Is this section intended to represent a summary rather than a conclusion?

Review 5

The topic and objective of the study are unclear and internally inconsistent.

Introduction

1. It is recommended to merge the Introduction, Literature Review, and Problem Statement sections. In addition, these sections should be shortened.

2. The objective of the study should be clarified.

3. Please clarify the research hypothesis (Section 1.2).

Methodology

1. It is strongly recommended to evaluate the composition and properties of the samples.

2. Information regarding the botanical origin of the samples is missing.

3. On what basis were the grain-processing conditions selected (Section 2.1)?

Results and Discussion

1. The results are presented in an inappropriate manner, making them difficult to understand and difficult to relate to the quality control of imported food products.

2. The Discussion section does not adequately address a substantial portion of the results, and the authors do not explain the observed differences; therefore, a more detailed discussion is required. The authors have not discussed their findings in sufficient depth. I strongly recommend that the authors consult recently published studies concerning the content of phenolic compounds in ___ samples.

Conclusion

The manuscript is unclear and insufficiently informative. The author provides neither recommendations nor directions for future research.

The English language requires substantial revision. I strongly recommend a thorough review and correction of the English language throughout the manuscript. The authors should devote significant effort to revising the manuscript in order to improve its readability.

Review 6

The authors are encouraged to substantially revise the manuscript, with particular attention to the following issues:

Please use consistent units throughout the manuscript (e.g., millimeters and newtons rather than kilograms or tons).

Please use specific dimensions or internationally recognized designations instead of non-standard terminology for steel profiles.

Please avoid repetitive statements.

Please use consistent terminology when describing fire-protection materials (fireproofing materials, coatings, boards, panels, etc.).

Please revise the equations, as they appear to contain errors, and some values are inconsistent (40 versus 30).

Several statements are introduced without clear connection to the manuscript's argumentation or without sufficient supporting evidence. For example: "it was found that, in order to achieve the required fire-resistance rating, it is necessary to consider the operational conditions of building structures in the presence of combustible loads on site." Such a "finding" cannot reasonably be attributed solely to the authors. In addition, the terminology associated with onshore buildings appears confusing in the context of offshore steel frame structures.

Please also consider a broader range of testing standards, including additional EN and ISO standards related to steel protection (Eurocode series and EN testing and assessment methods such as EN 13381-4 and EN 13381-8). International evaluations confirming whether protective materials are adequate and under which conditions should encompass a broad range of steel profiles/sections and distinguish between columns, beams, and other elements such as floors.

Finally, if the manuscript proposes a novel protective material, more detailed characteristics should be provided (e.g., tensile strength, pull-out strength of fasteners, DGA, TMA, etc.).

The manuscript refers to modeling; however, no detailed information is provided. Please include additional details that could elevate the manuscript to a level suitable for publication in the journal.

Regarding the presentation of the conclusions, it also remains unclear why the authors consider insulation criteria but do not address failure criteria, as specified, for example, in ISO 834 or EN 1363-1.

Review 7

The manuscript presents numerical and experimental investigations of the behavior of steel columns forming part of the load-bearing system of an offshore oil platform exposed to standard and hydrocarbon fire conditions. The columns are protected using a fire-protection material consisting of lightweight glass-fiber-reinforced concrete boards. In my opinion, the manuscript should be rejected for the following reasons:

The manuscript is excessively short and does not provide sufficient detail regarding the conducted experiments or the associated modeling procedures. It appears that a substantial portion of the material has already been published by the authors in other scientific works cited in the reference list.

The key contribution of the manuscript is the application of a novel type of fire-protection material. However, the authors do not provide any relevant data regarding the thermal properties of the proposed material. This information is critically important because it is well established that the thermal properties of fire-protection materials are temperature dependent. If numerical modeling is used as a validation method, temperature-dependent thermal properties are required as essential input parameters for the simulations.

The quality and quantity of the figures and tables presented in the manuscript, as well as the accompanying explanations, are insufficient.

Review 8

The manuscript examines the fire resistance of centrally compressed steel columns used in offshore platform structures. Two columns exposed to standard and hydrocarbon fire conditions were tested while protected with cement-based fire-resistant boards. The obtained experimental results were subsequently used to validate a simplified method for calculating fire-resistance time.

The title refers to a highly interesting topic that is undoubtedly relevant within the field of structural fire engineering. However, the manuscript does not address important aspects related to the development of numerical models for fire-resistance calculations, nor does it provide sufficient descriptions of the conducted experiments to ensure reproducibility. The proposed calculation method remains unclear. The presented equations are basic expressions defining the use of the column cross-section at ambient temperature in terms of the stress-to-yield-strength ratio and the ratio of applied load to buckling load, which are subsequently used to calculate the critical temperature of the steel element. This correlation is presented insufficiently clearly.

Although the columns are protected with fire-resistant boards, insufficient information is provided on the type of boards used and their physical, thermal, and mechanical properties. Additional details are required concerning the experimental setup, instrumentation, monitored temperatures, deflections, and related parameters.

Unfortunately, the objective of the manuscript is not entirely clear. The title is promising; however, the manuscript contributes relatively little in its current form.

Suggestions for Improvement:

The Introduction section describes the risks associated with fires on offshore oil platforms. Therefore, the necessity of the proposed research is justified. I recommend expanding the Introduction by incorporating previous studies investigating

structural behavior under fire conditions on offshore platforms. A review of more recent experimental investigations and the development of advanced numerical models could demonstrate the complexity of the analyzed phenomena and identify the potential scientific problem addressed by the proposed study.

In addition, fire-resistant boards are used to protect steel surfaces from direct fire exposure, yet very limited information regarding these materials is provided. Is the purpose of the study to evaluate a novel type of fire-resistant board? If so, this should be described in detail, and the test results for the protective materials should also be presented.

Review 9

Overall, the submitted manuscript complies with standard requirements for scientific research; however, it requires revision and correction in accordance with the comments provided below.

I consider it important to present the novelty of the manuscript by clearly defining its contribution to science.

The Introduction requires expansion of the relevance and significance section, as most of the current section is devoted to source review.

The Results section lacks year-specific data. Were all results typical and free from deviations?

The Methodology section specifies the determination of dry skim milk residue; however, this indicator is absent from the Results section.

“Probability levels R” - what exactly does this parameter represent?

The Results section should include a figure or table presenting the energy value of meat and milk across all groups.

The Discussion section contains insufficient comparison between the present findings and the studies of other researchers.

The Conclusions section should be expanded by incorporating the obtained results in greater detail, providing

arguments and explanations regarding how and where the findings may be applied, and outlining directions for future research.

Review 10

The study addresses a sufficiently important topic in the field of cattle nutrition. However, the manuscript may be recommended for publication only after revision and consideration of the comments outlined below.

The abstract should indicate the relevance of the investigated problem and the practical significance of the study. At present, the abstract focuses exclusively on the research findings.

The keywords should not duplicate terms already included in the title of the manuscript.

“Assessment of nitrogen balance in cows” - what specific type of nitrogen balance is being assessed? Please clarify whether this refers to nitrogen in feed products, blood nitrogen, or another parameter.

In addition, the objective stated in the abstract differs from the objective presented in the Introduction. Are you investigating methods for increasing cattle productivity or evaluating the effectiveness of feed adaptogens? Please clarify or reformulate the objective accordingly.

Methodology Section

“Research objects: 40 white-headed bulls aged 6–18 months and 40 black-and-white first-calf heifers. All animals were divided into four groups of 10 animals each…”

Please clarify the following:

1. Were there four groups of 10 cows each both in ___ Region and in the Republic of ___?

2. The author mentions bulls aged 6–18 months, whereas the Results section presents data for bulls aged ten and eighteen months. If the study was conducted exclusively within these age categories, this should be clearly specified.

"The growth of the bulls was recorded individually by weighing in the morning before feeding and watering" - does this imply daily measurements? Does the same apply to "blood sampling for the study of morphological and biochemical composition…"?

Please specify the differences among experimental groups II, III, and IV. The control group has also not been clearly identified.

In the Results section, it is not entirely clear whether all data were averaged across ___ Region and the Republic of ___, or whether the data were additionally averaged across years.

Figure 3 and Table 3 present data for four groups: 10-month-old bulls, 18-month-old bulls, and 4-month-old first-calf heifers. This suggests a total of 120 animals rather than 80.

The Discussion section requires further revision. It should focus more extensively on international authors who have investigated this issue and compare the obtained findings with their studies.

The Conclusions section should also be revised, since only ___ Region is mentioned, whereas the Republic of ___ remains included in the Methodology section. It would additionally be advisable to compare the territories in order to determine where the most favorable results were obtained and identify the factors influencing these outcomes.

This section should also clearly indicate the novelty and significance of the study.

The submitted manuscript may be recommended for publication after the identified deficiencies have been addressed.

Review 11

The manuscript addresses a relevant topic and is presented in a structured and concise manner. However, several comments should be considered during the final revision of the manuscript.

In the Methods section, the research conditions should be clarified, including whether repetitions were conducted or whether the results were averaged.

The standard feeding ration of the animals should be specified.

Which method was used to determine nutrient content?

How was nutritional value determined?

In my view, the Discussion section contains insufficient discussion and comparison with the findings of other authors.

The Conclusions section should be further expanded, as the abstract currently contains more results than the Conclusions section.

The manuscript may be recommended for publication after final revision.

Review 12

Comments from the Editors and Reviewers:

The Introduction and Literature Review are not sufficiently precise or concise and require thorough language revision in order to convey the intended points clearly.

The Introduction is verbose, overly general (e.g., spectroscopy is most commonly used for this purpose, namely to determine the chemical composition of a sample), and insufficiently focused, as if written for a non-specialist audience (e.g., “oil paints, which were popular in the seventeenth and eighteenth centuries”). This section should be shortened and more clearly focused. All instrumental methods are well known; therefore, the manuscript should explain what these methods make it possible to determine about the technique of ___ painting.

The first sentence introducing instrumental methods is too general or inaccurate. See the examples below:

“Microscopic studies reveal minute details invisible in the ultraviolet range.” Ultraviolet illumination and microscopy are not comparable methods.

"Studies of the condition and restoration of icons are based on ultraviolet spectroscopy (Naumova, 2013)." This is a generalized and not entirely accurate statement.

"Researchers pay considerable attention to X-ray fluorescence." This is true but insufficiently precise, since researchers pay considerable attention to many different methods and issues.

"Researchers used X-ray fluorescence to identify a portrait of a woman invisible to the naked eye. The researchers described in detail the principle of this technique, which is analogous to conventional X-ray examination." X-ray fluorescence and radiography are two entirely different techniques. The author does not present this point clearly.

The Literature Review remains strongly oriented toward European art. A simple search shows that technical studies of Chinese art exist but are not cited. This section still requires greater attention to Chinese art and a more in-depth engagement with the relevant literature.

Please critically evaluate the language and work with an editor to improve these sections. The remainder of the manuscript contains substantive and useful observations.

Review 13

Changes Which Must Be Made Before Publication (150–400 words):

I am writing this review regarding the manuscript entitled "___". The study investigates the issue of insurance propensity among low-income households. Although the presented information is potentially interesting and useful, several revisions are required before the manuscript can be considered further, in order to improve its prospects for a positive evaluation.

First, the abstract. I find it excessively concise. The author should include an introductory sentence emphasizing the importance of the topic under investigation. It is also necessary

to specify which methods were employed in the study. The author states that “approaches to insurance services meeting the utility criterion were proposed.” However, it remains unclear on which findings or results these proposed approaches are based.

Second, despite the extensive Introduction section, the manuscript lacks a theoretical framework for the development of the research questions. This component should be added. The statement that “the above-mentioned studies were mainly focused on health insurance and compulsory civil liability insurance. Relatively little attention has been paid in the scientific literature to increasing the propensity of low-income households to obtain insurance coverage based on their consumer interests” is insufficient. Specific examples of studies addressing insurance acquisition among poor households should be provided.

Third, the author writes: “The following indicators and correlations between them were calculated.” How exactly were these calculations performed? Was any statistical software used?

Fourth, the statement “From the above, it follows that relatively low-income households may be interested in purchasing insurance policies if they are offered services that help save funds by preventing unforeseen expenses” requires clarification. Is the author referring to the findings of the present study, the findings of previous researchers, or both? Furthermore, the following statement is also unclear: “Depending on the financial status of households, the following types of insurance contracts may be applied.” On what basis were these conclusions drawn?

My final recommendation concerns the need for professional English-language editing of the manuscript’s grammar and style.

Suggestions Which Would Improve the Quality of the Article but Are Not Essential for Publication (50–150 words):

I believe the manuscript would benefit from improved structural organization through the inclusion of subsections such

as Research Design, Sample Study, Intervention, Research Limitations, and Statistical Analysis within the Methods section. In addition, the Results section would be clearer if the outcomes corresponding to each research objective were presented in a more structured and itemized manner.

Review 14

Changes Which Must Be Made Before Publication (150–400 words):

Despite the relevance of the manuscript to the contemporary insurance industry, it lacks a sufficiently rigorous literature review, which constitutes my primary concern. As this is a research-oriented study, I recommend strengthening the manuscript through the development of a more solid theoretical foundation. The authors should explain which aspects of insurance poverty have previously been investigated, how earlier researchers addressed these issues, what limitations they encountered, and why the present study was necessary.

The Methods section should be expanded by citing specific studies upon which the methodology is based. At present, the methodological approach remains unclear. The authors should provide a more detailed explanation of how the correlation analysis was conducted and how it contributed to the development of recommendations aimed at increasing the propensity of low-income households to purchase insurance services. In addition, the reference list requires updating, as many of the cited sources are outdated. I recommend focusing more extensively on recent studies published within the last 5–7 years.

Suggestions Which Would Improve the Quality of the Article but Are Not Essential for Publication (50–150 words):

My principal comments concern the Introduction and Methods sections, as outlined above. Strengthening these sections would substantially improve the overall coherence and scientific rigor of the manuscript.

Confidential Comments Only for the Editor (50–300 words):

Although the manuscript addresses a topic of relevance to the contemporary insurance industry, it lacks a sufficiently developed literature review, which represents my principal concern. As this is a research-focused study, the manuscript would benefit from a stronger theoretical foundation. The Methods section should also be expanded through references to specific studies and methodological approaches utilized by the authors. At present, it remains unclear how the correlation analysis was conducted and how it contributed to the formulation of recommendations intended to increase the propensity of low-income households to purchase insurance services. In addition, the reference list should be updated, as many of the cited sources are outdated.

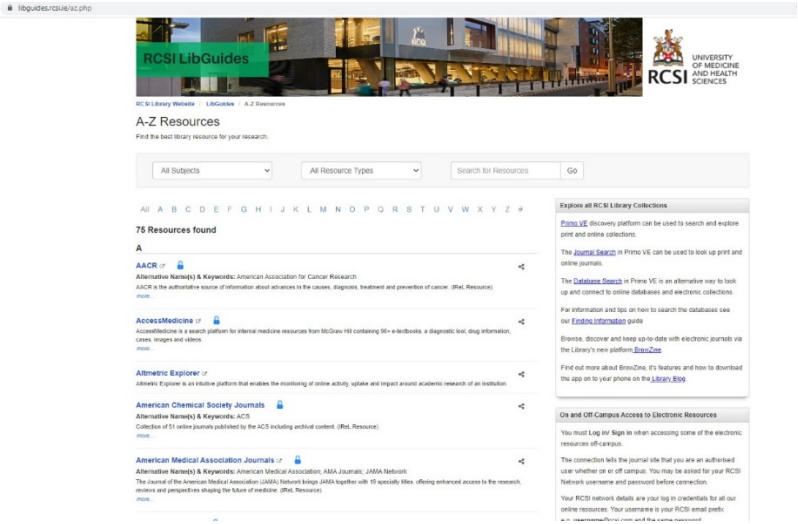
Section 11. Indexing of a Scientific Article in the Scopus or WoS Database

11.1. Indexing and Submission of Requests

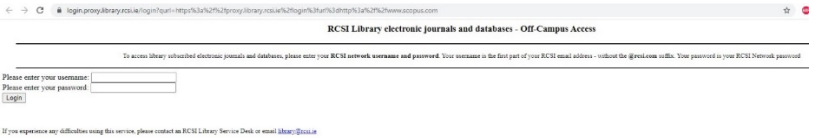
The indexing status of an article should be checked once per week. Inclusion of an article in the database usually takes approximately 2–4 weeks from the date of publication, although in some cases the process may require more time.

Scopus can be accessed directly via www.scopus.com or through a university subscription portal using the university's access link.

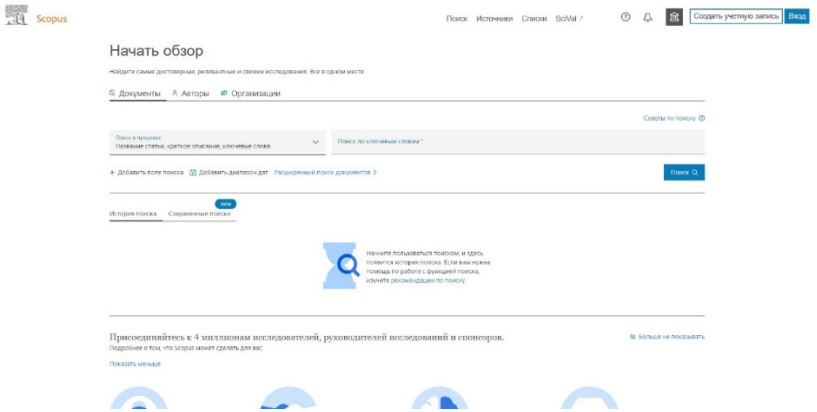
The university login interface typically appears as follows:



Select the required database (in this case, Scopus). Follow the database link, after which a page requiring a username and password will open.



The main search page of the Scopus database will then appear.



In most cases, searches are performed using the article title. Keep the search option within the category “Article title, abstract, keywords” (as illustrated above), enter the title into the search field, and click “Search.”

Searching by the first author is also convenient. To do this, enter the author’s surname and select “First Author” from the “Search within” menu.

Recommendation. If indexing is delayed, it is advisable to check the article twice: first by title and then by the surname of the first author.

Scenario 1. After entering the article title and clicking “Search,” a list of articles appears, among which the target article is identified. This indicates that the article has already been indexed in the database.

Recommendation. Verify that the journal title listed in the database corresponds to the correct journal.

If all information matches, the next step is to verify the accuracy of all indexed data.

Procedure for verification:

1. Open the full indexing page of the article in Scopus.

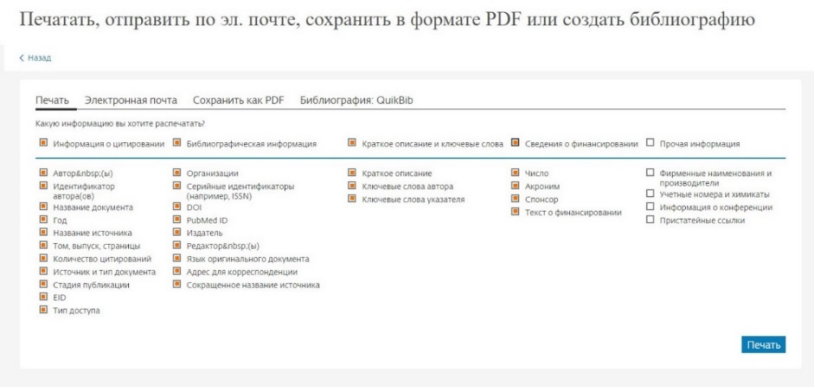
2. Open the PDF version of the published article.

3. Compare the surnames and names of the authors (Scopus usually displays initials only; this is not considered an error), verify the spelling of university affiliations and their association with the corresponding authors, and confirm the presence of acknowledgments if they appear in the published article. The format of acknowledgments in Scopus may differ from the published version, which is acceptable. The key requirement is that the acknowledgment is present. It is also important to verify the journal title and publication year, as errors may occasionally occur in these fields as well.

4. If all information is correct, take a screenshot of the indexed record. If indexing errors are identified, a correction request must be submitted; this procedure is described later.

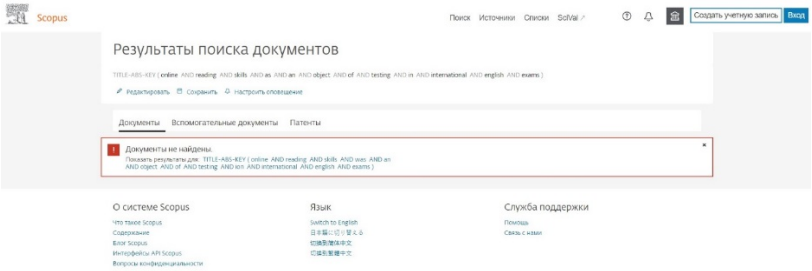
5. In addition to the screenshot, a document from Scopus will also be required. To obtain it, click the “Print” option located in the top navigation menu.

6. In the newly opened tab, select the categories as illustrated below and click “Print.” Then save the document as a PDF file.



7. If an indexing error is identified, save the file and proceed to the correction procedure.

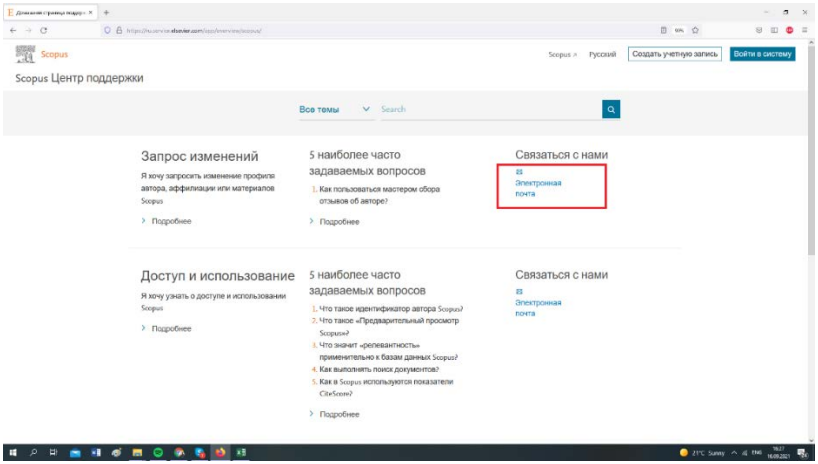
Scenario 2. You entered the article title and clicked “Search,” but no results were returned. This indicates that the article has not yet been indexed in the database. In such cases, a request for indexing must be submitted.



Indexing requests should be submitted approximately two weeks after the publication of the article. Thereafter, follow-up requests should be sent every 1–2 weeks until the article is indexed.

To submit a request, access the Scopus Support Center via the following link:

https://ru.service.elsevier.com/app/overview/scopus/



To submit a request, the following steps should be completed:

1. Navigate to the “Email” section (as indicated in the figure above).

2. A request submission form will appear. Enter all required information.

3. In the “Role” field, select “Author.” For the reason for contact, select “Add missing document.”

In the subject line, one of the following options may be used: add missing document или add document. Then provide all remaining information from the published article.

4. In the “Question” field, one of the following statements may be used:

When the article will be indexed?

Please, index the article

Please, add this document to database

5. After entering the question, attach the PDF version of the published article.

6. Provide the first name, surname, country, and one email address of one of the article’s authors.

7. Add a corresponding note for internal tracking purposes:

Request for indexing in Scopus submitted- if the request is submitted for the first time.
Scopus indexing absent; repeated request submitted- for follow-up requests.

The Scopus Support Center may also be used to submit requests for **correction of indexing errors**.

To do this, again navigate to the "Email" section, where the submission form will reopen. In the "Role" field, select "Author." For the reason for contact, select "Document correction."

The subject line should reflect the specific issue. For example, one of the following options may be used:

Change/correct the place of work of the authors
Change/correct author names
Add missing authors

Next, specify the article title. In the "Your Question" field, clearly describe the problem, indicate where the error occurs, explain what should be corrected, and provide a link to the indexed article. If access is obtained through a foreign university library, omit the initial portion of the URL and include only the segment beginning with "/record/". A screenshot illustrating the error may also be attached, together with the PDF version of the published article containing the correct information.

Then provide the first name, surname, country, and one email address of one of the article's authors and submit the request.

In some cases, it may be necessary to merge an author's primary profile with a duplicate profile that Scopus has created erroneously. To do this, return to the Scopus Support Center and again open the "Email" section. In the "Role" field, select "Author." For the reason for contact, select "Author profile correction." In the subject line, "Union of profiles" may be specified.

In the “Your Question” field, clearly specify which profiles should be merged. For example:

Please combine my main profile https://www.scopus.com/authid/detail.uri?authorId=* (ID *) with my additional (not needed) https://www.scopus.com/authid/detail.uri?authorId=* (ID *) Thanks!

Links to the author profiles or the author IDs may be provided. The author ID can be found directly within the URL of the author’s profile page, as illustrated below.

Checking the Email Accounts Used for Requests and Corrections

The email accounts used for submitting requests should preferably be checked once per week. In most cases, standard responses will be received indicating that the article will be indexed within approximately four weeks or that it will appear in the database within two weeks (examples provided below).

Thank you for your e-mail regarding the title entitled: “*”

Following your inquiry, I have initiated the process to add your paper to our database. Please note that this correction may take up to four weeks to be completed. I will contact you again, within this timeframe, to confirm the date by which the correction is expected to appear on Scopus.

Thank you for your patience while we were dealing with your request.

I can confirm that the requested article: "*" of Journal "*". Will reflect in Scopus within 2 weeks.

The timelines indicated in such emails are approximate and may sometimes differ from the actual indexing period. Therefore, these messages generally do not carry substantial significance. More important are emails reporting delays or problems related to indexing. For example, an article may only be indexed after assignment to a journal issue. In such cases, the email will typically contain a statement similar to the following: *«The reason why your article is not yet indexed in Scopus is that*

it has not been fully published. As you can verify at the Publisher's website, please see link below, the article is still in press and has not been assigned a volume, issue and page range.». In the event of receiving such a message, the editor responsible for publishing the article should be informed. No further indexing requests for this article should be submitted until the editor confirms that the article has been assigned to a journal issue.

If an email from Scopus indicates that a journal has been removed from the database or placed under review, this information should also be communicated to the editor responsible for the publication, who will provide further instructions. The message may appear approximately as follows: «*Unfortunately, we are unable to add the requested title because this journal "*" is currently being on hold, the investigation will take approximately 3-4 months for the decision to be taken.»*

All other indexing-related issues should likewise be reported to the editor.

11.2. Verification of Indexing in Web of Science

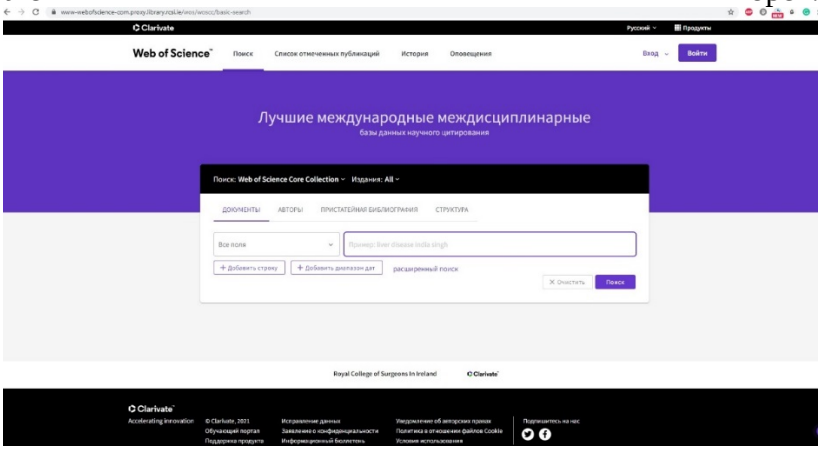
Verification of indexing in Web of Science (WoS) should be conducted once per week. In most cases, inclusion of an article in the database takes no less than approximately three months.

Recommendation. If an article has already been indexed in Scopus, its indexing status in WoS should also be checked, even if the three-month period has not yet elapsed.

Access to WoS is typically provided through a university subscription.

Select the required database (in this case, Web of Science). Follow the corresponding link to the database, after which a login page requiring a username and password will appear.

The main search page of the Web of Science database will then open.



Searches are performed using the article title. In the “All Fields” category, select “Publication Title,” enter the title in the adjacent search field, and click “Search.”

Important. An asterisk symbol (*) should be added at the end of the title; otherwise, the article may not be identified in the search results.

If the article is not present in the database, no requests should be submitted to WoS.

Information regarding the indexed article should be verified as follows:

1. Open the full indexing page of the article in WoS.
2. Open the PDF version of the published article.
3. Verify the surnames and names of the authors, as well as the correctness of university affiliations and their association with the respective authors. In WoS, university names are often abbreviated, and the order of department and university names may also be modified; this does not constitute an error.
4. If all information is correct, take a screenshot of the indexed record.

5. If indexing errors are identified, a correction request should be submitted by completing the form available through support-clarivate-com.*

11.3. University Report on the Publication and Indexing of an Article

Article Accepted in Scopus

The article has been accepted for publication in the journal.

Journal Information:

JOURNAL TITLE

Publisher: *

ISSN: *

Country: *

Journal website link: *

Scopus database: *

CiteScore: *

SJR: *

Quartile: *

Scopus subject areas:

Subject Area 1 – percentile *, quartile *. The article is indexed under this subject area.

Subject Area 2 – percentile *, quartile *

Subject Area 3 – percentile *, quartile *

…

WoS database: (Yes or No).

Article publication date – (month, year + issue number, if available).

Confirmation letter attached (if a confirmation letter was requested from the journal editor and received).

Example:

The article has been accepted for publication in the journal.

Journal Information:

International Journal of *
Publisher: * Publishers
ISSN: XXXX-XXXXE. ISSN: XXXX-XXXX.
England
https://www.*.com/*
CiteScore 2.3
SJR 18.293
Quartile: Q2/Q3
Subject Areas:
Applied Mathematics – percentile 58, quartile Q2.
Computer Science Applications – percentile 46, quartile Q3. The article is indexed under this subject area.
Modeling and Simulation – percentile 46, quartile Q3.
WoS – No.

The article is scheduled for publication on the journal website in the "Forthcoming Articles" section at the end of 2025 or the beginning of 2026. The article will be assigned to a 2026 issue. Assignment to a journal issue and indexing of the article will occur according to the publication queue (through May 2026 inclusive).

Article Accepted in WoS
The article has been accepted for publication in the journal.
Journal Information:
JOURNAL TITLE
Publisher: *
ISSN: *
Country: *
Journal website link: *
Scopus database: *
CiteScore: *
Quartile * (highest quartile of the journal)
Percentile * (highest percentile of the journal)
WoS database: WoS subdatabase *

Impact Factor: *
WoS subject areas:
Subject Area 1 – quartile *
Subject Area 2 – quartile *

Article publication date – (month, year + issue number, if available).

Confirmation letter attached (if a confirmation letter was requested from the journal editor and received).

The paper is accepted into «…».
Info about the journal:
Journal title
Publisher: *
ISSN: *
Country *
Website *
Scopus, Q * (according to the primary subject area of the article)
Percentile - * (highest percentile of the journal)
CiteScore *
Web of Science: WoS subdatabase *
Impact Factor *
JCR (WoS Quartile) - * (according to the primary subject area of the article)

The paper is scheduled for publication in (month, year + issue number, if available).

The acceptance letter is attached (if a confirmation letter was requested from the journal editor and received).

Example
T* K*
https://www.journals.*.com/*
ISSN XXXX- XXXX

Publisher - E
Netherlands
Scopus Q1 (Education)
Percentile - 73
CiteScore - 4.0
Web of Science: Social Sciences Citation Index
Impact Factor - 3.701
JCR (WOS Quartile) - Q2 (Education)

Section 12. Appendices

12.1. Verification Report for a Properly Completed Manuscript

Final Report:

	Verification	
1	A folder with the corresponding number (120) or title ("**Manuscript**") has been created.	
2	The manuscript has been completed **(120 Manuscript.docx**) and saved in the folder.	
3	The 10 most relevant and suitable reference articles identified during the search process have been saved in the folder (**120 comparison 1.docx**, …, **120 comparison 10.docx**).	
4	All sources used in the manuscript have been saved in the folder (1.pdf … 40.pdf).	

Interim Report 1:

	Verification	
1	The key concepts of the manuscript have been identified.	
2	Between 20 and 40 or more PDF files of related articles have been located and downloaded, including several published within the last three years.	
3	The quality of the identified articles has been verified according to journal rankings (Web of Science, Scopus).	
4	The structure of the identified articles has been analyzed, resulting in the development of a structural template for the manuscript.	
5	The content of the identified articles has been analyzed, resulting in an understanding of the essential content and research focus of the manuscript.	

6	The principal trends in the development of the research topic have been identified.	

Interim Report 2:

1	Provide the title of the completed manuscript in both Russian and English.	
2	Formulate the novelty and original contribution of the manuscript.	

Interim Report 3:

№	Structure	Specify the Corresponding Pages in the Manuscript
1	**Key words**	
2	**Introduction**	
3	The research topic is briefly described.	
4	The research objectives are described.	
5	The field of application is described.	
6	***Literature Review*** (20–40 references)	
7	General trends in previously published research are identified.	
8	Conflicts in theory, methodology, practice, or research findings are identified.	
9	Research gaps or gaps within theoretical schools are identified.	
10	A specific problem or future research perspective is identified.	
11	The author's perspective is presented within the literature review.	
12	The relevance of the study is substantiated.	
13	The practical significance of the article and its contribution to global scholarship are identified.	
14	The motivation for the study is justified - including a new methodology, experimental	

	data, addressing research gaps, modernization, or optimization.	
15	The aim of the study is clearly defined.	
16	The research objectives are formulated.	
17	**Methods and Materials**	
18	For theoretical studies - description of the methods specifically applied in the present manuscript.	
19	For experimental studies - description of the experiment, methodologies, equipment, and research objects used in the study.	
20	**Results**	
21	The novelty of the manuscript that provides the basis for the study's motivation is disclosed.	
22	The authors' observations and findings are presented.	
23	The results correspond to the stated aims and objectives of the manuscript.	
24	The idea or concept applied within the study is described with sufficient specificity.	
25	Tables	
26	Figures	
27	The titles of tables and figures correspond to their content.	
28	**Discussion**	
29	Research limitations or limitations within the broader field are identified.	
30	Future research perspectives are identified.	
31	Different methods are compared.	
32	The results are compared with similar findings reported in other studies.	

33	Similarities and/or differences are discussed.	
34	Agreement or disagreement with existing findings is explicitly stated.	
35	The results are analyzed and interpreted.	
36	Generalization and evaluation of the results are provided.	
37	A scientific concept or theoretical framework capable of explaining the obtained findings is identified.	
38	The reliability and validity of the obtained results are evaluated.	
39	The place of the obtained findings within the broader structure of existing scientific knowledge is determined.	
40	**Conclusions**	
41	The findings discussed in the Discussion section are systematized.	
42	The main findings are presented concisely.	
43	The practical and scientific significance of the study is described.	
44	Possible fields of application for the research findings are identified.	
45	**Abstract**	
46	The abstract length is 200–250 words.	
47	The research objectives are stated.	
48	The methods used in the study are specified.	
49	The achieved results are presented.	
50	Brief conclusions emphasizing practical application and the value of the findings are provided.	
51	**References**	
52	The reference list contains 20–40 sources.	

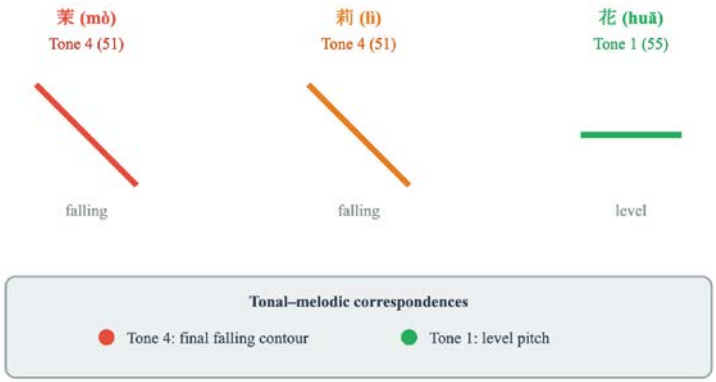
53	The reference list contains 10 or more sources published within the last three years.	

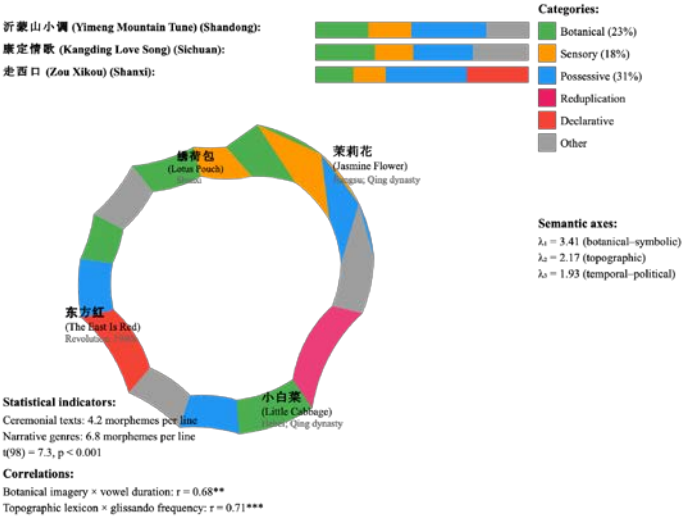
Interim Report 4:

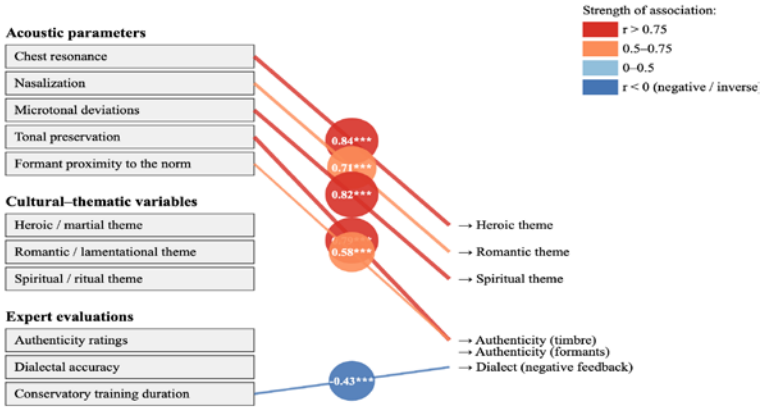
	Verification	
1	The article title does not exceed 10 words.	
2	The topic of the article corresponds to its content.	
3	The content of each structural section corresponds to its heading.	
4	The manuscript contains only factual material without unnecessary or irrelevant text.	
5	The manuscript does not contain jargon, non-academic vocabulary, or informal expressions.	
6	The manuscript includes comparisons, independent reflections, scientific contributions, and the authors' original research.	
7	Recent and relevant data are used.	
8	Numerical data are comparable and consistent.	
9	The study presents reliable and valid results.	
10	There are no unsupported statements such as "The conducted study demonstrates …" or "Based on the survey and questionnaire results …" without proper justification.	
11	The structure of the manuscript has been verified against the structure of articles published in leading journals.	

12	The length of each section has been verified against the corresponding sections in articles published in leading journals.	
13	**All revisions in the manuscript are highlighted in green (if the manuscript is a revised version).**	
14	**The novelty of the study is highlighted in blue throughout the manuscript.**	
15	The strongest aspects of the manuscript have been emphasized and strengthened.	
16	Weaknesses that cannot be eliminated have been minimized or appropriately concealed.	
17	**The manuscript represents a complete final version rather than an intermediate draft.**	
18	**It is confirmed that this manuscript surpasses each of the reviewed reference articles individually.**	

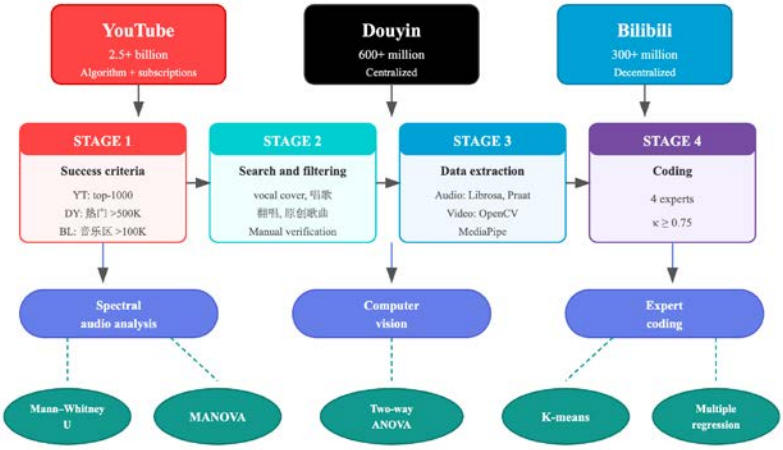
12.2. Mandatory Elements of an Ideal Scientific Article



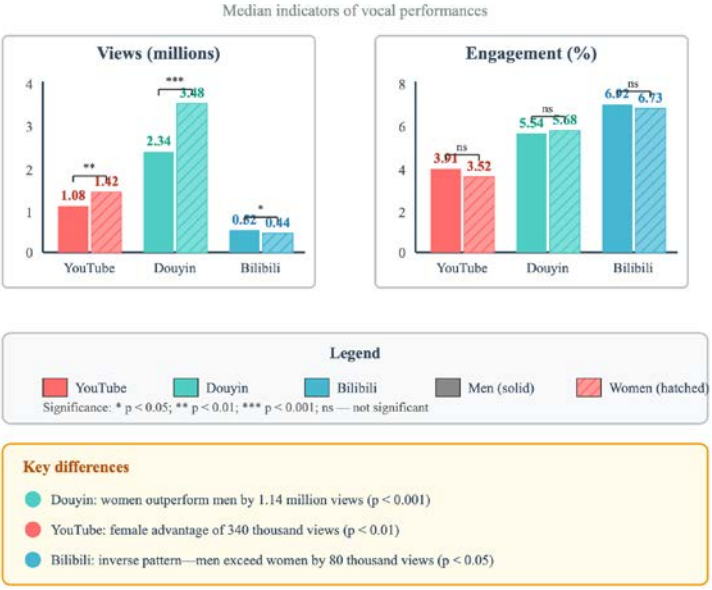


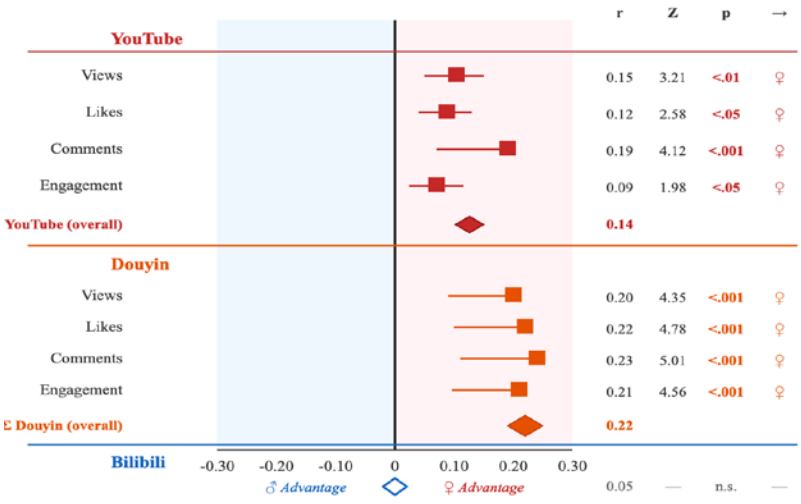


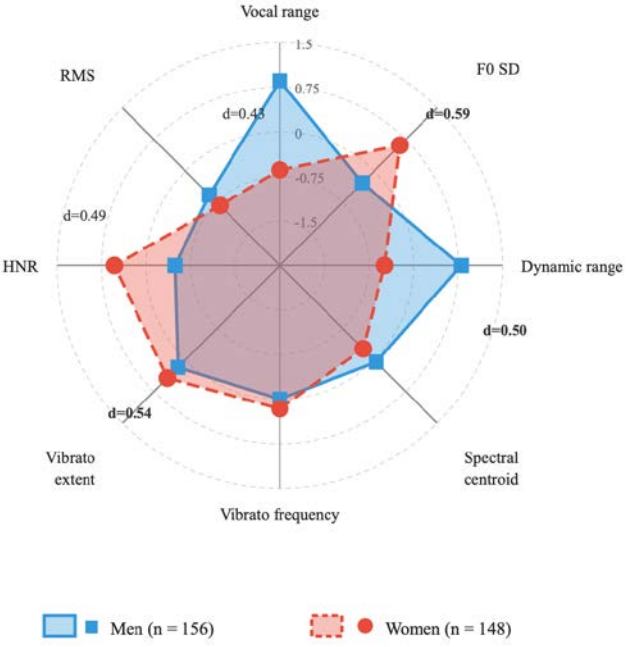
Note: ***p < 0.001. Line thickness corresponds to the strength of the correlation.
Color encodes direction: red/orange indicates a positive association, blue indicates a negative association.

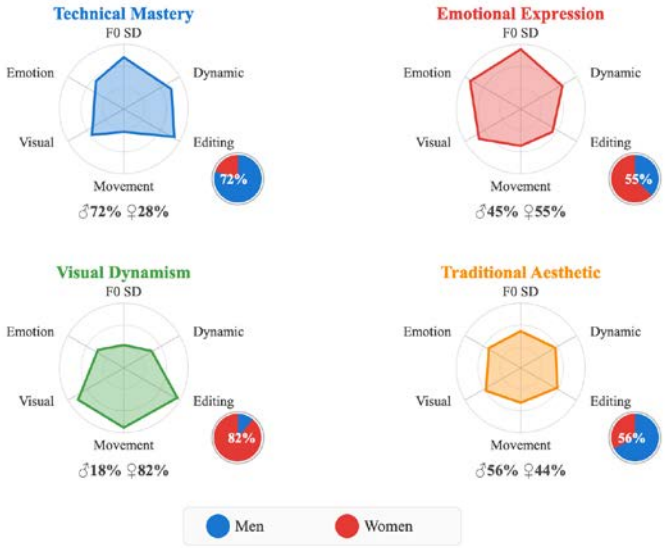


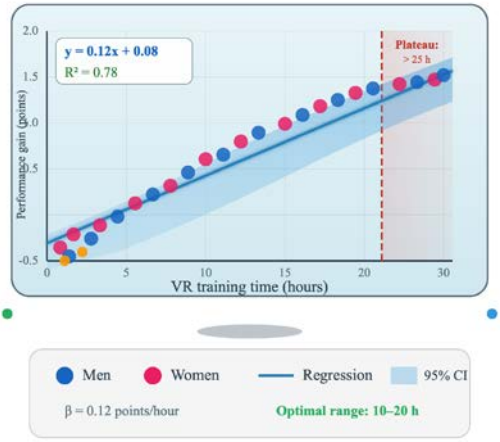
Data collection period: January–July 2024

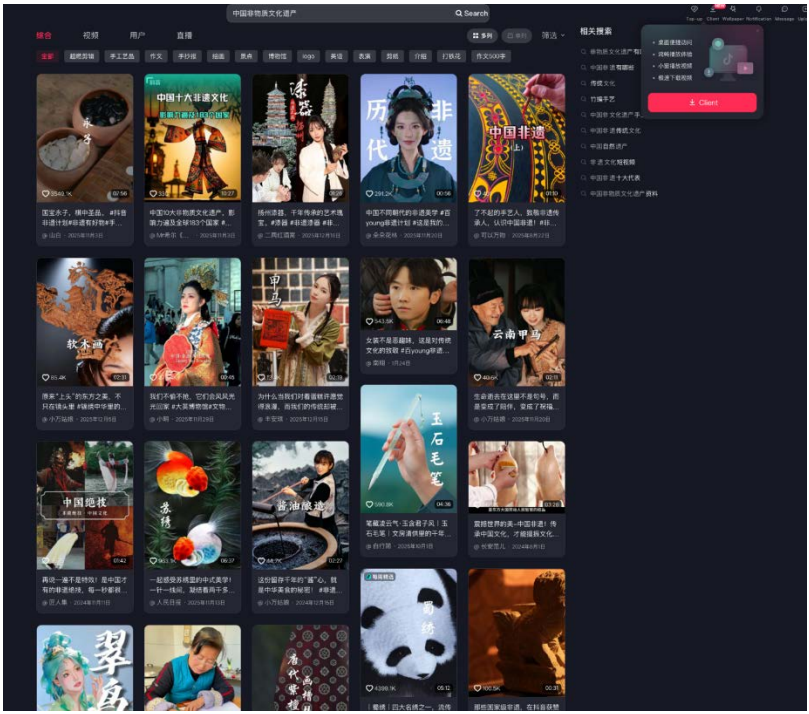

Median indicators of vocal performances
Views (millions)
4
3
2
1
0
**
***
*
1.08
1.42
2.34
3.48
0.82
0.94
YouTube
Douyin
Bilibili
Engagement (%)
8
6
4
2
0
ns
ns
ns
3.01
3.52
5.54
5.68
6.92
6.73
YouTube
Douyin
Bilibili
Legend
YouTube
Douyin
Bilibili
Men (solid)
Women (hatched)
Significance: * p < 0.05; ** p < 0.01; *** p < 0.001; ns — not significant
Key differences
Douyin: women outperform men by 1.14 million views (p < 0.001)
YouTube: female advantage of 340 thousand views (p < 0.01)
Bilibili: inverse pattern—men exceed women by 80 thousand views (p < 0.05)

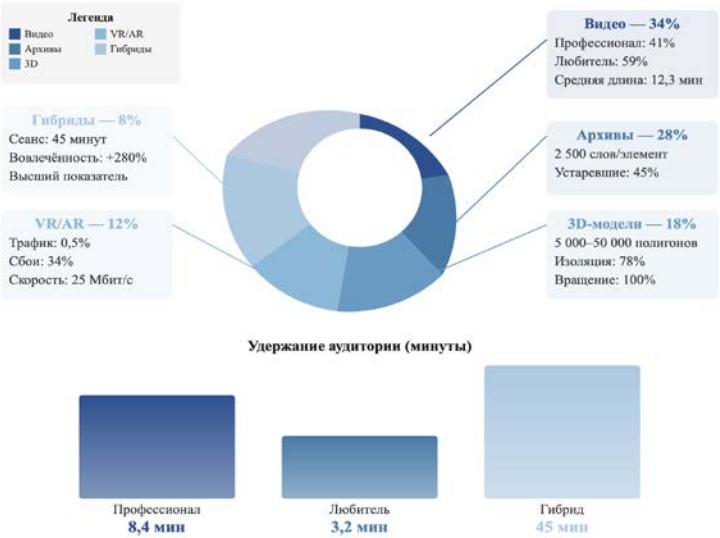

r
Z
p
→
YouTube
Views 0.15 3.21 <.01 ♀
Likes 0.12 2.58 <.05 ♀
Comments 0.19 4.12 <.001 ♀
Engagement 0.09 1.98 <.05 ♀
YouTube (overall) 0.14
Douyin
Views 0.20 4.35 <.001 ♀
Likes 0.22 4.78 <.001 ♀
Comments 0.23 5.01 <.001 ♀
Engagement 0.21 4.56 <.001 ♀
Douyin (overall) 0.22
Bilibili 0.05 — n.s. —
-0.30 -0.20 -0.10 0 0.10 0.20 0.30
♂ Advantage
♀ Advantage


Vocal range
F0 SD
Dynamic range
Spectral centroid
Vibrato frequency
Vibrato extent
HNR
RMS
1.5
0.75
0
-0.75
-1.5
d=0.43
d=0.59
d=0.50
d=0.54
d=0.49
Men (n = 156)
Women (n = 148)

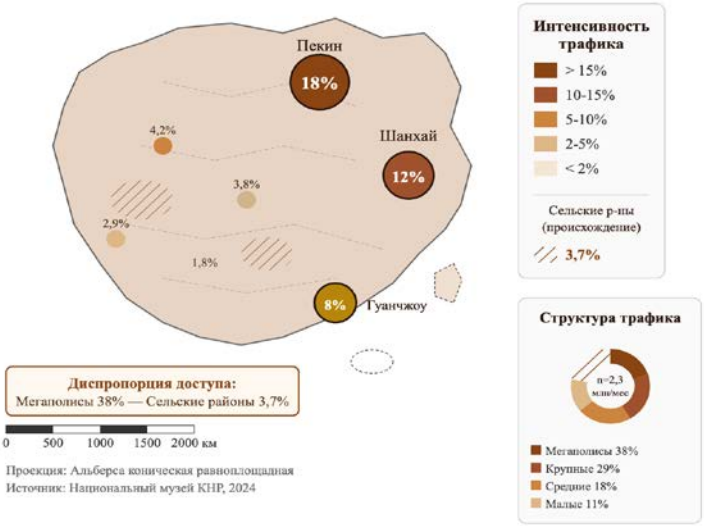

Technical Mastery
F0 SD
Dynamic
Editing
Movement
Visual
Emotion
72%
♂72% ♀28%
Emotional Expression
F0 SD
Dynamic
Editing
Movement
Visual
Emotion
55%
♂45% ♀55%
Visual Dynamism
F0 SD
Dynamic
Editing
Movement
Visual
Emotion
82%
♂18% ♀82%
Traditional Aesthetic
F0 SD
Dynamic
Editing
Movement
Visual
Emotion
56%
♂56% ♀44%
Men
Women

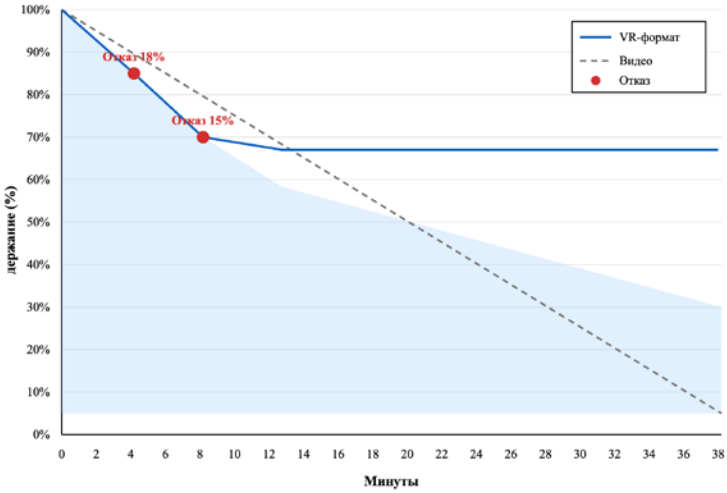

y = 0.12x + 0.08
R² = 0.78
Plateau:
> 25 h
Performance gain (points)
VR training time (hours)
Men
Women
Regression
95% CI
β = 0.12 points/hour
Optimal range: 10–20 h

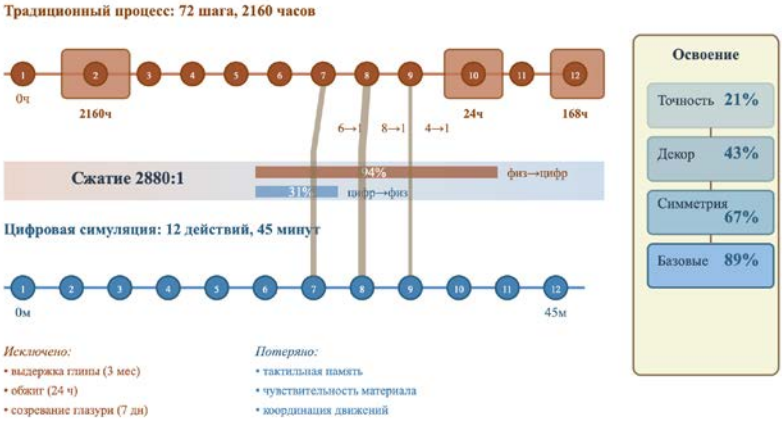

中国非物质文化遗产
Search
综合
视频
用户
直播
筛选
相关搜索
中国十六非遗文化
中国非遗
软木画
云南甲马
玉石毛雕
中国绝技
苏绣
扬州漆器
翠岛

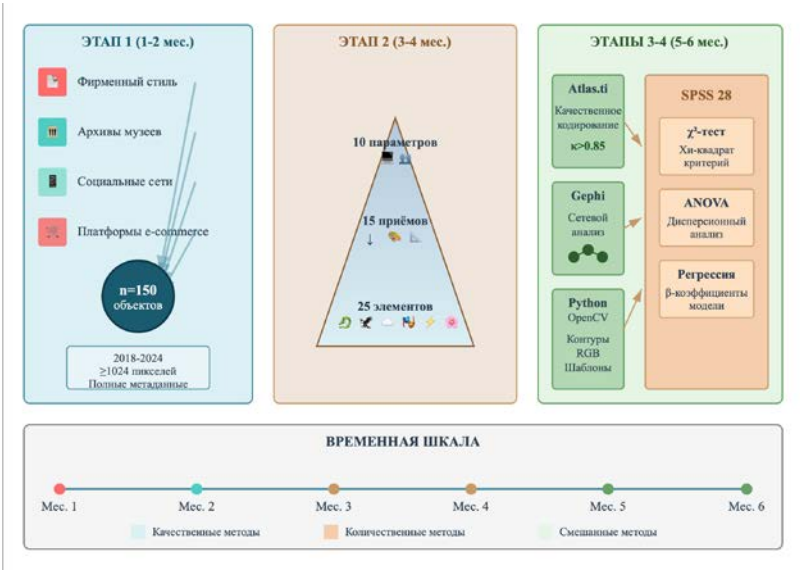

Легенда
Видео
VR/AR
Архивы
Гибриды
3D
Видео — 34%
Профессионал: 41%
Любитель: 59%
Средняя длина: 12,3 мин
Гибриды — 8%
Сеанс: 45 минут
Вовлечённость: +280%
Высший показатель
Архивы — 28%
2 500 слов/элемент
Устаревшие: 45%
VR/AR — 12%
Трафик: 0,5%
Сбои: 34%
Скорость: 25 Мбит/с
3D-модели — 18%
5 000–50 000 полигонов
Изоляция: 78%
Вращение: 100%
Удержание аудитории (минуты)
Профессионал
8,4 мин
Любитель
3,2 мин
Гибрид
45 мин

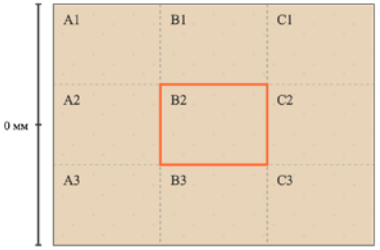

XXI.


Пекин
18%
Шанхай
12%
Гуанчжоу
8%
4,2%
3,8%
2,9%
1,8%
Интенсивность трафика
> 15%
10-15%
5-10%
2-5%
< 2%
Сельские р-ны (происхождение)
3,7%
Диспропорция доступа:
Мегаполисы 38% — Сельские районы 3,7%
0 500 1000 1500 2000 км
Проекция: Альберса коническая равноплощадная
Источник: Национальный музей КНР, 2024
Структура трафика
n=2,3 млн/мес
Мегаполисы 38%
Крупные 29%
Средние 18%
Малые 11%


VR-формат
Видео
Отказ
Отказ 18%
Отказ 15%
держание (%)
Минуты
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38

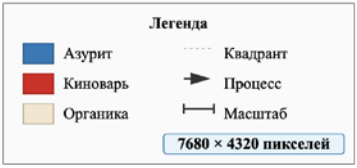

Традиционный процесс: 72 шага, 2160 часов
0ч
2160ч
24ч
168ч
6→1
8→1
4→1
Сжатие 2880:1
94%
физ→цифр
31%
цифр→физ
Цифровая симуляция: 12 действий, 45 минут
0м
45м
Освоение
Точность 21%
Декор 43%
Симметрия 67%
Базовые 89%
Исключено:
• выдержка глины (3 мес)
• обжиг (24 ч)
• созревание глазури (7 дн)
Потеряно:
• тактильная память
• чувствительность материала
• координация движений

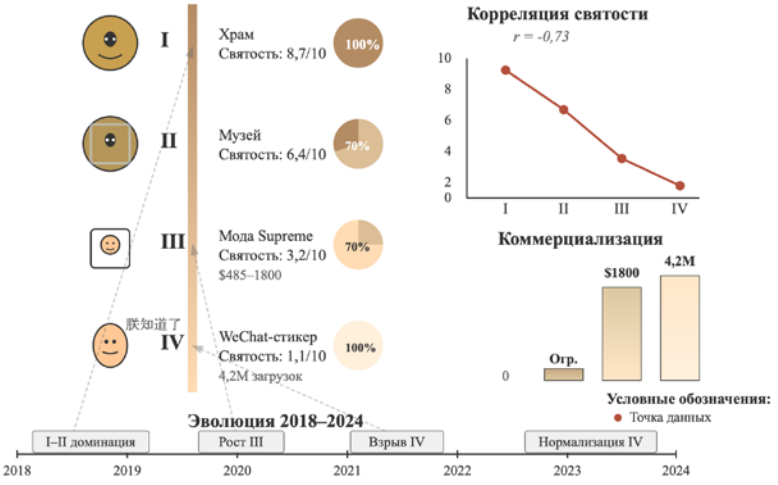

ЭТАП 1 (1-2 мес.)
Фирменный стиль
Архивы музеев
Социальные сети
Платформы e-commerce
n=150
объектов
2018-2024
≥1024 пикселей
Полные метаданные
ЭТАП 2 (3-4 мес.)
10 параметров
15 приёмов
25 элементов
ЭТАПЫ 3-4 (5-6 мес.)
Atlas.ti
Качественное кодирование
κ>0.85
Gephi
Сетевой анализ
Python
OpenCV
Контуры
RGB
Шаблоны
SPSS 28
χ²-тест
Хи-квадрат критерий
ANOVA
Дисперсионный анализ
Регрессия
β-коэффициенты модели
ВРЕМЕННАЯ ШКАЛА
Мес. 1
Мес. 2
Мес. 3
Мес. 4
Мес. 5
Мес. 6
Качественные методы
Количественные методы
Смешанные методы



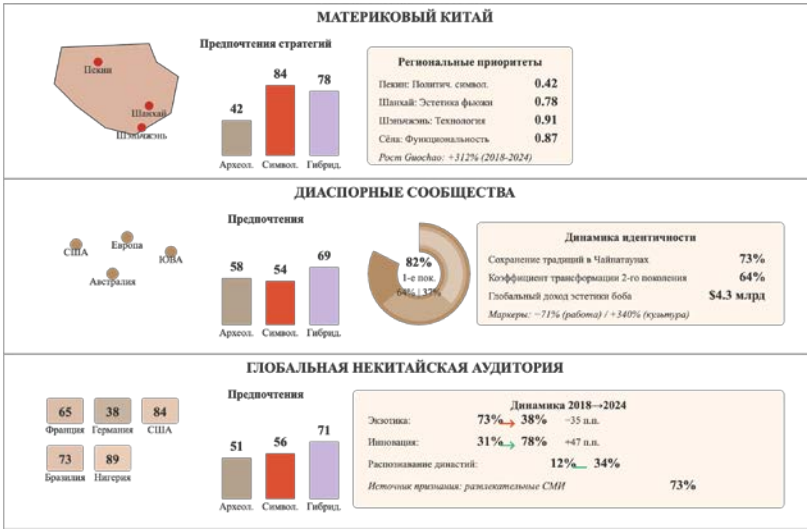
Метаданные квадранта B2

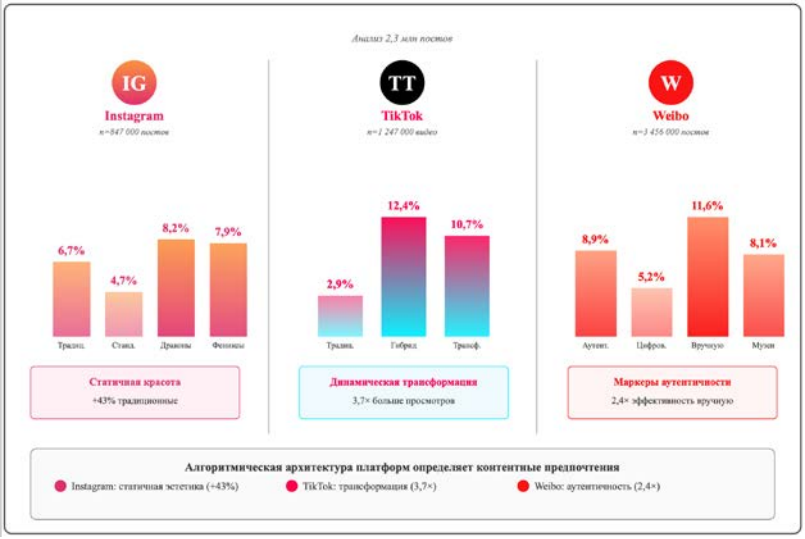
Параметр	Значение	Состояние
Пигмент	1,2–1,8 мм	Деградация
Основа	Гессо 1,5 мм	Стабильная
Кисть	0,08–0,12 мм	5–12 волос
Сохранность	Фрагментарная	Утрата 15–20%



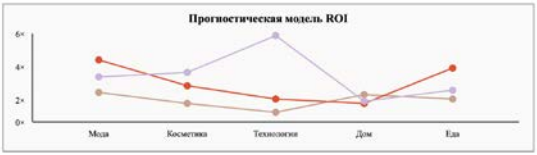


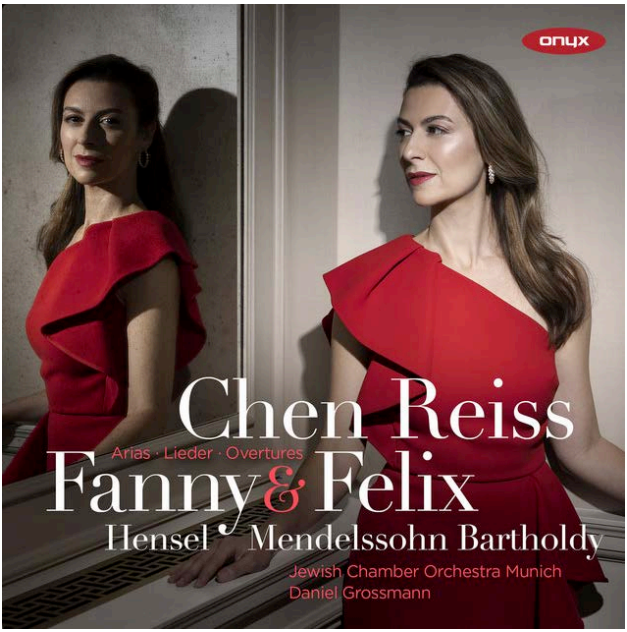

Местный контекст
Паназиатская амальгама
Универсальная категория
1:4.5
Сычуаньская опера
24–36 масок
Башни диаолоу
60° обзор
Атрибуция элементов
Китай: 31% | Япония: 22%
Таиланд: 19% | Неопред.: 28%
Гибридные паттерны
Фэн-шуй IKEA
73% ламинировок
Чайная церемония
7.29 м²
Специфичность
94%
47%
13%
Региональная специфика
Коммерческая применимость
100%
50%
0%
23%
58%
89%
Местный
Паназиатский
Универсальный
Закономерность
Утрата региональных маркеров коррелирует с коммерческой масштабируемостью
r = 0.84, p < 0.001
Аутентичность: −81%
Применимость: +286%
Легенда:
Траектория деконтекстуализации
Неопределённая атрибуция
Коммерческая применимость
Региональная специфика

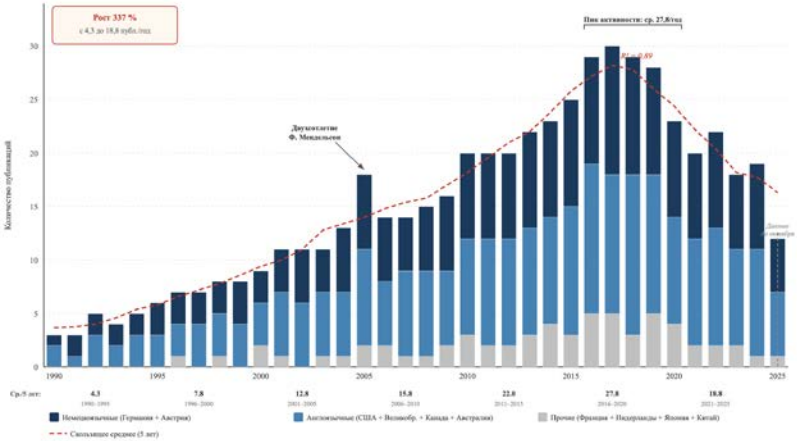

МАТЕРИКОВЫЙ КИТАЙ
Пекин
Шанхай
Шэньжэнь
Предпочтения стратегий
42
84
78
Археол.
Символ.
Гибрид.
Региональные приоритеты
Пекин: Политич. символ. 0.42
Шанхай: Эстетика фьюжн 0.78
Шэньжэнь: Технология 0.91
Сёла: Функциональность 0.87
Рост Guochao: +312% (2018-2024)
ДИАСПОРНЫЕ СООБЩЕСТВА
США
Европа
ЮВА
Австралия
Предпочтения
58
54
69
Археол.
Символ.
Гибрид.
82%
1-е пок.
64% | 32%
Динамика идентичности
Сохранение традиций в Чайпатаунах 73%
Коэффициент трансформации 2-го поколения 64%
Глобальный доход эстетики боба $4.3 млрд
Маркеры: ~71% (работа) / +340% (культура)
ГЛОБАЛЬНАЯ НЕКИТАЙСКАЯ АУДИТОРИЯ
65
Франция
38
Германия
84
США
73
Бразилия
89
Нигерия
Предпочтения
51
56
71
Археол.
Символ.
Гибрид.
Динамика 2018→2024
Экзотика: 73% → 38% −35 п.п.
Инновация: 31% → 78% +47 п.п.
Распознавание династий: 12% → 34%
Источник признания: развлекательные СМИ 73%

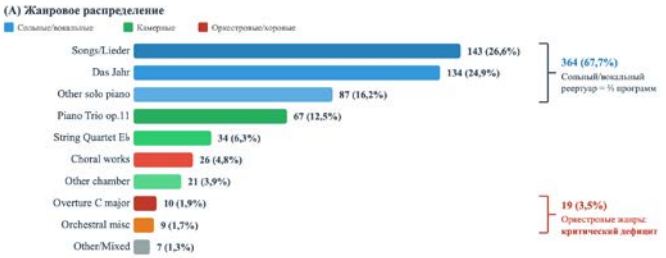


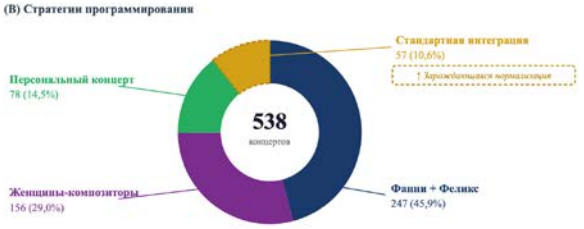
Сектор	Археологическая стратегия	Символическая стратегия	Гибридная стратегия
Мода	2,3× *Palace Museum*	4,7× *Li-Ning +312%*	3,8× *Shang Xia*
Косметика	1,9× *Forbidden City*	3,2× *Perfect Diary*	4,1× *Florasis*
Технологии	1,4× *Digital Dunhuang*	2,8× *Xiaomi MIUI*	5,3× *Huawei P50*
Дом	3,1× *Tsutmingyuan 3D*	2,4× *IKEA Feng Shui*	2,9× *TeamLab*
Еда	2,7× *Чайные церемонии*	3,9× *Starbucks CNY*	3,3× *Boba aesthetics*

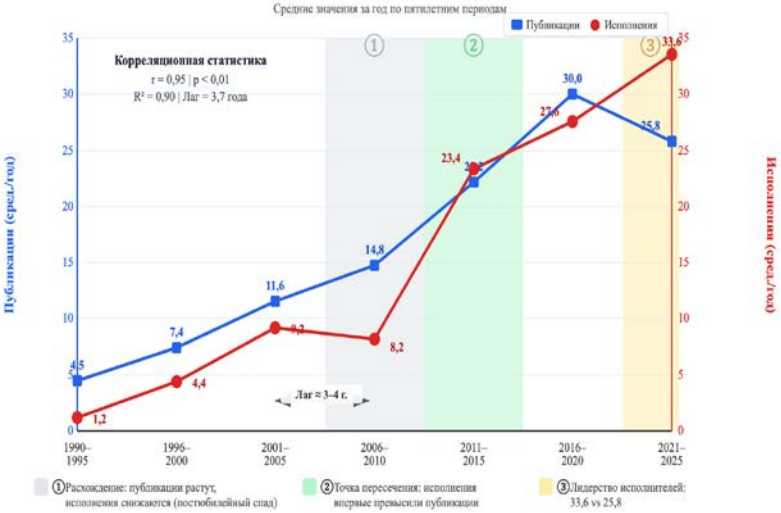


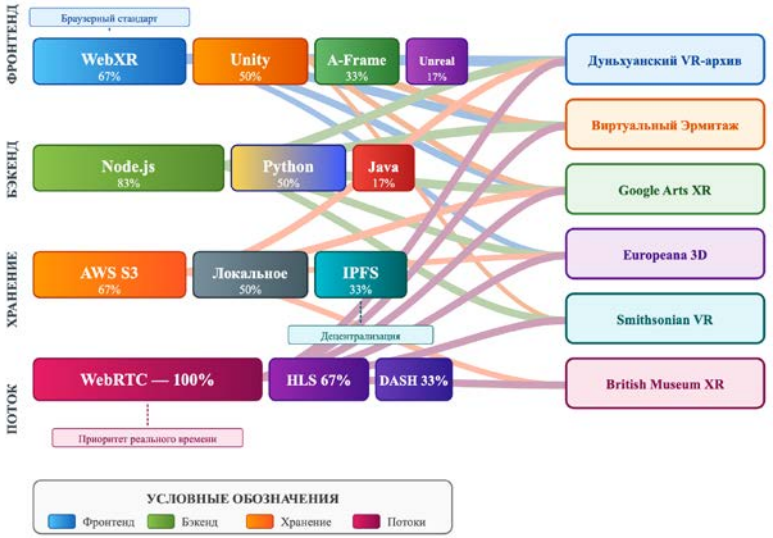

onyx
Chen Reiss
Arias · Lieder · Overtures
Fanny & Felix
Hensel Mendelssohn Bartholdy
Jewish Chamber Orchestra Munich
Daniel Grossmann

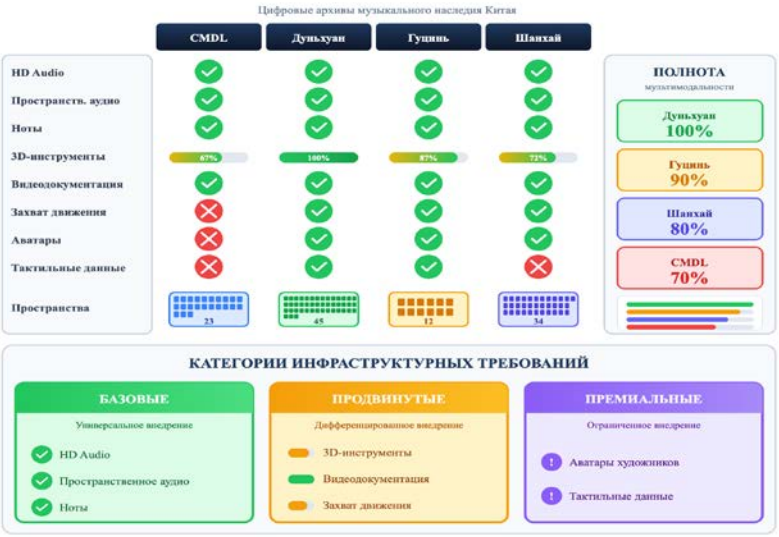

Рост 337 %
с 4,3 до 18,8 публ./год
Пик активности: ср. 27,8/год
Двухсотлетие Ф. Мендельсона
Количество публикаций
1990
1995
2000
2005
2010
2015
2020
2025
Ср./5 лет:
4.3
7.8
12.8
15.8
22.0
27.8
18.8
Немецкоязычные (Германия + Австрия)
Англоязычные (США + Великобр. + Канада + Австралия)
Прочие (Франция + Нидерланды + Япония + Китай)
Скользящее среднее (5 лет)

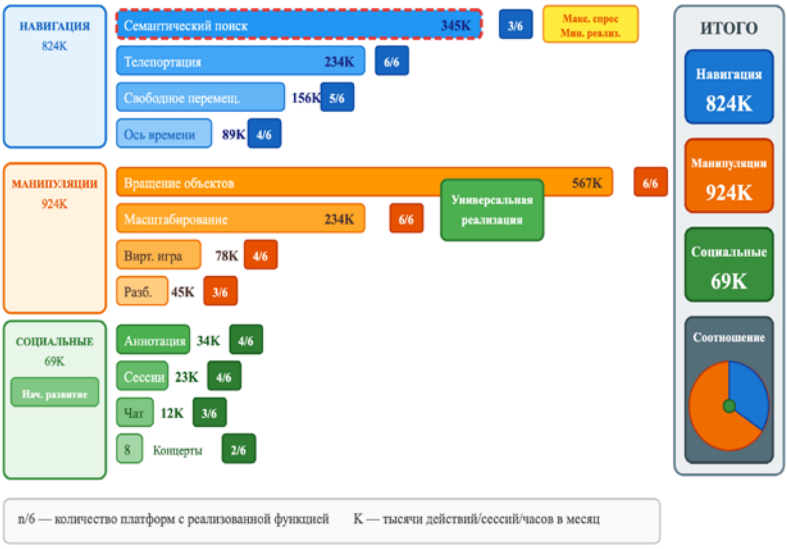

(A) Жанровое распределение
Сольные/вокальные
Камерные
Оркестровые/хоровые
Songs/Lieder 143 (26,6%)
Das Jahr 134 (24,9%)
Other solo piano 87 (16,2%)
Piano Trio op.11 67 (12,5%)
String Quartet Eb 34 (6,3%)
Choral works 26 (4,8%)
Other chamber 21 (3,9%)
Overture C major 10 (1,9%)
Orchestral misc 9 (1,7%)
Other/Mixed 7 (1,3%)
364 (67,7%)
Сольный/вокальный репертуар = ⅔ программ
19 (3,5%)
Оркестровые жанры: критический дефицит

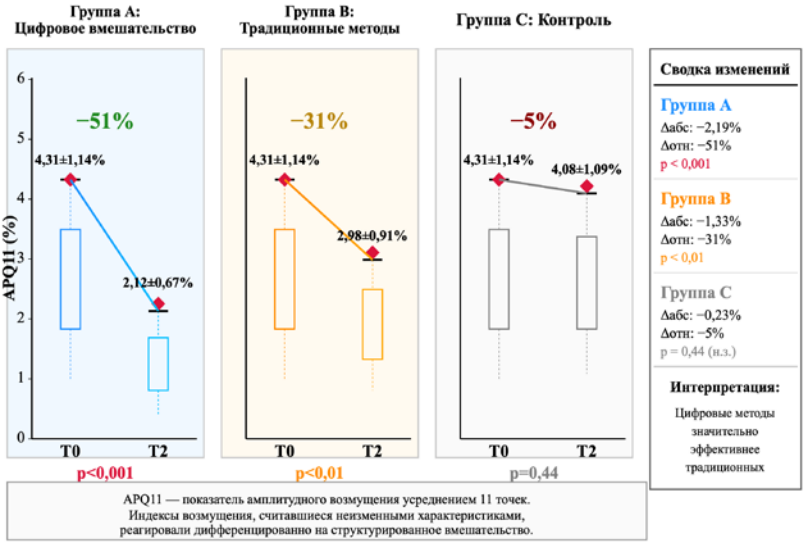

(B) Стратегии программирования
Стандартная интеграция
57 (10,6%)
↑ Зарождающаяся нормализация
Персональный концерт
78 (14,5%)
538
концертов
Женщины-композиторы
156 (29,0%)
Фанни + Феликс
247 (45,9%)

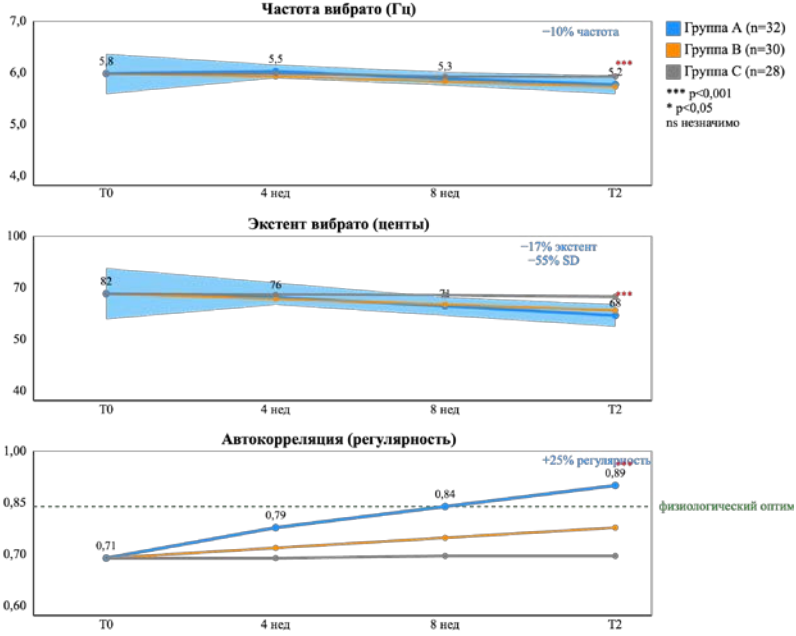

Средние значения за год по пятилетним периодам
Публикации
Исполнения
Корреляционная статистика
r = 0,95 | p < 0,01
R² = 0,90 | Лаг = 3,7 года
Публикации (сред./год)
Исполнения (сред./год)
Лаг ≈ 3–4 г.
1990–1995
1996–2000
2001–2005
2006–2010
2011–2015
2016–2020
2021–2025
①Расхождение: публикации растут, исполнения снижаются (постюбилейный спад)
②Точка пересечения: исполнения впервые превысили публикации
③Лидерство исполнителей: 33,6 vs 25,8

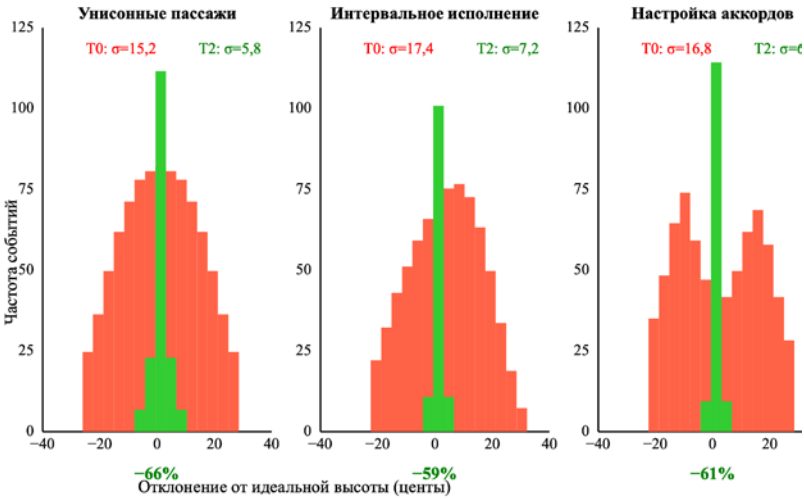

ФРОНТЕНД
Браузерный стандарт
WebXR 67%
Unity 50%
A-Frame 33%
Unreal 17%
БЭКЕНД
Node.js 83%
Python 50%
Java 17%
ХРАНЕНИЕ
AWS S3 67%
Локальное 50%
IPFS 33%
Децентрализация
ПОТОК
WebRTC — 100%
HLS 67%
DASH 33%
Приоритет реального времени
Дуньхуанский VR-архив
Виртуальный Эрмитаж
Google Arts XR
Europeana 3D
Smithsonian VR
British Museum XR
УСЛОВНЫЕ ОБОЗНАЧЕНИЯ
Фронтенд
Бэкенд
Хранение
Потоки


Цифровые архивы музыкального наследия Китая
CMDL
Дуньхуан
Гуцинь
Шанхай
HD Audio
Пространств. аудио
Ноты
3D-инструменты
67%
100%
87%
72%
Видеодокументация
Захват движения
Аватары
Тактильные данные
Пространства
23
45
12
34
ПОЛНОТА
мультимодальности
Дуньхуан 100%
Гуцинь 90%
Шанхай 80%
CMDL 70%
КАТЕГОРИИ ИНФРАСТРУКТУРНЫХ ТРЕБОВАНИЙ
БАЗОВЫЕ
Универсальное внедрение
HD Audio
Пространственное аудио
Ноты
ПРОДВИНУТЫЕ
Дифференцированное внедрение
3D-инструменты
Видеодокументация
Захват движения
ПРЕМИАЛЬНЫЕ
Ограниченное внедрение
Аватары художников
Тактильные данные

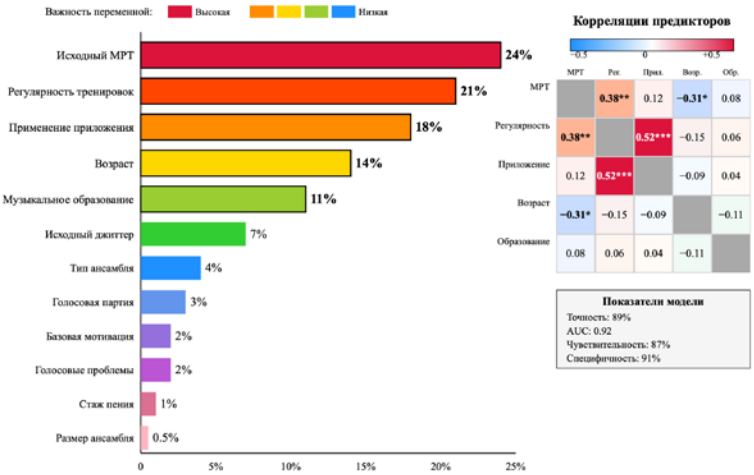

НАВИГАЦИЯ
824K
Семантический поиск 345K 3/6
Макс. спрос
Мин. реализ.
Телепортация 234K 6/6
Свободное перемещ. 156K 5/6
Ось времени 89K 4/6
МАНИПУЛЯЦИИ
924K
Вращение объектов 567K 6/6
Масштабирование 234K 6/6
Универсальная реализация
Вирт. игра 78K 4/6
Разб. 45K 3/6
СОЦИАЛЬНЫЕ
69K
Нач. развитие
Аннотация 34K 4/6
Сессии 23K 4/6
Чат 12K 3/6
8 Концерты 2/6
ИТОГО
Навигация 824K
Манипуляции 924K
Социальные 69K
Соотношение
n/6 — количество платформ с реализованной функцией
K — тысячи действий/сессий/часов в месяц

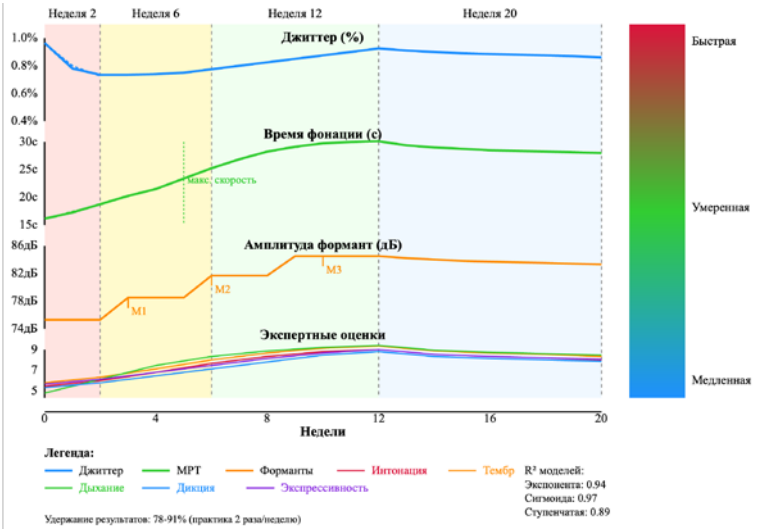

Группа A:
Цифровое вмешательство
Группа B:
Традиционные методы
Группа C: Контроль
APQ11 (%)
−51%
4,31±1,14%
2,12±0,67%
−31%
4,31±1,14%
2,98±0,91%
−5%
4,31±1,14%
4,08±1,09%
T0
T2
p<0,001
p<0,01
p=0,44
Сводка изменений
Группа A
Δабс: −2,19%
Δотн: −51%
p < 0,001
Группа B
Δабс: −1,33%
Δотн: −31%
p < 0,01
Группа C
Δабс: −0,23%
Δотн: −5%
p = 0,44 (н.з.)
Интерпретация:
Цифровые методы значительно эффективнее традиционных
APQ11 — показатель амплитудного возмущения усреднением 11 точек.
Индексы возмущения, считавшиеся неизменными характеристиками,
реагировали дифференцированно на структурированное вмешательство.

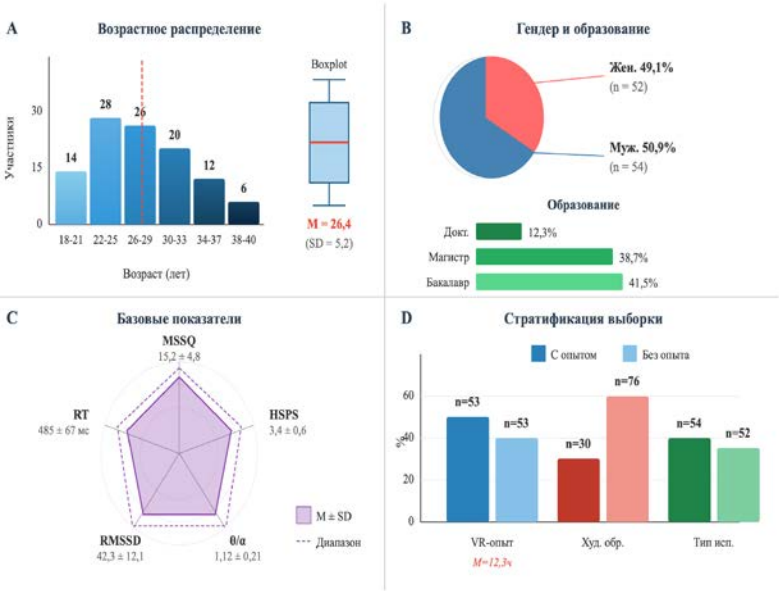

Частота вибрато (Гц)
−10% частота
5,8
5,5
5,3
5,2
***
Группа A (n=32)
Группа B (n=30)
Группа C (n=28)
*** p<0,001
* p<0,05
ns незначимо
T0
4 нед
8 нед
T2
Экстент вибрато (центы)
−17% экстент
−55% SD
82
76
71
68
***
Автокорреляция (регулярность)
+25% регулярность
0,71
0,79
0,84
0,89
физиологический оптим



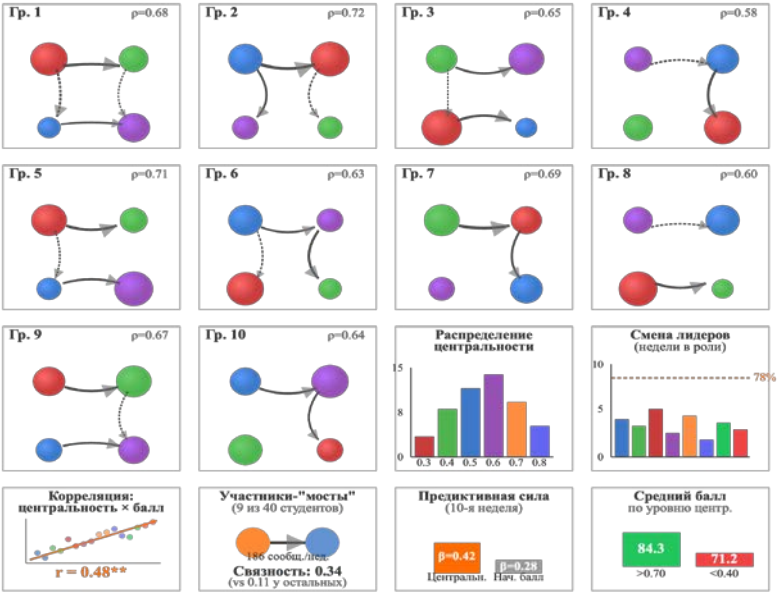
Тип	T0 (центы)	T2 (центы)	σ T0	σ T2	Улучшение
Унисоны	18,4	6,2	15,2	5,8	**66%**
Интервалы	24,1	9,8	17,4	7,2	**59%**
Аккорды	21,3	8,4	16,8	6,4	**61%**

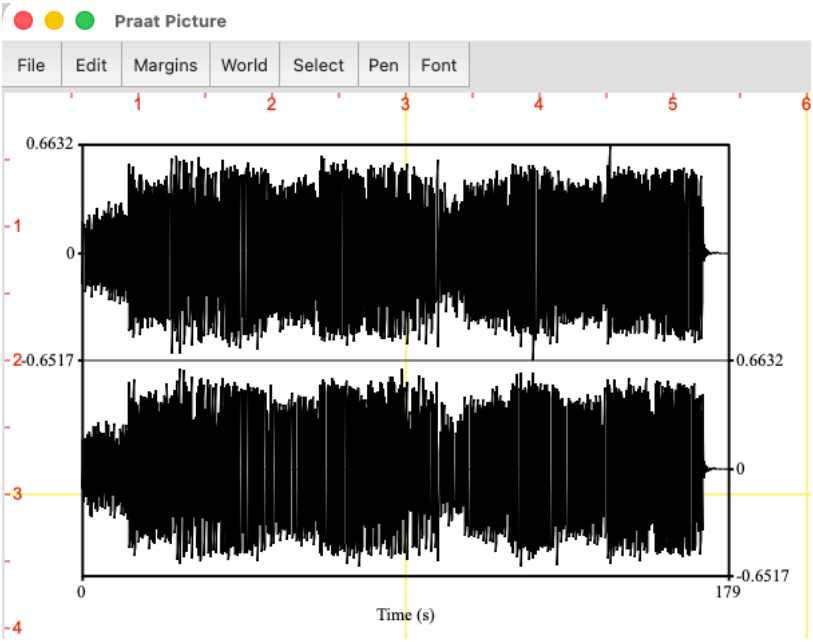


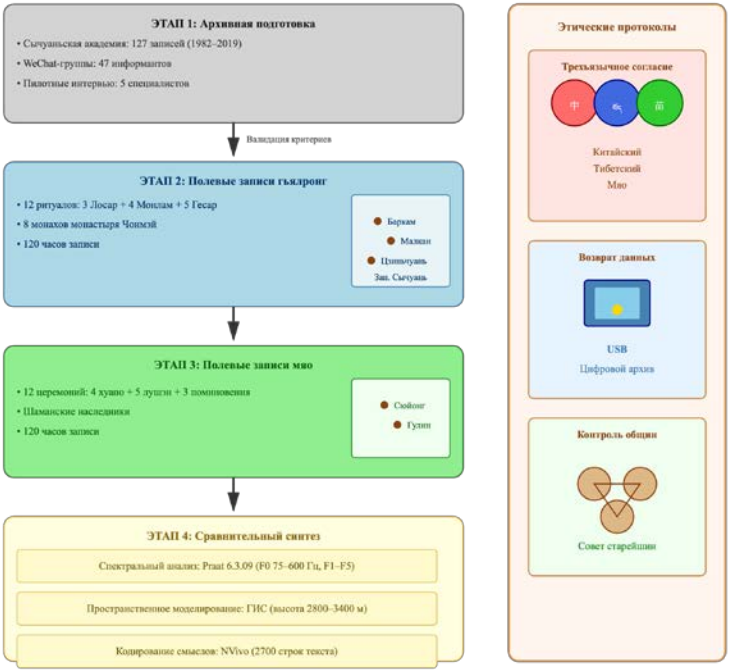

Неделя 2
Неделя 6
Неделя 12
Неделя 20
Джиттер (%)
1.0%
0.8%
0.6%
0.4%
Время фонации (с)
30с
25с
20с
15с
макс. скорость
Амплитуда формант (дБ)
86дБ
82дБ
78дБ
74дБ
M1
M2
M3
Экспертные оценки
9
7
5
0
4
8
12
16
20
Недели
Быстрая
Умеренная
Медленная
Легенда:
Джиттер
MPT
Форманты
Интонация
Тембр
Дыхание
Дикция
Экспрессивность
R² моделей:
Экспоненте: 0.94
Сигмоида: 0.97
Ступенчатая: 0.89
Удержание результатов: 78-91% (практика 2 раза/неделю)

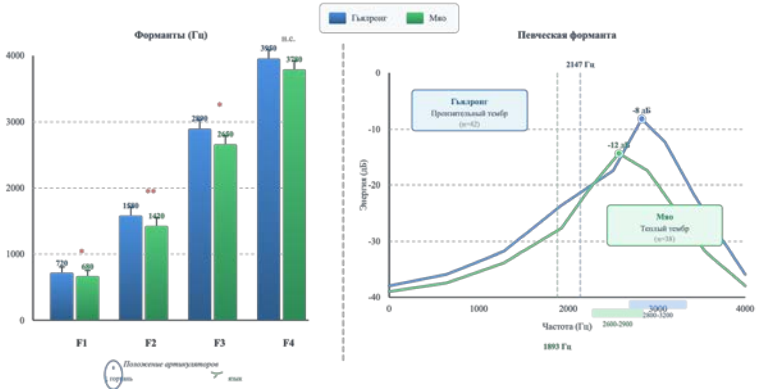

A
Возрастное распределение
Участники
30
15
0
14
28
26
20
12
6
18-21
22-25
26-29
30-33
34-37
38-40
Возраст (лет)
Boxplot
M = 26,4
(SD = 5,2)
B
Гендер и образование
Жен. 49,1%
(n = 52)
Муж. 50,9%
(n = 54)
Образование
Докт.
12,3%
Магистр
38,7%
Бакалавр
41,5%
C
Базовые показатели
MSSQ
15,2 ± 4,8
HSPS
3,4 ± 0,6
θ/α
1,12 ± 0,21
RMSSD
42,3 ± 12,1
RT
485 ± 67 мс
M ± SD
Диапазон
D
Стратификация выборки
С опытом
Без опыта
%
60
40
20
0
n=53
n=53
n=30
n=76
n=54
n=52
VR-опыт
M=12,3ч
Худ. обр.
Тип исп.

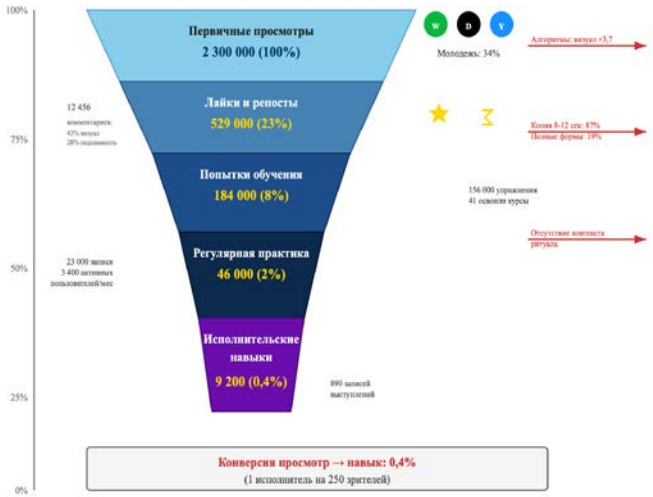

A. Танец — визуальная
σ = 4,2°
72% фиксаций
B. Танец — аудиовизуальная
σ = 8,7°
48% фиксаций
+107%
100%
75%
50%
25%
0%
Плотность фиксаций
C. Музыка — визуальная
68% фиксаций
D. Музыка — аудиовизуальная
51% фиксаций
Легенда:
— граница AOI
— эллипс рассеяния (±1σ)
— источник звука

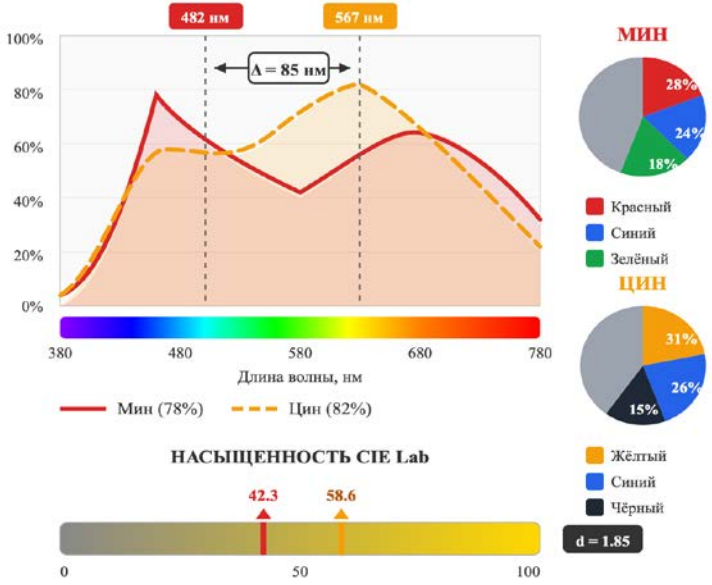

Гр. 1 ρ=0.68
Гр. 2 ρ=0.72
Гр. 3 ρ=0.65
Гр. 4 ρ=0.58
Гр. 5 ρ=0.71
Гр. 6 ρ=0.63
Гр. 7 ρ=0.69
Гр. 8 ρ=0.60
Гр. 9 ρ=0.67
Гр. 10 ρ=0.64
Распределение центральности
15
8
0
0.3 0.4 0.5 0.6 0.7 0.8
Смена лидеров
(недели в роли)
10
5
0
78%
Корреляция:
центральность × балл
r = 0.48**
Участники-"мосты"
(9 из 40 студентов)
186 сообщ./нед.
Связность: 0.34
(vs 0.11 у остальных)
Предиктивная сила
(10-я неделя)
β=0.42
Централь.
β=0.28
Нач. балл
Средний балл
по уровню центр.
84.3
>0.70
71.2
<0.40

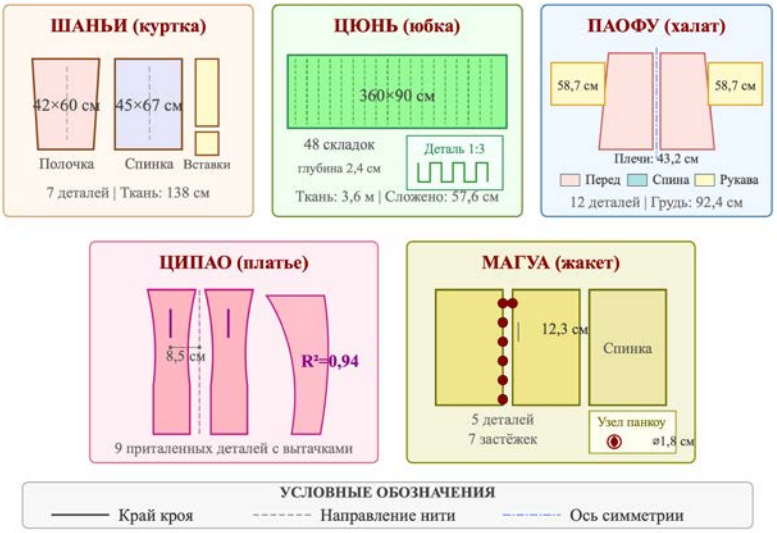

Praat Picture
File
Edit
Margins
World
Select
Pen
Font
1
2
3
4
5
6
0.6632
1
0
2
-0.6517
0.6632
0
3
-0.6517
0
179
Time (s)
4

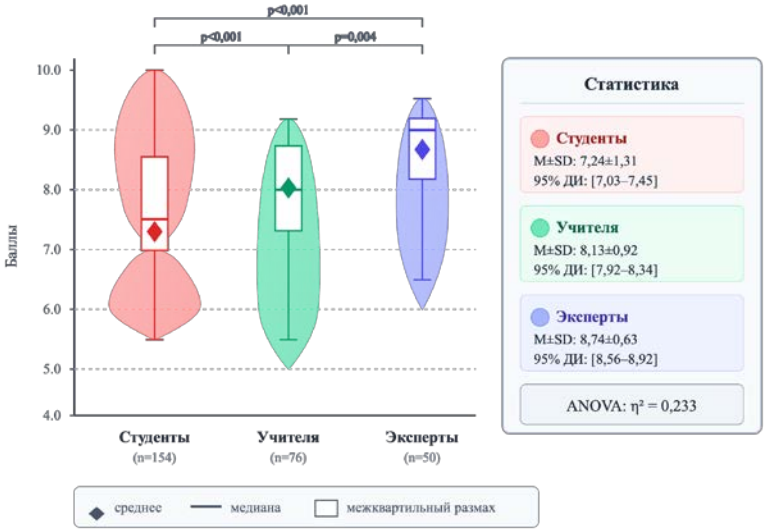

ЭТАП 1: Архивная подготовка
• Сычуаньская академия: 127 записей (1982–2019)
• WeChat-группы: 47 информантов
• Пилотные интервью: 5 специалистов
Валидация критериев
ЭТАП 2: Полевые записи гьялронг
• 12 ритуалов: 3 Лосар + 4 Монлам + 5 Гесар
• 8 монахов монастыря Чонмэй
• 120 часов записи
Баркам
Малкан
Цзяньчуань
Зап. Сычуань
ЭТАП 3: Полевые записи мяо
• 12 церемоний: 4 хуапо + 5 лушэн + 3 поминовения
• Шаманские наследники
• 120 часов записи
Сюйюн
Гулин
ЭТАП 4: Сравнительный синтез
Спектральный анализ: Praat 6.3.09 (F0 75–600 Гц, F1–F5)
Пространственное моделирование: ГИС (высота 2800–3400 м)
Кодирование смыслов: NVivo (2700 строк текста)
Этические протоколы
Трехъязычное согласие
Китайский
Тибетский
Мяо
Возврат данных
USB
Цифровой архив
Контроль общин
Совет старейшин

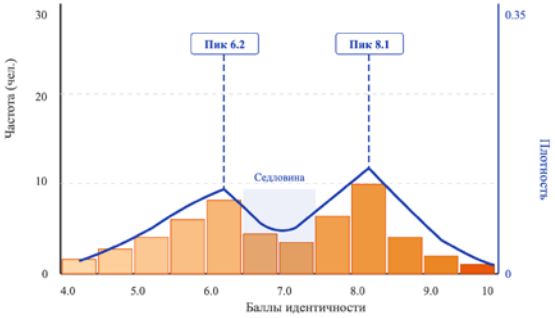

Гьялронг
Мяо
Форманты (Гц)
4000
3000
2000
1000
0
F1
F2
F3
F4
Положение артикулятора
Певческая форманта
2147 Гц
Гьялронг
Протяжный тембр
Мяо
Теплый тембр
Энергия (дБ)
Частота (Гц)
1893 Гц

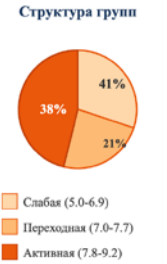

100%
75%
50%
25%
0%
Первичные просмотры
2 300 000 (100%)
Лайки и репосты
529 000 (23%)
Попытки обучения
184 000 (8%)
Регулярная практика
46 000 (2%)
Исполнительские навыки
9 200 (0,4%)
12 456
23 000 записи
3 400 активных пользователей/мес
890 записей выступлений
Молодежь: 34%
156 000 упражнения
41 освоили курсы
Конверсия просмотр → навык: 0,4%
(1 исполнитель на 250 зрителей)


482 нм
567 нм
Δ = 85 нм
100%
80%
60%
40%
20%
0%
380
480
580
680
780
Длина волны, нм
Мин (78%)
Цин (82%)
МИН
28%
24%
18%
Красный
Синий
Зелёный
ЦИН
31%
26%
15%
Жёлтый
Синий
Чёрный
НАСЫЩЕННОСТЬ CIE Lab
42.3
58.6
d = 1.85
0
50
100


ШАНЬИ (куртка)
42×60 см
45×67 см
Полочка
Спинка
Вставки
7 деталей | Ткань: 138 см
ЦЮНЬ (юбка)
360×90 см
48 складок
глубина 2,4 см
Деталь 1:3
Ткань: 3,6 м | Сложено: 57,6 см
ПАОФУ (халат)
58,7 см
58,7 см
Плечи: 43,2 см
Перед
Спина
Рукава
12 деталей | Грудь: 92,4 см
ЦИПАО (платье)
8,5 см
R²=0,94
9 приталенных деталей с вытачками
МАГУА (жакет)
12,3 см
Спинка
5 деталей
7 застёжек
Узел панкоу
⌀1,8 см
УСЛОВНЫЕ ОБОЗНАЧЕНИЯ
Край кроя
Направление нити
Ось симметрии

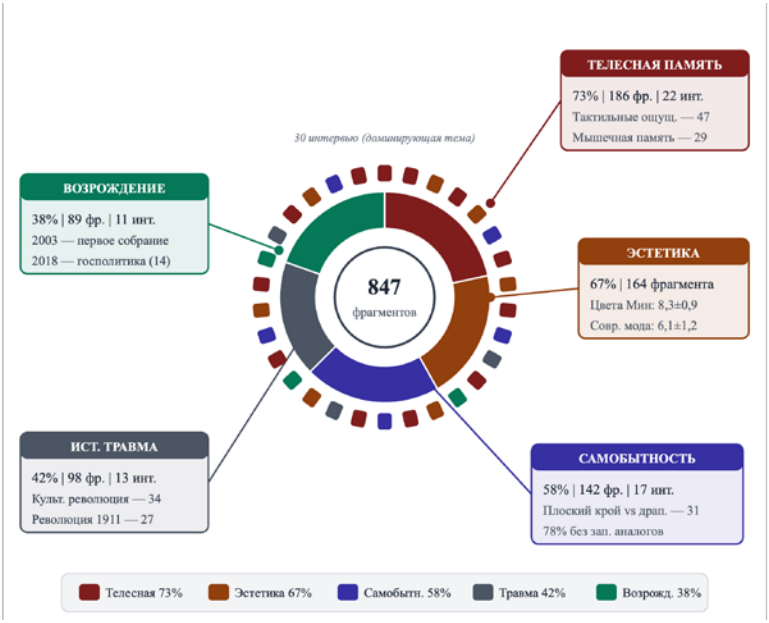

p<0,001
p<0,001
p=0,004
Баллы
10.0
9.0
8.0
7.0
6.0
5.0
4.0
Студенты
(n=154)
Учителя
(n=76)
Эксперты
(n=50)
среднее
медиана
межквартильный размах
Статистика
Студенты
M±SD: 7,24±1,31
95% ДИ: [7,03–7,45]
Учителя
M±SD: 8,13±0,92
95% ДИ: [7,92–8,34]
Эксперты
M±SD: 8,74±0,63
95% ДИ: [8,56–8,92]
ANOVA: η² = 0,233

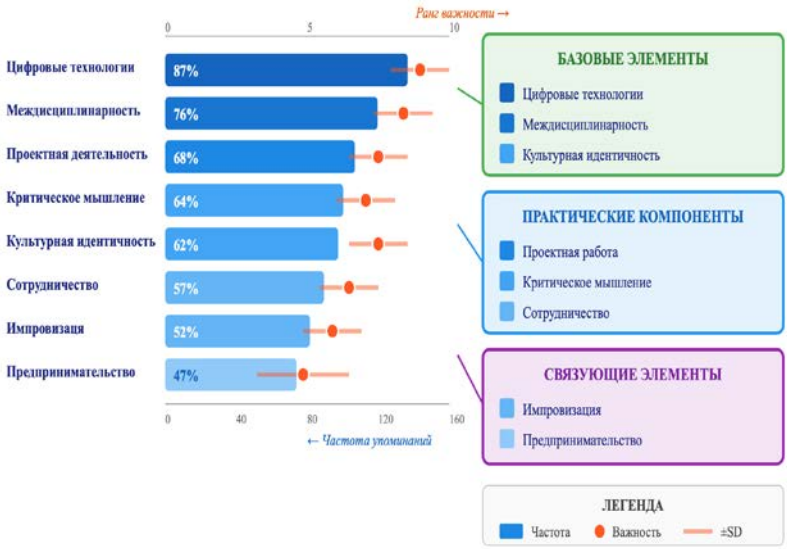

Пик 6.2
Пик 8.1
Седловина
Частота (чел.)
Плотность
Баллы идентичности
30
20
10
0
0.35
4.0
5.0
6.0
7.0
8.0
9.0
10

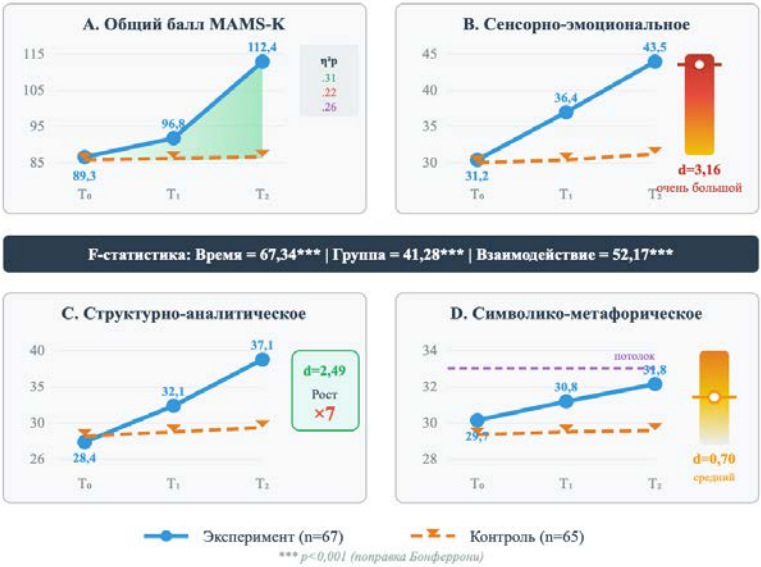

Структура групп
41%
38%
21%
Слабая (5.0-6.9)
Переходная (7.0-7.7)
Активная (7.8-9.2)

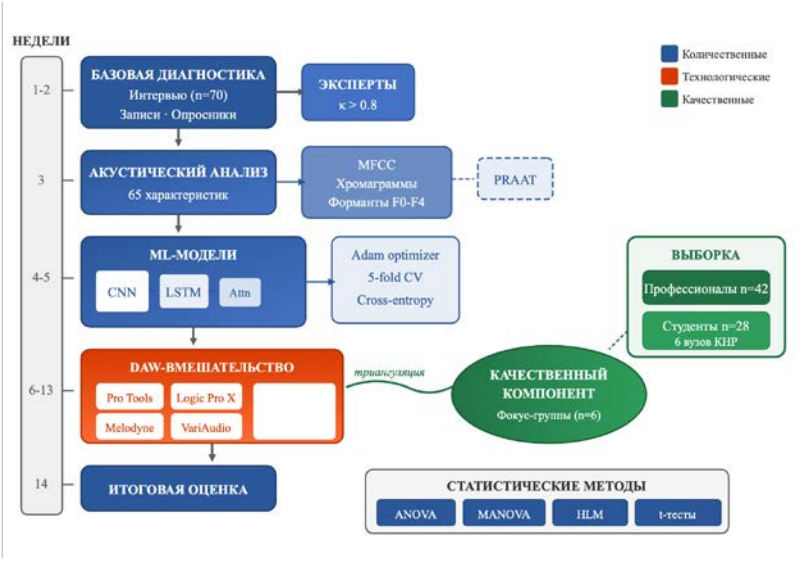

Время обдумывания ответов (r = -0.52)
21.7 сек
12.3 сек
25 сек
17 сек
10 сек
4.0
7.0
10.0
Баллы идентичности

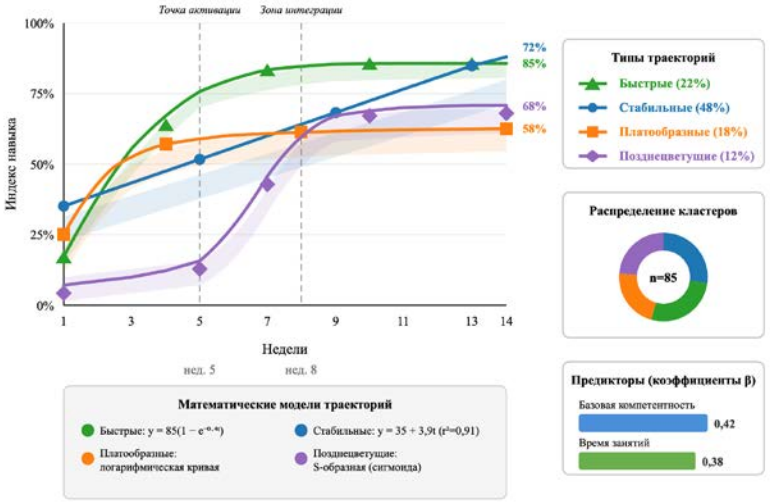

Статистика
F(2,277) = 42.18
η² = 0.233
p < 0.001

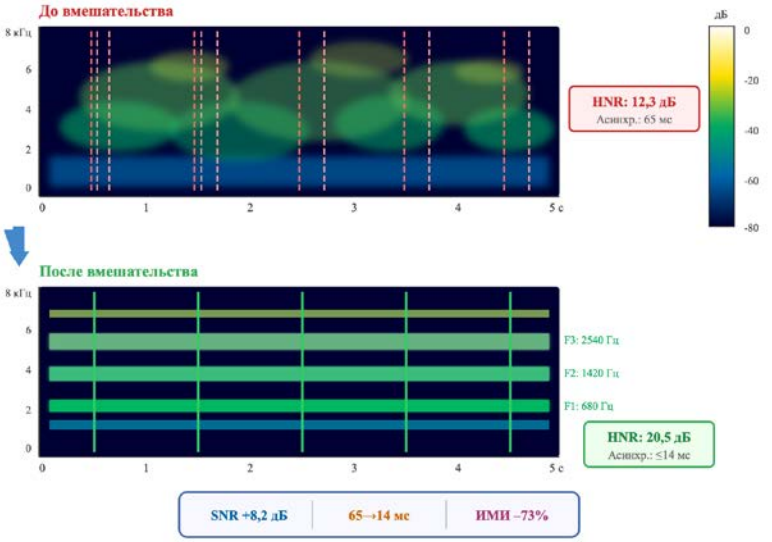

30 интервью (доминирующая тема)
847
фрагментов
ТЕЛЕСНАЯ ПАМЯТЬ
73% | 186 фр. | 22 инт.
Тактильные ощущ. — 47
Мышечная память — 29
ВОЗРОЖДЕНИЕ
38% | 89 фр. | 11 инт.
2003 — первое собрание
2018 — госполитика (14)
ЭСТЕТИКА
67% | 164 фрагмента
Цвета Мин: 8,3±0,9
Совр. мода: 6,1±1,2
ИСТ. ТРАВМА
42% | 98 фр. | 13 инт.
Культ. революция — 34
Революция 1911 — 27
САМОБЫТНОСТЬ
58% | 142 фр. | 17 инт.
Плоский крой vs драп. — 31
78% без зап. аналогов
Телесная 73%
Эстетика 67%
Самобытн. 58%
Травма 42%
Возрожд. 38%

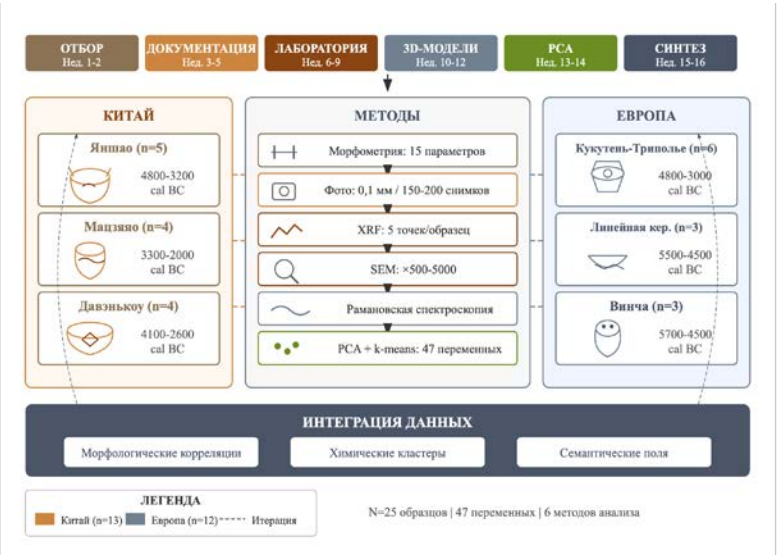

Ранг важности →
0
5
10
Цифровые технологии
87%
Междисциплинарность
76%
Проектная деятельность
68%
Критическое мышление
64%
Культурная идентичность
62%
Сотрудничество
57%
Импровизация
52%
Предпринимательство
47%
0
40
80
120
160
← Частота упоминаний
БАЗОВЫЕ ЭЛЕМЕНТЫ
Цифровые технологии
Междисциплинарность
Культурная идентичность
ПРАКТИЧЕСКИЕ КОМПОНЕНТЫ
Проектная работа
Критическое мышление
Сотрудничество
СВЯЗУЮЩИЕ ЭЛЕМЕНТЫ
Импровизация
Предпринимательство
ЛЕГЕНДА
Частота
Важность
±SD

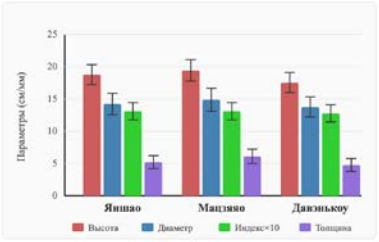

A. Общий балл MAMS-K
115
105
95
85
89,3
96,8
112,4
T₀
T₁
T₂
η²p
.31
.22
.26
B. Сенсорно-эмоциональное
45
40
35
30
31,2
36,4
43,5
d=3,16
очень большой
F-статистика: Время = 67,34*** | Группа = 41,28*** | Взаимодействие = 52,17***
C. Структурно-аналитическое
40
35
30
26
28,4
32,1
37,1
d=2,49
Рост
×7
D. Символико-метафорическое
34
32
30
28
потолок
29,7
30,8
31,8
d=0,70
средний
Эксперимент (n=67)
Контроль (n=65)
*** p<0,001 (поправка Бонферрони)


НЕДЕЛИ
1-2
3
4-5
6-13
14
БАЗОВАЯ ДИАГНОСТИКА
Интервью (n=70)
Записи · Опросники
ЭКСПЕРТЫ
κ > 0.8
АКУСТИЧЕСКИЙ АНАЛИЗ
65 характеристик
MFCC
Хромаграммы
Форманты F0-F4
PRAAT
ML-МОДЕЛИ
CNN
LSTM
Attn
Adam optimizer
5-fold CV
Cross-entropy
DAW-ВМЕШАТЕЛЬСТВО
Pro Tools
Logic Pro X
Melodyne
VariAudio
триангуляция
КАЧЕСТВЕННЫЙ КОМПОНЕНТ
Фокус-группы (n=6)
ВЫБОРКА
Профессионалы n=42
Студенты n=28
6 вузов КНР
ИТОГОВАЯ ОЦЕНКА
СТАТИСТИЧЕСКИЕ МЕТОДЫ
ANOVA
MANOVA
HLM
t-тесты
Количественные
Технологические
Качественные

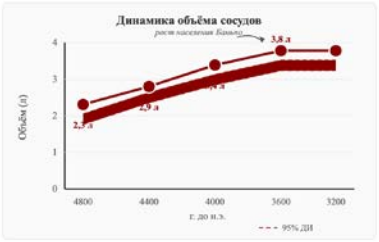

Точка активации
Зона интеграции
Индекс навыка
100%
75%
50%
25%
0%
1
3
5
7
9
11
13
14
Недели
нед. 5
нед. 8
72%
85%
68%
58%
Типы траекторий
Быстрые (22%)
Стабильные (48%)
Платообразные (18%)
Позднецветущие (12%)
Распределение кластеров
n=85
Предикторы (коэффициенты β)
Базовая компетентность
0,42
Время занятий
0,38
Математические модели траекторий
Быстрые: y = 85(1 − e^−0.4t)
Стабильные: y = 35 + 3,9t (r²=0,91)
Платообразные: логарифмическая кривая
Позднецветущие: S-образная (сигмоида)


До вмешательства
8 кГц
6
4
2
0
0
1
2
3
4
5 с
дБ
0
-20
-40
-60
-80
HNR: 12,3 дБ
Асинхр.: 65 мс
После вмешательства
F3: 2540 Гц
F2: 1420 Гц
F1: 680 Гц
HNR: 20,5 дБ
Асинхр.: ≤14 мс
SNR +8,2 дБ
65→14 мс
ИМИ −73%

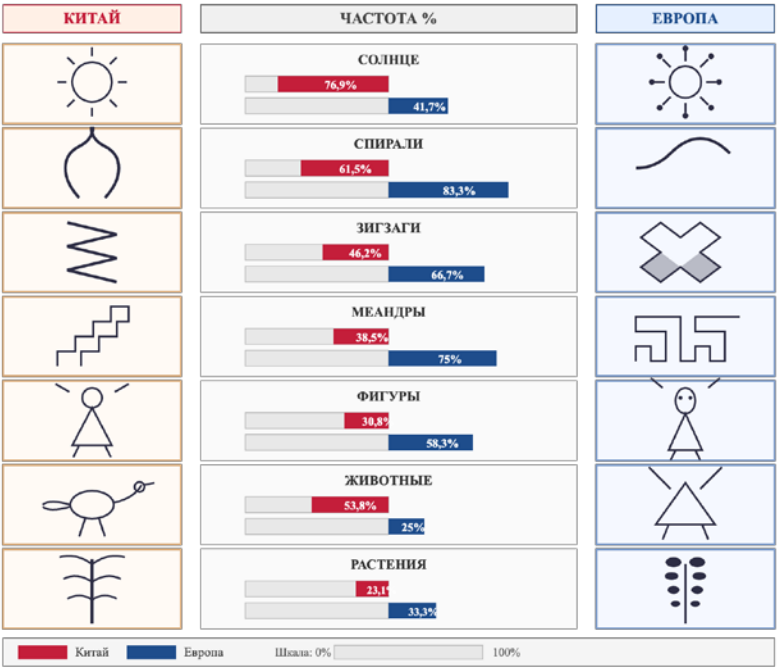

ОТБОР
Нед. 1-2
ДОКУМЕНТАЦИЯ
Нед. 3-5
ЛАБОРАТОРИЯ
Нед. 6-9
3D-МОДЕЛИ
Нед. 10-12
PCA
Нед. 13-14
СИНТЕЗ
Нед. 15-16
КИТАЙ
Яншао (n=5)
4800-3200 cal BC
Мацзяо (n=4)
3300-2000 cal BC
Давэнькоу (n=4)
4100-2600 cal BC
МЕТОДЫ
Морфометрия: 15 параметров
Фото: 0,1 мм / 150-200 снимков
XRF: 5 точек/образец
SEM: ×500-5000
Рамановская спектроскопия
PCA + k-means: 47 переменных
ЕВРОПА
Кукутень-Триполье (n=6)
4800-3000 cal BC
Линейная кер. (n=3)
5500-4500 cal BC
Винча (n=3)
5700-4500 cal BC
ИНТЕГРАЦИЯ ДАННЫХ
Морфологические корреляции
Химические кластеры
Семантические поля
ЛЕГЕНДА
Китай (n=13)
Европа (n=12)
Итерация
N=25 образцов | 47 переменных | 6 методов анализа

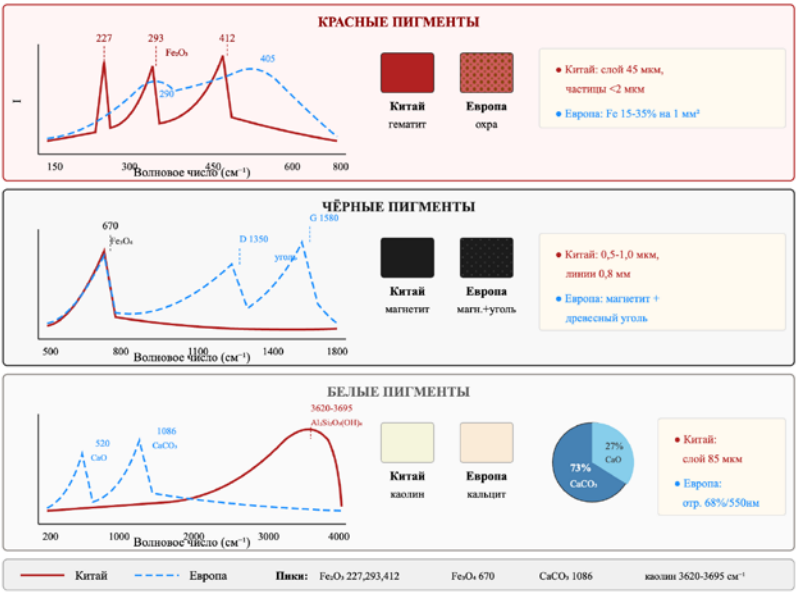

Параметры (см/мм)
25
20
15
10
5
0
Яншао
Мацзяо
Давэнькоу
Высота
Диаметр
Индекс×10
Толщина

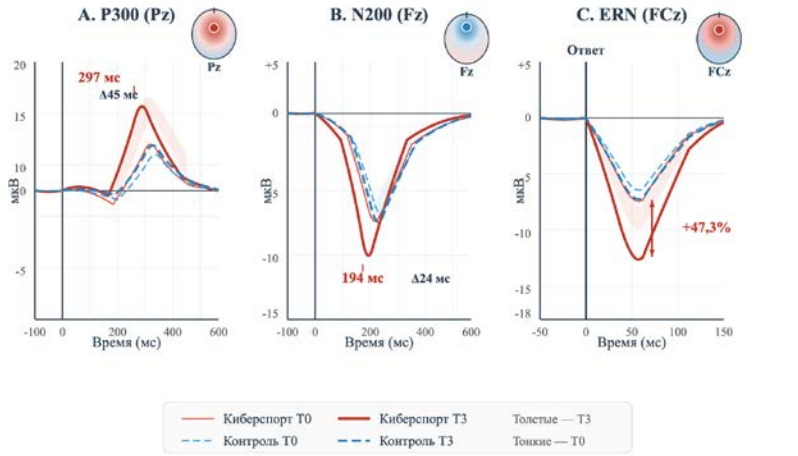

Высота
Диаметр
Индекс
Толщина
Объём
Яншао
Мацзяо
Давэнькоу

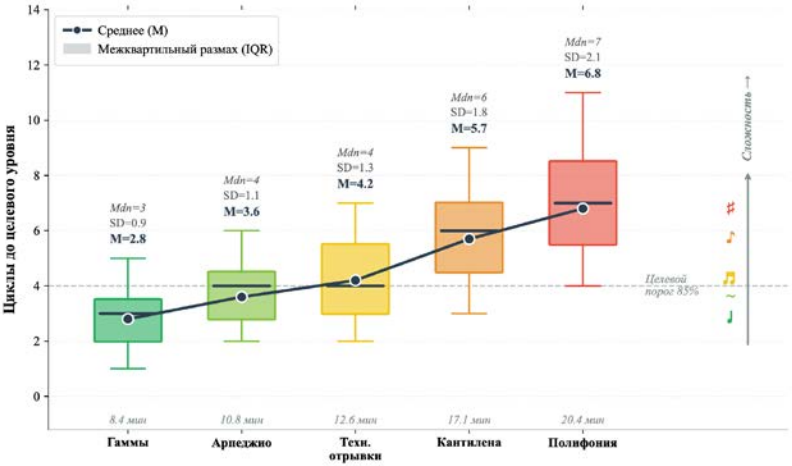

Динамика объёма сосудов
рост населения Банпо
3,8 л
3,4 л
2,9 л
2,2 л
Объём (л)
4
3
2
1
0
4800
4400
4000
3600
3200
95% ДИ


Толщина стенки — Температура обжига
T = 1150 − 65t
r = −0,78; p < 0,01
Температура (°C)
1000
900
800
700
4
5
6
7
Толщина стенки (мм)
Яншао
Мацзяо
Давэнькоу


КИТАЙ
ЧАСТОТА %
ЕВРОПА
СОЛНЦЕ
76,9%
41,7%
СПИРАЛИ
61,5%
83,3%
ЗИГЗАГИ
46,2%
66,7%
МЕАНДРЫ
38,5%
75%
ФИГУРЫ
30,8%
58,3%
ЖИВОТНЫЕ
53,8%
25%
РАСТЕНИЯ
23,1
33,3%
Китай
Европа
Шкала: 0%
100%


КРАСНЫЕ ПИГМЕНТЫ
227
293
412
Fe₂O₃
405
290
I
150
300
450
600
800
Волновое число (см⁻¹)
Китай
гематит
Европа
охра
• Китай: слой 45 мкм, частицы <2 мкм
• Европа: Fe 15-35% на 1 мм²
ЧЁРНЫЕ ПИГМЕНТЫ
670
Fe₃O₄
D 1350
G 1580
уголь
500
800
1100
1400
1800
Волновое число (см⁻¹)
Китай
магнетит
Европа
магн.+уголь
• Китай: 0,5-1,0 мкм, линии 0,8 мм
• Европа: магнетит + древесный уголь
БЕЛЫЕ ПИГМЕНТЫ
3620-3695
Al₂Si₂O₅(OH)₄
520
CaO
1086
CaCO₃
200
1000
2000
3000
4000
Волновое число (см⁻¹)
Китай
каолин
Европа
кальцит
27% CaO
73% CaCO₃
• Китай: слой 85 мкм
• Европа: отр. 68%/550нм
Китай
Европа
Пики: Fe₂O₃ 227,293,412
Fe₃O₄ 670
CaCO₃ 1086
каолин 3620-3695 см⁻¹


A. P300 (Pz)
Pz
297 мс
Δ45 мс
мкВ
Время (мс)
B. N200 (Fz)
Fz
194 мс
Δ24 мс
мкВ
Время (мс)
C. ERN (FCz)
FCz
Ответ
+47,3%
мкВ
Время (мс)
Киберспорт Т0
Контроль Т0
Киберспорт Т3
Контроль Т3
Толстые — Т3
Тонкие — Т0



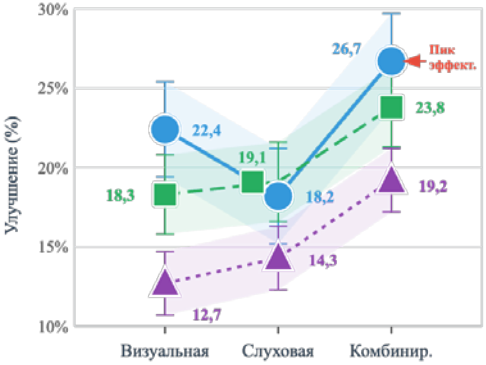


Таблица ANOVA

Уровень	F	p	η^2
Новички	4,12	0,008	0,08
Средний	2,94	0,034	0,05
Продвинутый	3,28	0,012	0,06

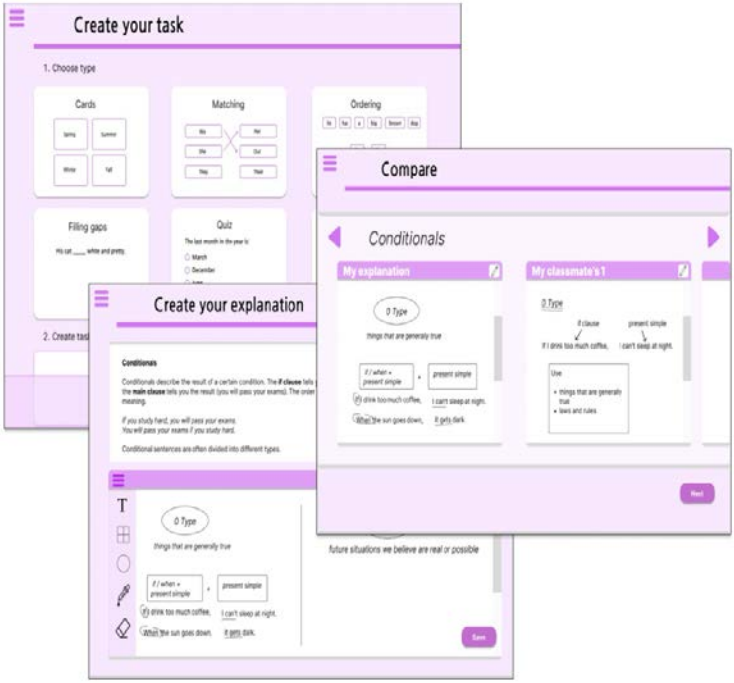
Жёлтый фон — значимые результаты ($p < 0,05$); $F_{общ.}=3,28$; $\eta^2=0,06$

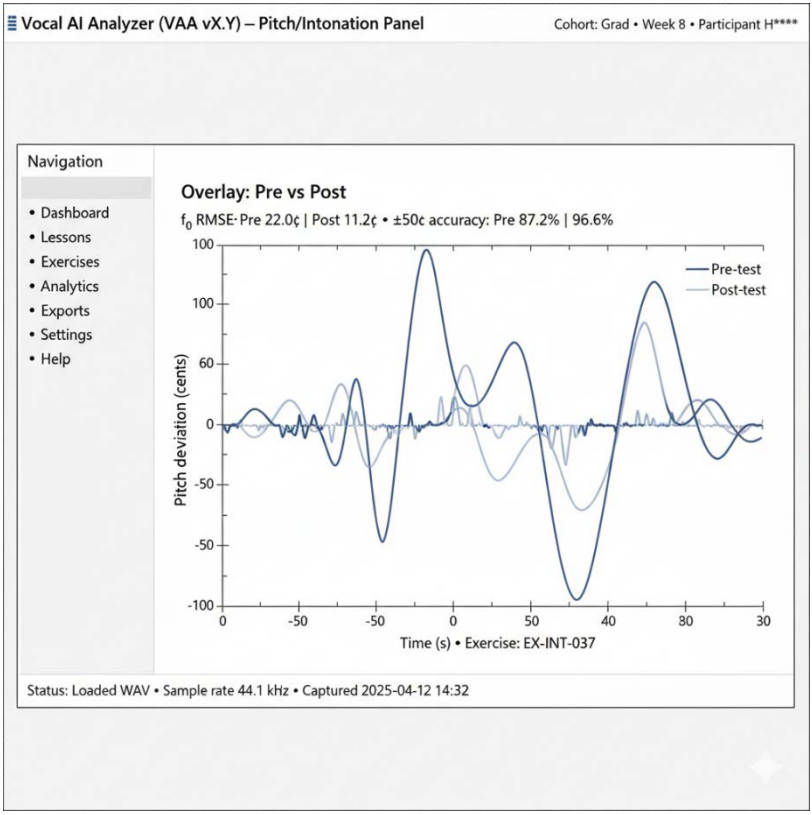
Error-driven problematization → divergent/convergent thinking → learning outcomes

Inputs	Platform mechanisms	Learning processes	Outcomes
• Baseline English level (elementary+) • Course topics & task bank • Instructor guidance (fidelity support)	• Automatic error detection • Error list by grammar category • Peer solution review • Learner-generated remedial tasks/materials • Teacher feedback	• Error awareness & metalinguistic monitoring • Strategy construction & self-repair • Comparison and reflection • Divergent + convergent thinking	• Achievement (course test) • Creativity (TTCT-Verbal) • Motivation (survey)

Measurement & theoretical grounding

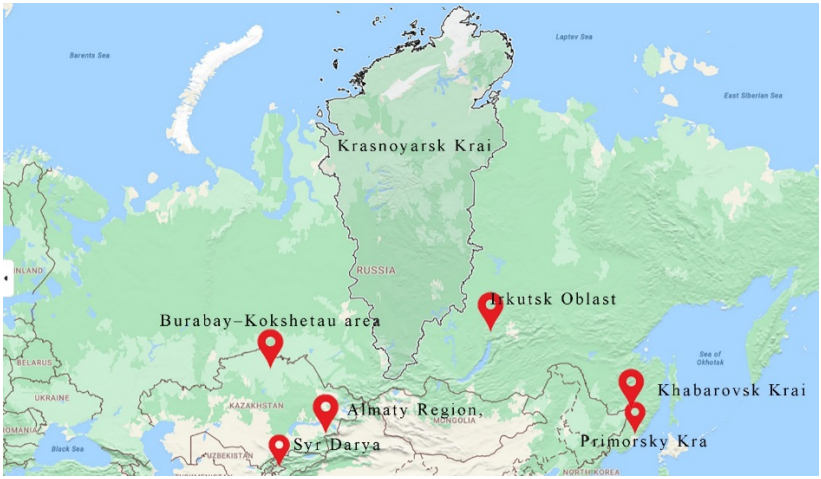
- Creativity measured via TTCT-Verbal (Torrance, 2000); divergent thinking rationale based on SOI tradition.
- Pre/post evaluation: achievement test, creativity, and motivation; parametric t-tests used for comparisons.

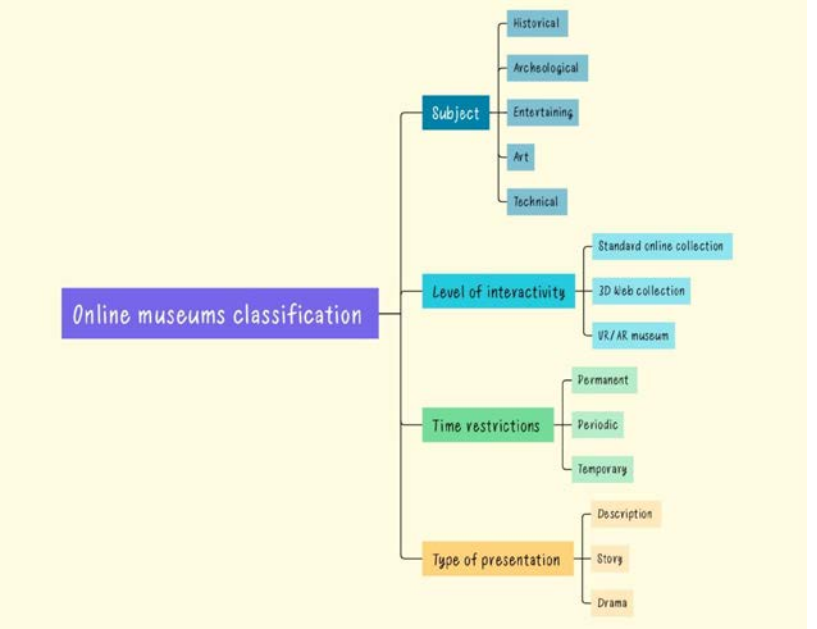



Vocal AI Analyzer (VAA vX.Y) – Pitch/Intonation Panel
Cohort: Grad • Week 8 • Participant H****
Navigation
• Dashboard
• Lessons
• Exercises
• Analytics
• Exports
• Settings
• Help
Overlay: Pre vs Post
f0 RMSE· Pre 22.0¢ | Post 11.2¢ • ±50¢ accuracy: Pre 87.2% | 96.6%
Pre-test
Post-test
Pitch deviation (cents)
Time (s) • Exercise: EX-INT-037
Status: Loaded WAV • Sample rate 44.1 kHz • Captured 2025-04-12 14:32


SOUNDRAW
Generate Music
License
FAQ
For Businesses
Pricing
Log in
Dreamy
Euphoric
Fear
Heavy & Ponderous
Peaceful
Restless
Sad
Scary
Suspense
Generate
Orchestra
Add more
Clear all
0001
Orchestra
Epic, Mysterious, Photography, ...
Cm
110 BPM
2:56
Mixer
Quiet
Quiet
Quiet
Extreme
Intense
Quiet
Mid
Quiet
Quiet
Quiet
Extreme
Melody
Backing
Bass
Drum


Krasnoyarsk
Irkutsk
Khabarovsk
Vladivostok

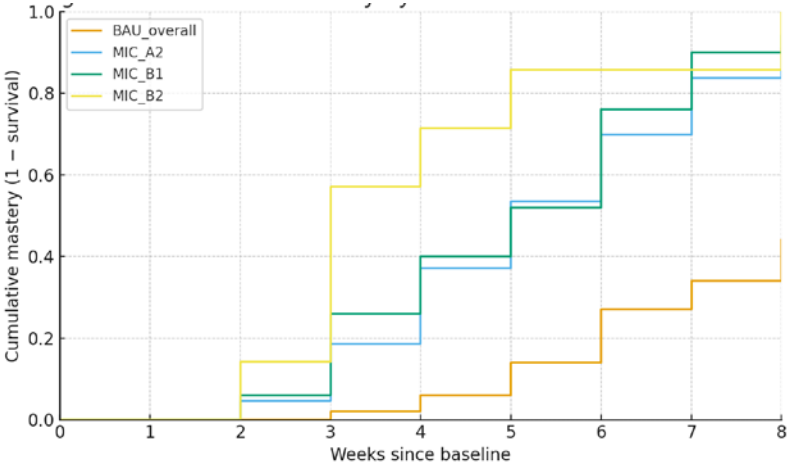

Barents Sea
Laptev Sea
East Siberian Sea
Krasnoyarsk Krai
RUSSIA
Irkutsk Oblast
Burabay–Kokshetau area
Almaty Region
Syr Darya
Khabarovsk Krai
Primorsky Kra
Sea of Okhotsk
KAZAKHSTAN
MONGOLIA
UZBEKISTAN
NORTH KOREA
BELARUS
UKRAINE
Black Sea

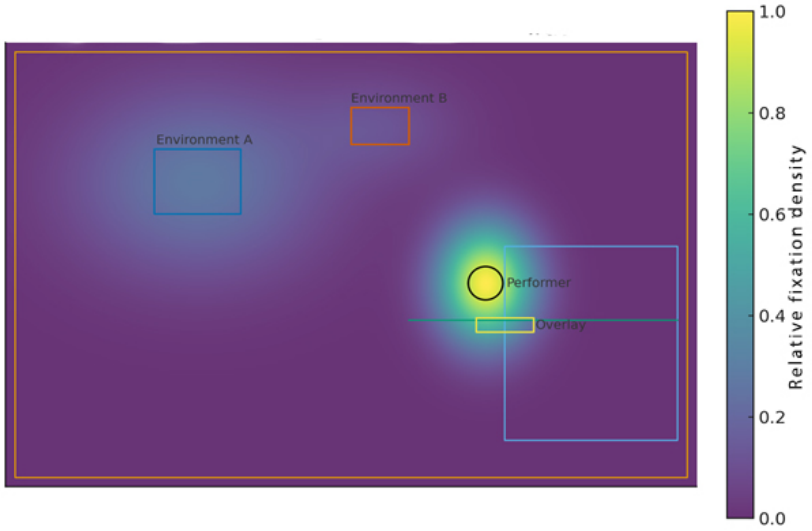

Online museums classification
Subject
Historical
Archeological
Entertaining
Art
Technical
Level of interactivity
Standard online collection
3D Web collection
VR/AR museum
Time restrictions
Permanent
Periodic
Temporary
Type of presentation
Description
Story
Drama

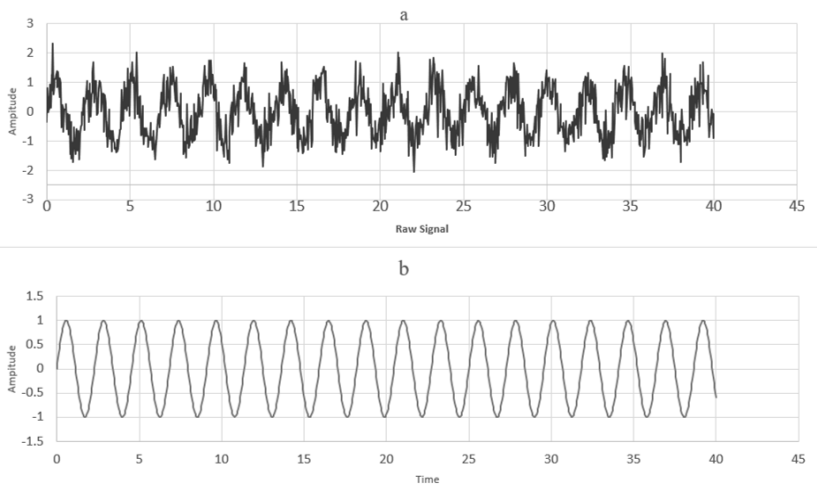
C

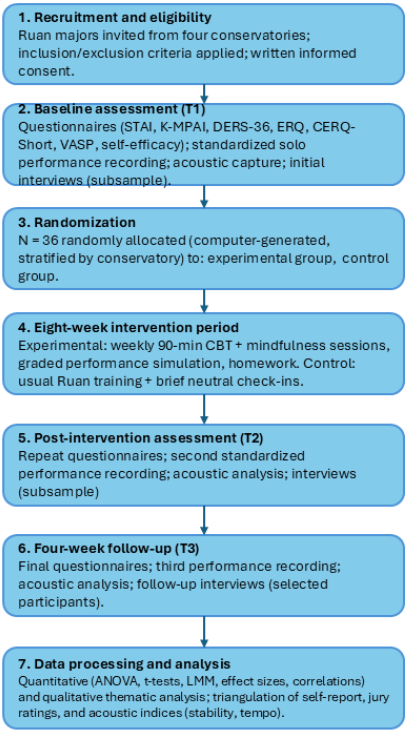

07:00

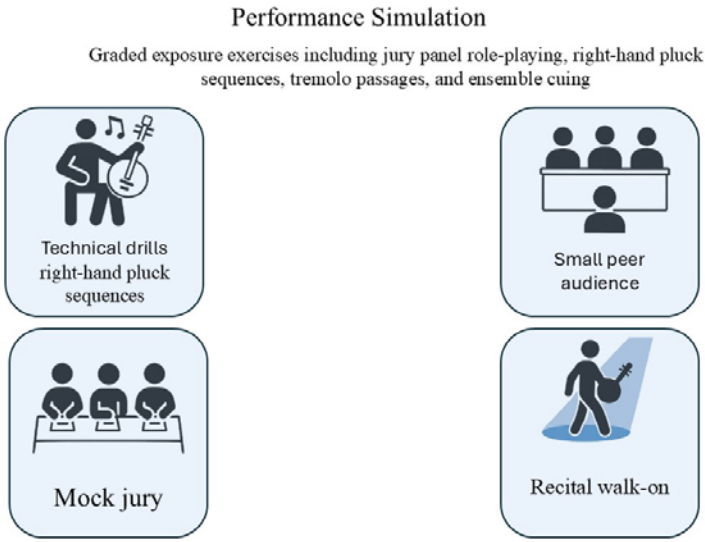

a
stand
v.忍受，承受
记忆方法
v.忍受，承受
to tolerate sth without being hurt or damaged
近义词
bear , tolerate , withstand
词组搭配
例句
I can't stand people interrupting all the time.
TPO 06 Reading 1
b
日常交际
订阅：3.53万
订阅
共11个课程
01期：日常交际篇-见面打招呼
02期：日常交际篇-偶遇老友
03期：日常交际篇-邀约
04期：日常交际篇-到别人家做客
05期：日常交际篇-道歉
c
VOA慢速新闻
科技
科学
健康
教育

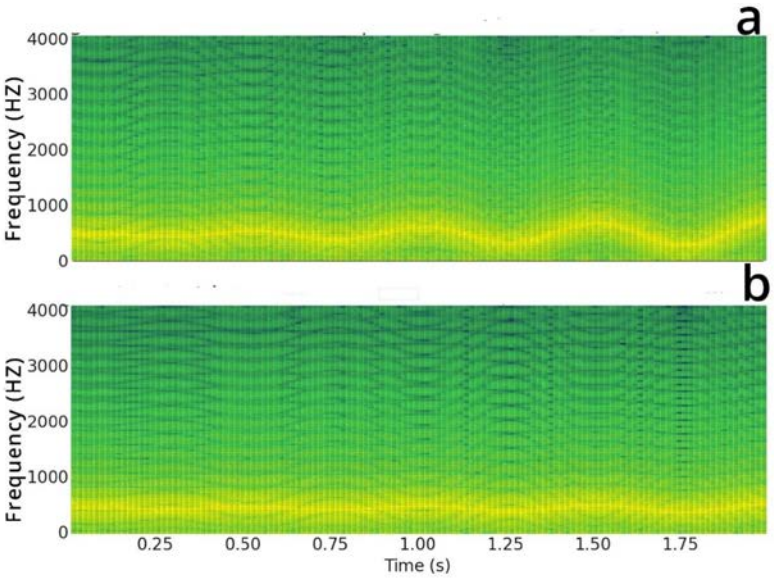

BAU_overall
MIC_A2
MIC_B1
MIC_B2
Cumulative mastery (1 − survival)
Weeks since baseline
0.0
0.2
0.4
0.6
0.8
1.0
0
1
2
3
4
5
6
7
8

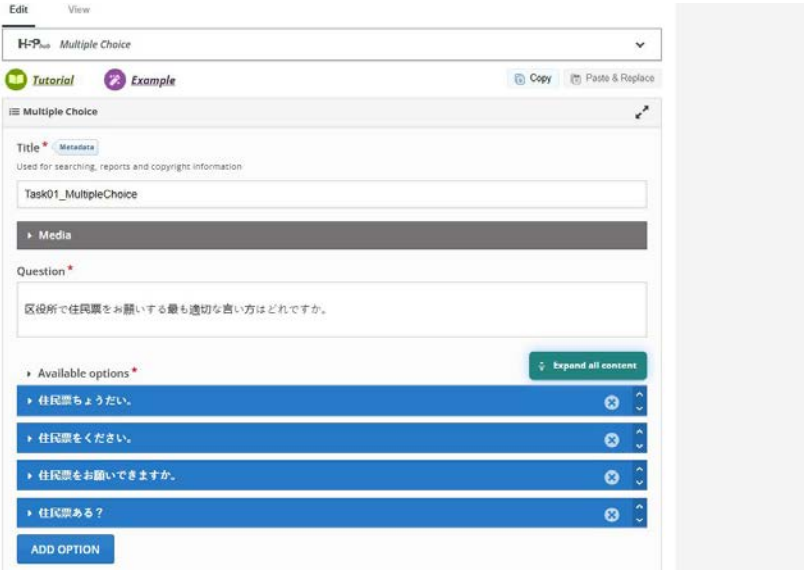

Environment A
Environment B
Performer
Overlay
Relative fixation density
1.0
0.8
0.6
0.4
0.2
0.0


a
Amplitude
Raw Signal
b
Amplitude
Time

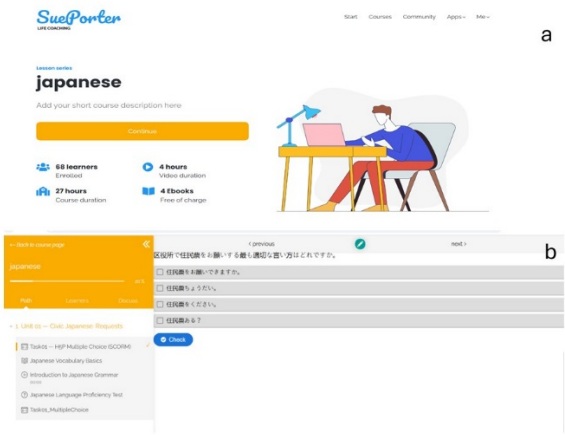

1. Recruitment and eligibility
Ruan majors invited from four conservatories; inclusion/exclusion criteria applied; written informed consent.
2. Baseline assessment (T1)
Questionnaires (STAI, K-MPAI, DERS-36, ERQ, CERQ-Short, VASP, self-efficacy); standardized solo performance recording; acoustic capture; initial interviews (subsample).
3. Randomization
N = 36 randomly allocated (computer-generated, stratified by conservatory) to: experimental group, control group.
4. Eight-week intervention period
Experimental: weekly 90-min CBT + mindfulness sessions, graded performance simulation, homework. Control: usual Ruan training + brief neutral check-ins.
5. Post-intervention assessment (T2)
Repeat questionnaires; second standardized performance recording; acoustic analysis; interviews (subsample)
6. Four-week follow-up (T3)
Final questionnaires; third performance recording; acoustic analysis; follow-up interviews (selected participants).
7. Data processing and analysis
Quantitative (ANOVA, t-tests, LMM, effect sizes, correlations) and qualitative thematic analysis; triangulation of self-report, jury ratings, and acoustic indices (stability, tempo).


Performance Simulation
Graded exposure exercises including jury panel role-playing, right-hand pluck sequences, tremolo passages, and ensemble cuing
Technical drills right-hand pluck sequences
Small peer audience
Mock jury
Recital walk-on

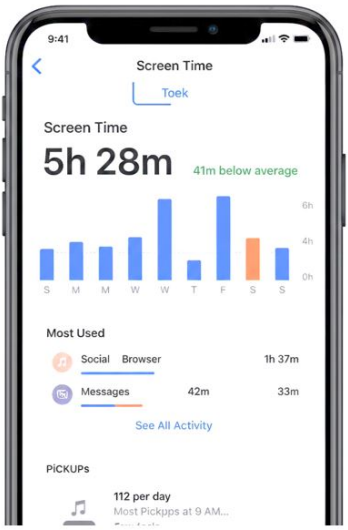

a
b
4000
3000
2000
1000
0
Frequency (HZ)
0.25
0.50
0.75
1.00
1.25
1.50
1.75
Time (s)

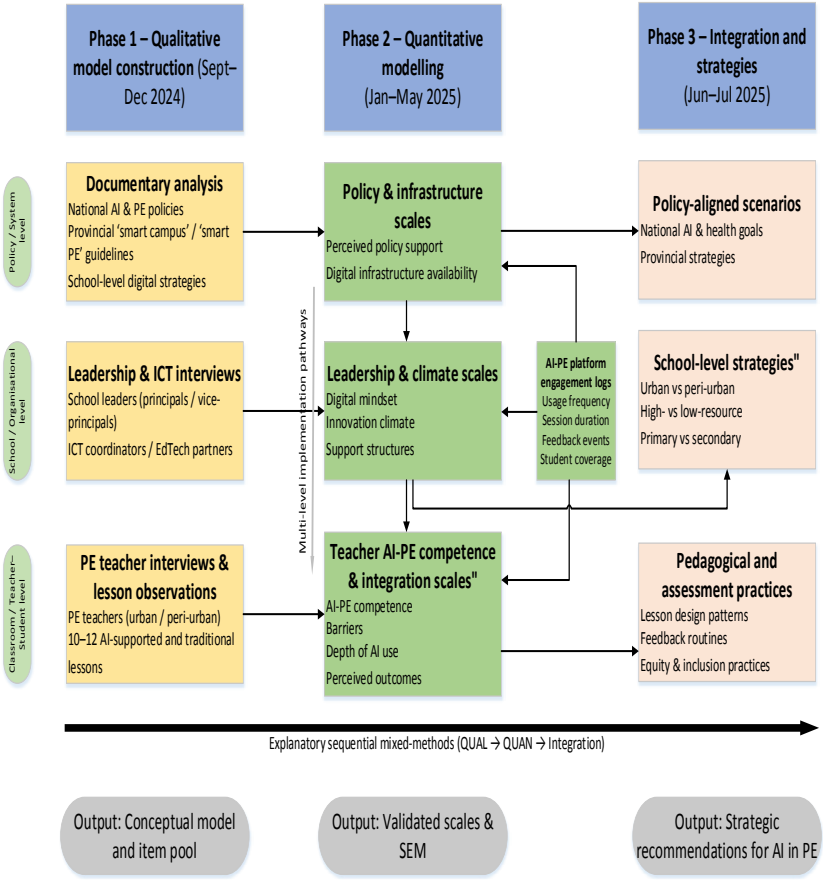

Edit
View
Multiple Choice
Tutorial
Example
Copy
Paste & Replace
Multiple Choice
Title *
Metadata
Used for searching, reports and copyright information
Task01_MultipleChoice
Media
Question *
区役所で住民票をお願いする最も適切な言い方はどれですか。
Available options *
Expand all content
住民票ちょうだい。
住民票をください。
住民票をお願いできますか。
住民票ある？
ADD OPTION

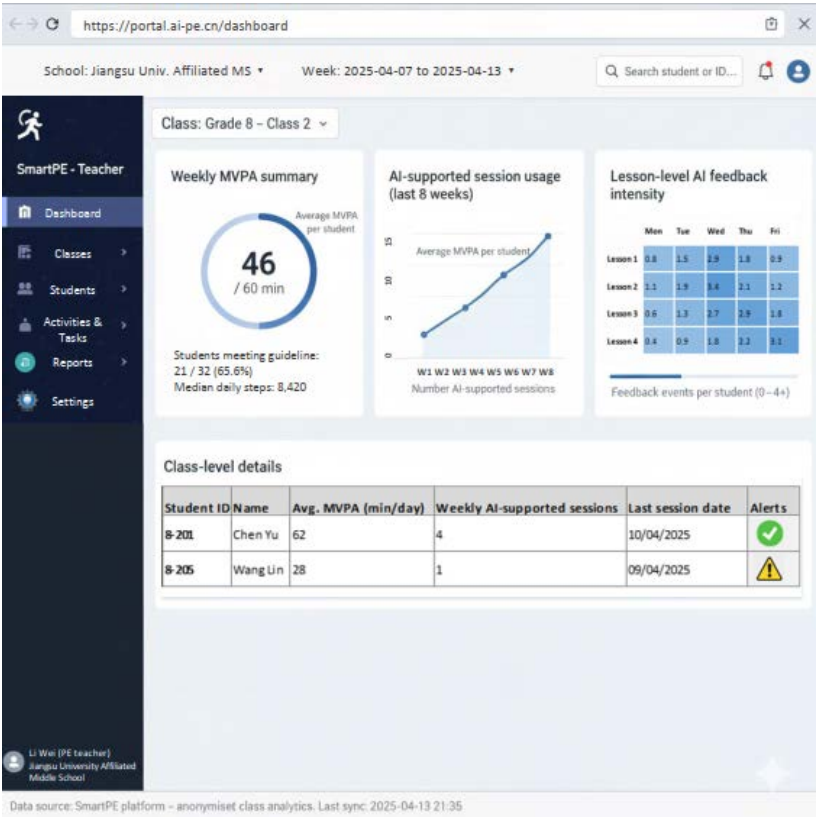
.

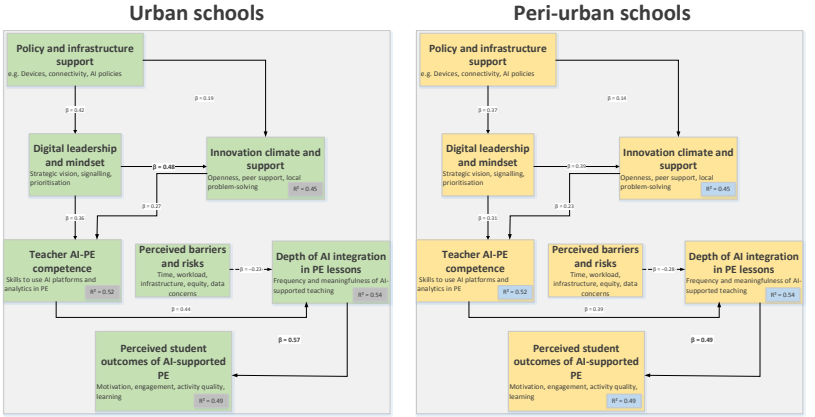

SuePorter
Start
Courses
Community
Apps
Me
a
japanese
Add your short course description here
Continue
68 learners
Enrolled
4 hours
Video duration
27 hours
Course duration
4 Ebooks
Free of charge
b
Japanese
Check


4:22 PM
Digital Wellbeing & parental controls
Screen time
Tue, Apr 23 - Mon, Apr 29
4h 12m
18m below average
6h 05m
7h
3h
0h
S T W T F S
Most used
Social 1h 08m
Browser 39m
Messaging 34m
Music 26m
No device limits


9:41
Screen Time
Toek
Screen Time
5h 28m
41m below average
6h
4h
0h
S M M W W T F S S
Most Used
Social Browser 1h 37m
Messages 42m 33m
See All Activity
PICKUPS
112 per day
Most Pickups at 9 AM...


Phase 1 – Qualitative model construction (Sept–Dec 2024)
Phase 2 – Quantitative modelling (Jan–May 2025)
Phase 3 – Integration and strategies (Jun–Jul 2025)
Policy / System level
School / Organisational level
Classroom / Teacher–Student level
Documentary analysis
National AI & PE policies
Provincial 'smart campus' / 'smart PE' guidelines
School-level digital strategies
Leadership & ICT interviews
School leaders (principals / vice-principals)
ICT coordinators / EdTech partners
PE teacher interviews & lesson observations
PE teachers (urban / peri-urban)
10–12 AI-supported and traditional lessons
Multi-level implementation pathways
Policy & infrastructure scales
Perceived policy support
Digital infrastructure availability
Leadership & climate scales
Digital mindset
Innovation climate
Support structures
Teacher AI-PE competence & integration scales"
AI-PE competence
Barriers
Depth of AI use
Perceived outcomes
AI-PE platform engagement logs
Usage frequency
Session duration
Feedback events
Student coverage
Policy-aligned scenarios
National AI & health goals
Provincial strategies
School-level strategies"
Urban vs peri-urban
High- vs low-resource
Primary vs secondary
Pedagogical and assessment practices
Lesson design patterns
Feedback routines
Equity & inclusion practices
Explanatory sequential mixed-methods (QUAL → QUAN → Integration)
Output: Conceptual model and item pool
Output: Validated scales & SEM
Output: Strategic recommendations for AI in PE


https://portal.ai-pe.cn/dashboard
School: Jiangsu Univ. Affiliated MS
Week: 2025-04-07 to 2025-04-13
Search student or ID...
SmartPE - Teacher
Dashboard
Classes
Students
Activities & Tasks
Reports
Settings
Class: Grade 8 – Class 2
Weekly MVPA summary
Average MVPA per student
46
/ 60 min
Students meeting guideline: 21 / 32 (65.6%)
Median daily steps: 8,420
AI-supported session usage (last 8 weeks)
Average MVPA per student
W1 W2 W3 W4 W5 W6 W7 W8
Number AI-supported sessions
Lesson-level AI feedback intensity
Mon Tue Wed Thu Fri
Lesson 1 0.8 1.5 1.9 1.8 0.9
Lesson 2 1.1 1.9 1.4 2.1 1.2
Lesson 3 0.6 1.3 2.7 2.9 1.8
Lesson 4 0.4 0.9 1.8 2.2 3.1
Feedback events per student (0–4+)
Class-level details
Student ID Name Avg. MVPA (min/day) Weekly AI-supported sessions Last session date Alerts
8-201 Chen Yu 62 4 10/04/2025
8-205 Wang Lin 28 1 09/04/2025
Li Wei (PE teacher)
Jiangsu University Affiliated Middle School
Data source: SmartPE platform – anonymised class analytics. Last sync: 2025-04-13 21:35


Urban schools
Policy and infrastructure support
e.g. Devices, connectivity, AI policies
Digital leadership and mindset
Strategic vision, signalling, prioritisation
Innovation climate and support
Openness, peer support, local problem-solving
Teacher AI-PE competence
Skills to use AI platforms and analytics in PE
Perceived barriers and risks
Time, workload, infrastructure, equity, data concerns
Depth of AI integration in PE lessons
Frequency and meaningfulness of AI-supported teaching
Perceived student outcomes of AI-supported PE
Motivation, engagement, activity quality, learning
Peri-urban schools
Policy and infrastructure support
e.g. Devices, connectivity, AI policies
Digital leadership and mindset
Strategic vision, signalling, prioritisation
Innovation climate and support
Openness, peer support, local problem-solving
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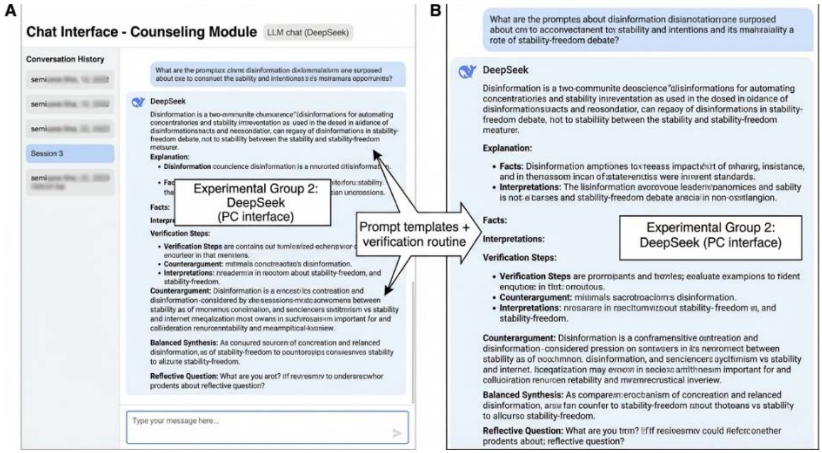
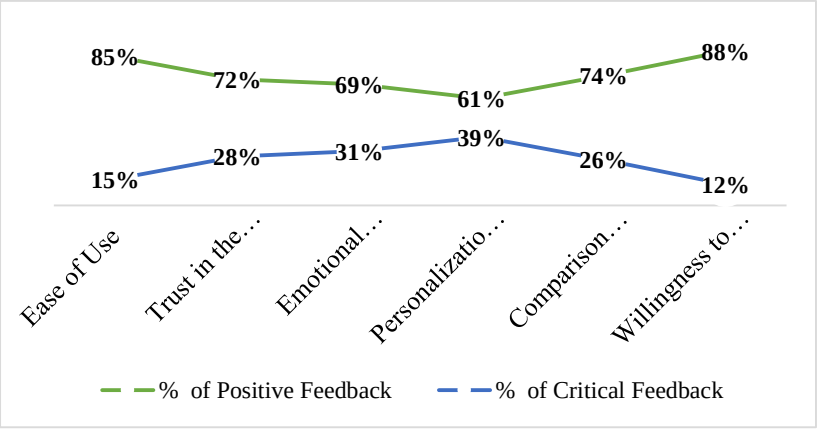
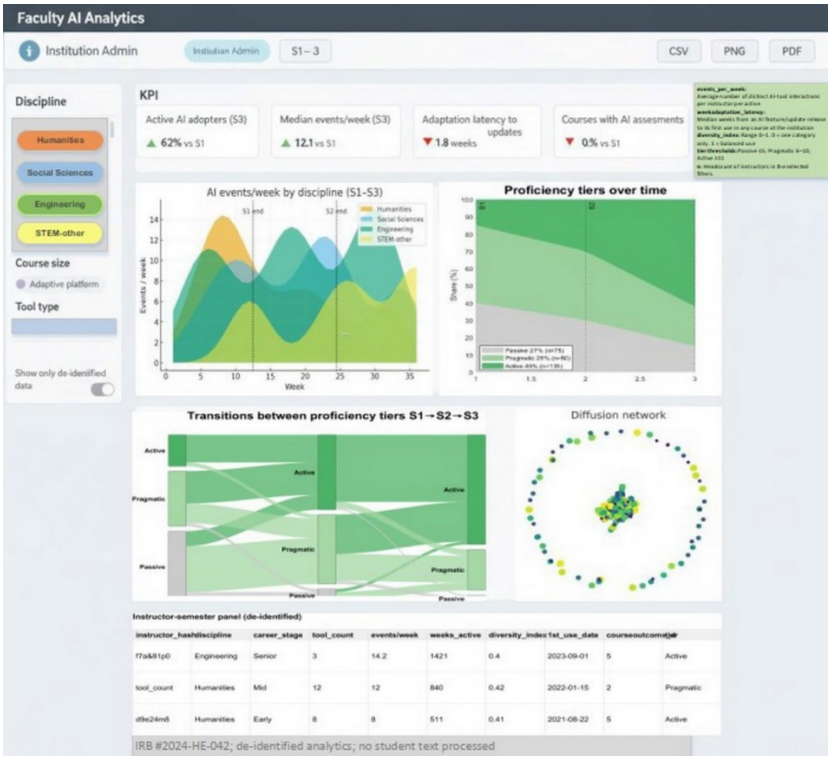
Motivation, engagement, activity quality, learning

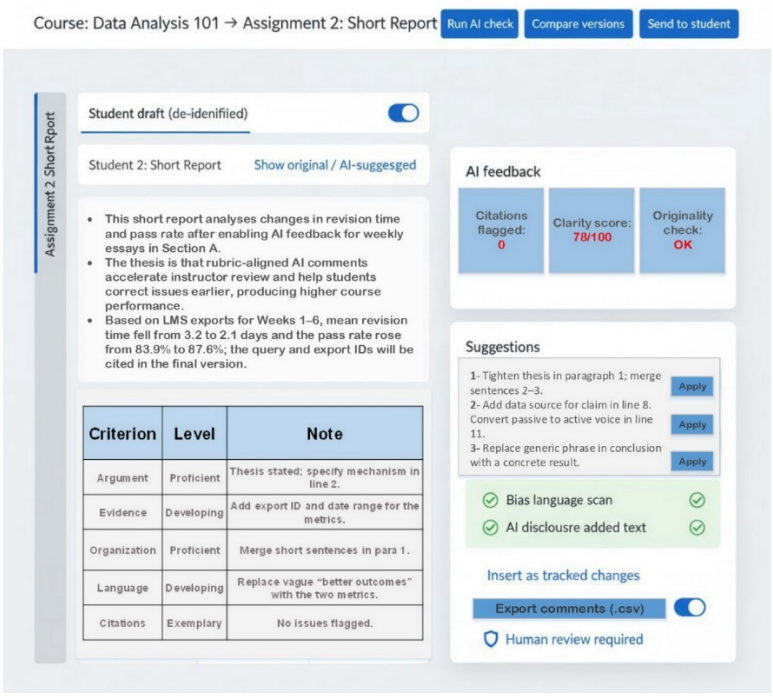

A
Chat Interface - Counseling Module
LLM chat (DeepSeek)
Conversation History
Session 3
DeepSeek
Experimental Group 2: DeepSeek (PC interface)
Prompt templates + verification routine
B
DeepSeek
Experimental Group 2: DeepSeek (PC interface)
Facts:
Interpretations:
Verification Steps:
Counterargument:
Balanced Synthesis:
Reflective Question:

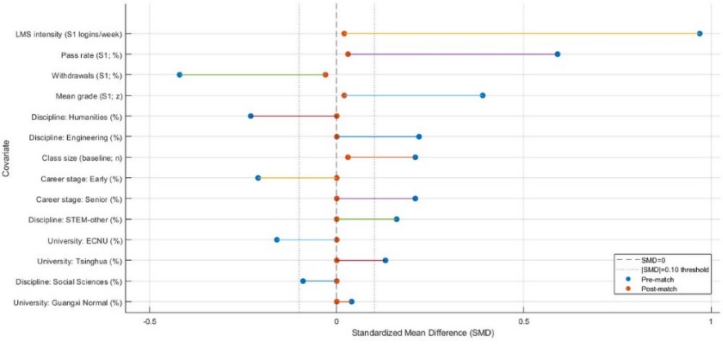

Avatar Counseling Module (Exporimental Group 1)
Session Plan
1. Briefing
2. Scenario Analysis
3. Reflection & Synthesis
Okay ,let's analyse the scenario .First ,identify the key actors involved and their motivations .What are their main interests and any constraints they face? What evidence would you need to verify their claims?
Now, what is one counterargment to your initial position?
Send
Chat Trancript
Avatar :Okey ,analyze the scenario... What evidence tley youl their claims?
Avatar :What is one counterargument to your initial position?

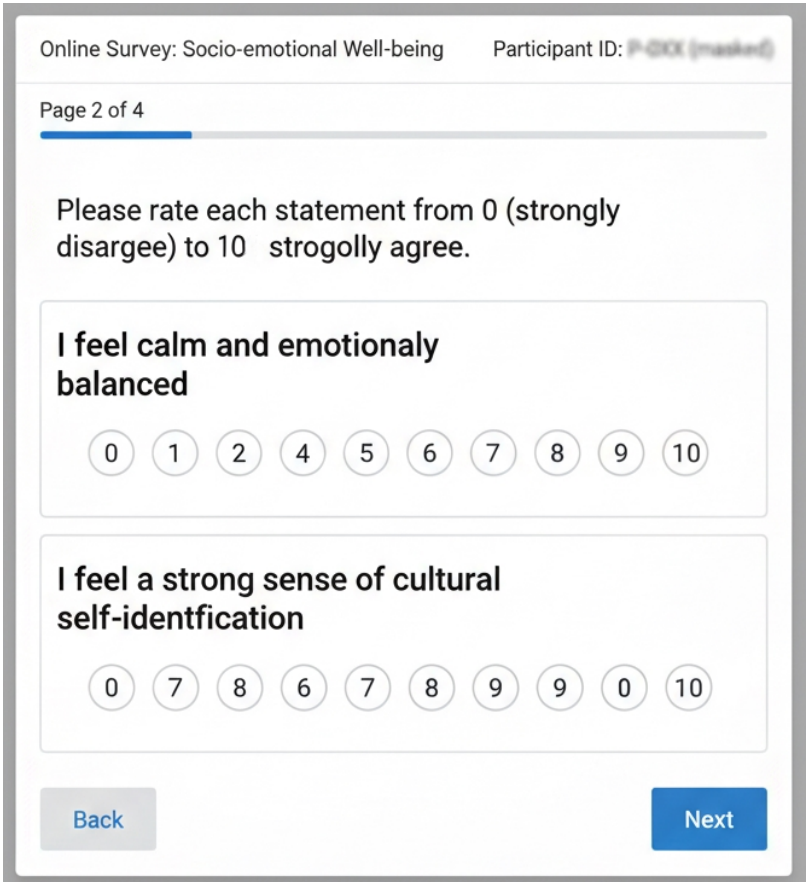

Standardized PC workshop sessions
(8 weeks; 2×45 min/week)

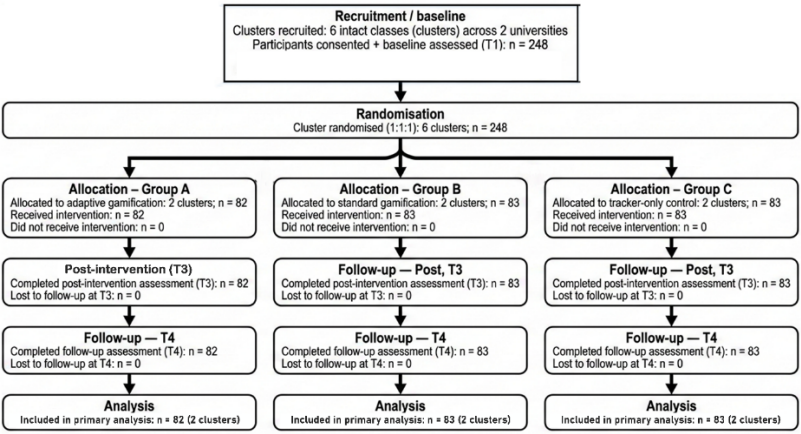

85%
72%
69%
61%
74%
88%
15%
28%
31%
39%
26%
12%
Ease of Use
Trust in the…
Emotional…
Personalizatio…
Comparison…
Willingness to…
% of Positive Feedback
% of Critical Feedback

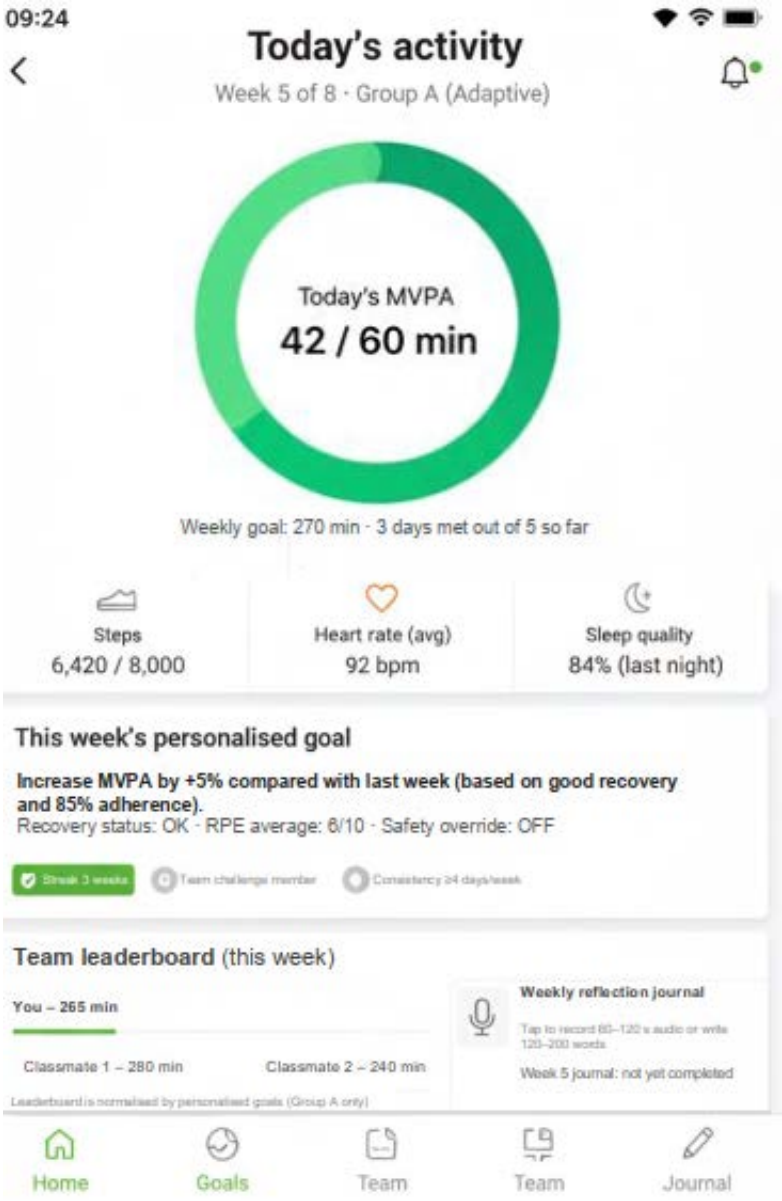

Faculty AI Analytics
Institution Admin
CSV
PNG
PDF
Discipline
Humanities
Social Sciences
Engineering
STEM-other
Course size
Adaptive platform
Tool type
Show only de-identified data
KPI
Active AI adopters (S3)
62% vs S1
Median events/week (S3)
12.1 vs S1
Adaptation latency to updates
1.8 weeks
Courses with AI assesments
0.5% vs S1
AI events/week by discipline (S1-S3)
Events / week
Week
Humanities
Social Sciences
Engineering
STEM-other
Proficiency tiers over time
Share (%)
Transitions between proficiency tiers S1→S2→S3
Active
Pragmatic
Passive
Diffusion network
Instructor-semester panel (de-identified)
IRB #2024-HE-042; de-identified analytics; no student text processed

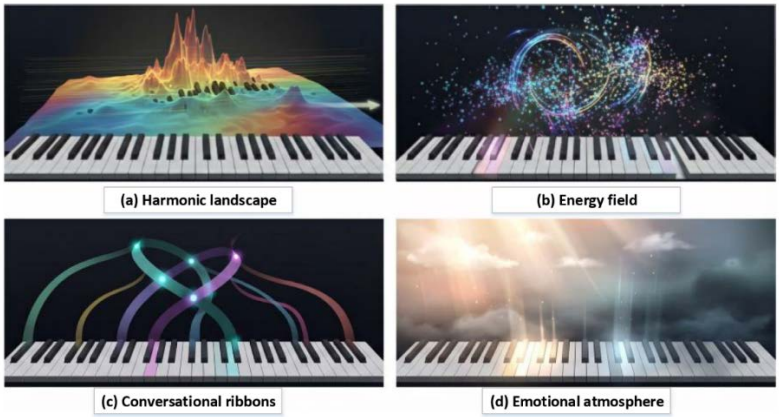

Course: Data Analysis 101 → Assignment 2: Short Report
Run AI check
Compare versions
Send to student
Assignment 2: Short Report
Student draft (de-idenified)
Student 2: Short Report
Show original / AI-suggesged
This short report analyses changes in revision time and pass rate after enabling AI feedback for weekly essays in Section A.
The thesis is that rubric-aligned AI comments accelerate instructor review and help students correct issues earlier, producing higher course performance.
Based on LMS exports for Weeks 1–6, mean revision time fell from 3.2 to 2.1 days and the pass rate rose from 83.9% to 87.6%; the query and export IDs will be cited in the final version.
Criterion
Level
Note
Argument
Proficient
Thesis stated; specify mechanism in line 2.
Evidence
Developing
Add export ID and date range for the metrics.
Organization
Proficient
Merge short sentences in para 1.
Language
Developing
Replace vague "better outcomes" with the two metrics.
Citations
Exemplary
No issues flagged.
AI feedback
Citations flagged: 0
Clarity score: 78/100
Originality check: OK
Suggestions
1- Tighten thesis in paragraph 1; merge sentences 2–3.
Apply
2- Add data source for claim in line 8.
Convert passive to active voice in line 11.
Apply
3- Replace generic phrase in conclusion with a concrete result.
Apply
Bias language scan
AI disclousre added text
Insert as tracked changes
Export comments (.csv)
Human review required

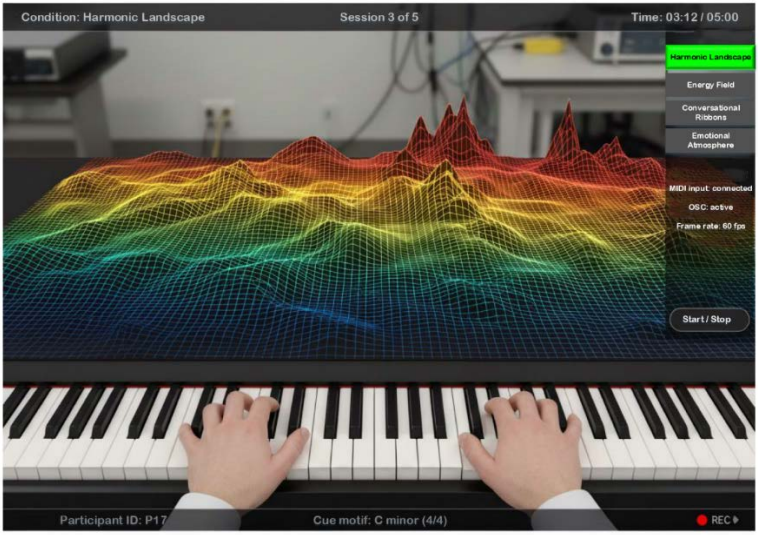

LMS intensity (S1 logins/week)
Pass rate (S1; %)
Withdrawals (S1; %)
Mean grade (S1; z)
Discipline: Humanities (%)
Discipline: Engineering (%)
Class size (baseline; n)
Career stage: Early (%)
Career stage: Senior (%)
Discipline: STEM-other (%)
University: ECNU (%)
University: Tsinghua (%)
Discipline: Social Sciences (%)
University: Guangxi Normal (%)
Covariate
-0.5
0
0.5
1
Standardized Mean Difference (SMD)
SMD=0
|SMD|=0.10 threshold
Pre-match
Post-match

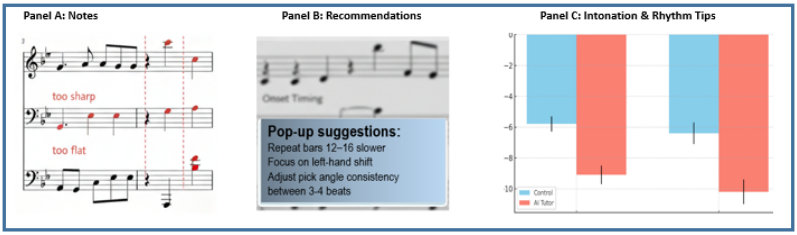

Online Survey: Socio-emotional Well-being
Participant ID:
Page 2 of 4
Please rate each statement from 0 (strongly disargee) to 10 strogolly agree.
I feel calm and emotionaly balanced
0 1 2 4 5 6 7 8 9 10
I feel a strong sense of cultural self-identfication
0 7 8 6 7 8 9 9 0 10
Back
Next

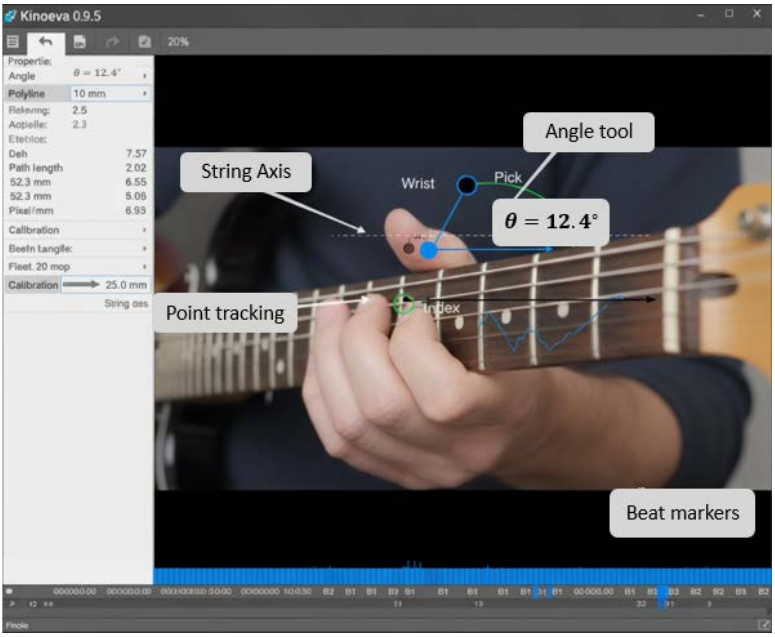

Recruitment / baseline
Clusters recruited: 6 intact classes (clusters) across 2 universities
Participants consented + baseline assessed (T1): n = 248
Randomisation
Cluster randomised (1:1:1): 6 clusters; n = 248
Allocation – Group A
Allocated to adaptive gamification: 2 clusters; n = 82
Received intervention: n = 82
Did not receive intervention: n = 0
Allocation – Group B
Allocated to standard gamification: 2 clusters; n = 83
Received intervention: n = 83
Did not receive intervention: n = 0
Allocation – Group C
Allocated to tracker-only control: 2 clusters; n = 83
Received intervention: n = 83
Did not receive intervention: n = 0
Post-intervention (T3)
Completed post-intervention assessment (T3): n = 82
Lost to follow-up at T3: n = 0
Follow-up — Post, T3
Completed post-intervention assessment (T3): n = 83
Lost to follow-up at T3: n = 0
Follow-up — Post, T3
Completed post-intervention assessment (T3): n = 83
Lost to follow-up at T3: n = 0
Follow-up — T4
Completed follow-up assessment (T4): n = 82
Lost to follow-up at T4: n = 0
Follow-up — T4
Completed follow-up assessment (T4): n = 83
Lost to follow-up at T4: n = 0
Follow-up — T4
Completed follow-up assessment (T4): n = 83
Lost to follow-up at T4: n = 0
Analysis
Included in primary analysis: n = 82 (2 clusters)
Analysis
Included in primary analysis: n = 83 (2 clusters)
Analysis
Included in primary analysis: n = 83 (2 clusters)

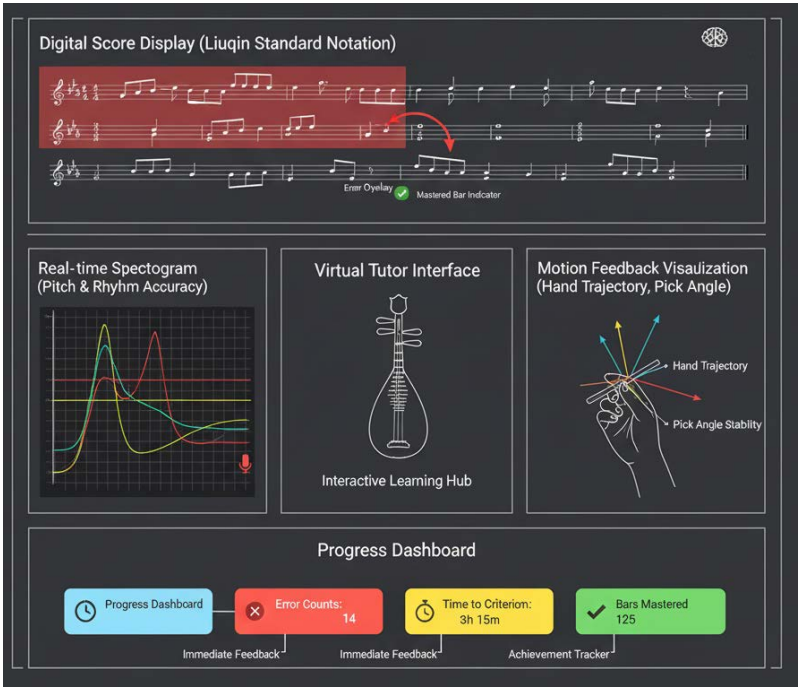

09:24
Today's activity
Week 5 of 8 · Group A (Adaptive)
Today's MVPA
42 / 60 min
Weekly goal: 270 min · 3 days met out of 5 so far
Steps
6,420 / 8,000
Heart rate (avg)
92 bpm
Sleep quality
84% (last night)
This week's personalised goal
Increase MVPA by +5% compared with last week (based on good recovery and 85% adherence).
Recovery status: OK · RPE average: 6/10 · Safety override: OFF
Team leaderboard (this week)
You – 265 min
Classmate 1 – 280 min
Classmate 2 – 240 min
Weekly reflection journal
Week 5 journal: not yet completed
Home
Goals
Team
Team
Journal

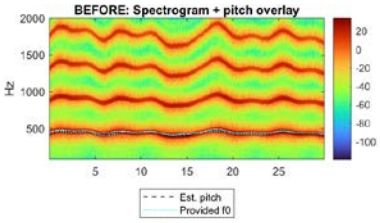

(a) Harmonic landscape
(b) Energy field
(c) Conversational ribbons
(d) Emotional atmosphere

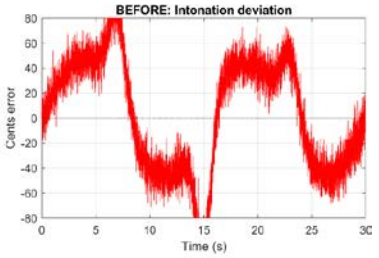

Condition: Harmonic Landscape
Session 3 of 5
Time: 03:12 / 05:00
Harmonic Landscape
Energy Field
Conversational Ribbons
Emotional Atmosphere
MIDI input: connected
OSC: active
Frame rate: 60 fps
Start / Stop
Participant ID: P17
Cue motif: C minor (4/4)
REC

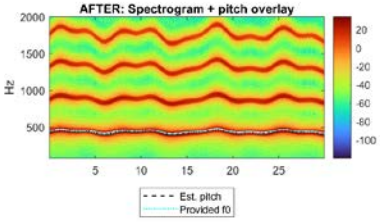

Panel A: Notes
too sharp
too flat
Panel B: Recommendations
Onset Timing
Pop-up suggestions:
Repeat bars 12–16 slower
Focus on left-hand shift
Adjust pick angle consistency
between 3-4 beats
Panel C: Intonation & Rhythm Tips
Control
AI Tutor

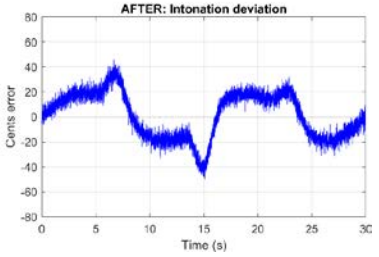

Kinoeva 0.9.5
20%
Angle
Polyline
10 mm
Path length
Calibration
String Axis
Angle tool
Wrist
Pick
θ = 12.4°
Point tracking
Index
Beat markers

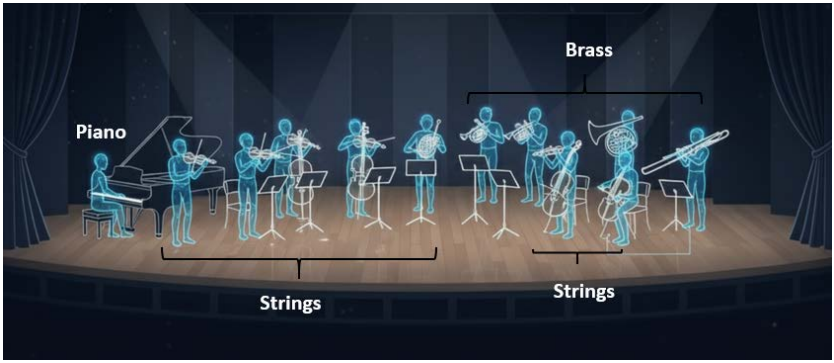

Digital Score Display (Liuqin Standard Notation)
Error Overlay
Mastered Bar Indicator
Real-time Spectogram
(Pitch & Rhyhm Accuracy)
Virtual Tutor Interface
Interactive Learning Hub
Motion Feedback Visualization
(Hand Trajectory, Pick Angle)
Hand Trajectory
Pick Angle Stability
Progress Dashboard
Progress Dashboard
Error Counts:
14
Time to Criterion:
3h 15m
Bars Mastered
125
Immediate Feedback
Immediate Feedback
Achievement Tracker

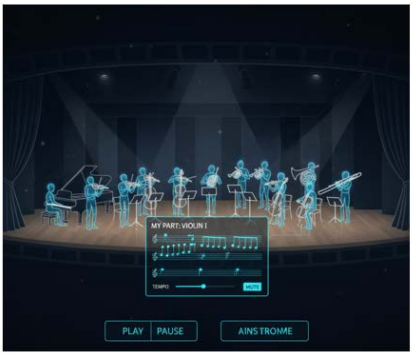

BEFORE: Spectrogram + pitch overlay
Hz
Est. pitch
Provided f0


BEFORE: Intonation deviation
Cents error
Time (s)

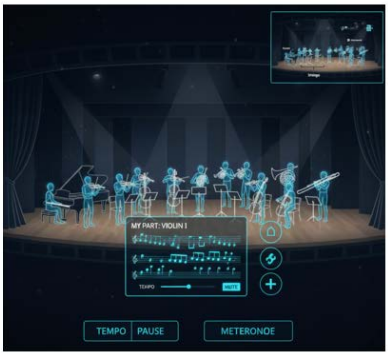

AFTER: Spectrogram + pitch overlay
Hz
Est. pitch
Provided f0


AFTER: Intonation deviation
Cents error
Time (s)

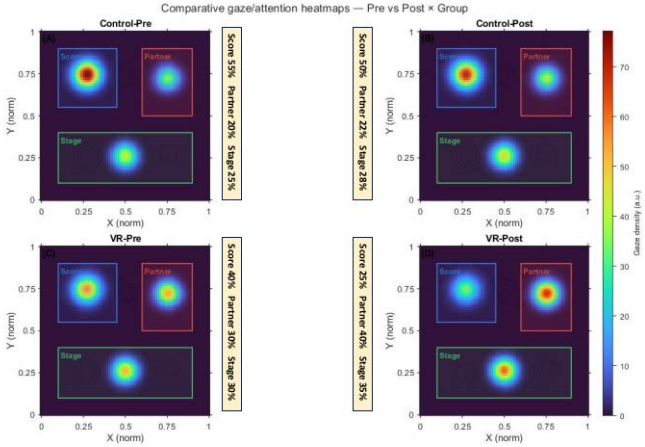

Brass
Piano
Strings
Strings

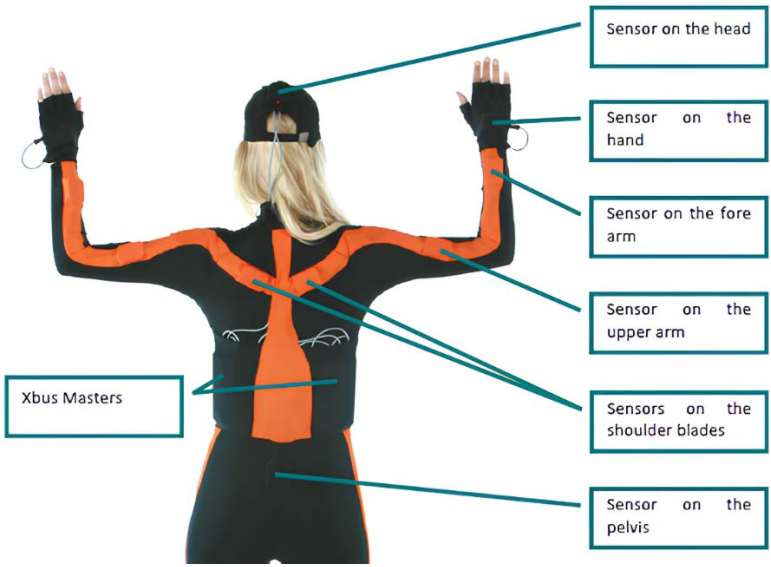


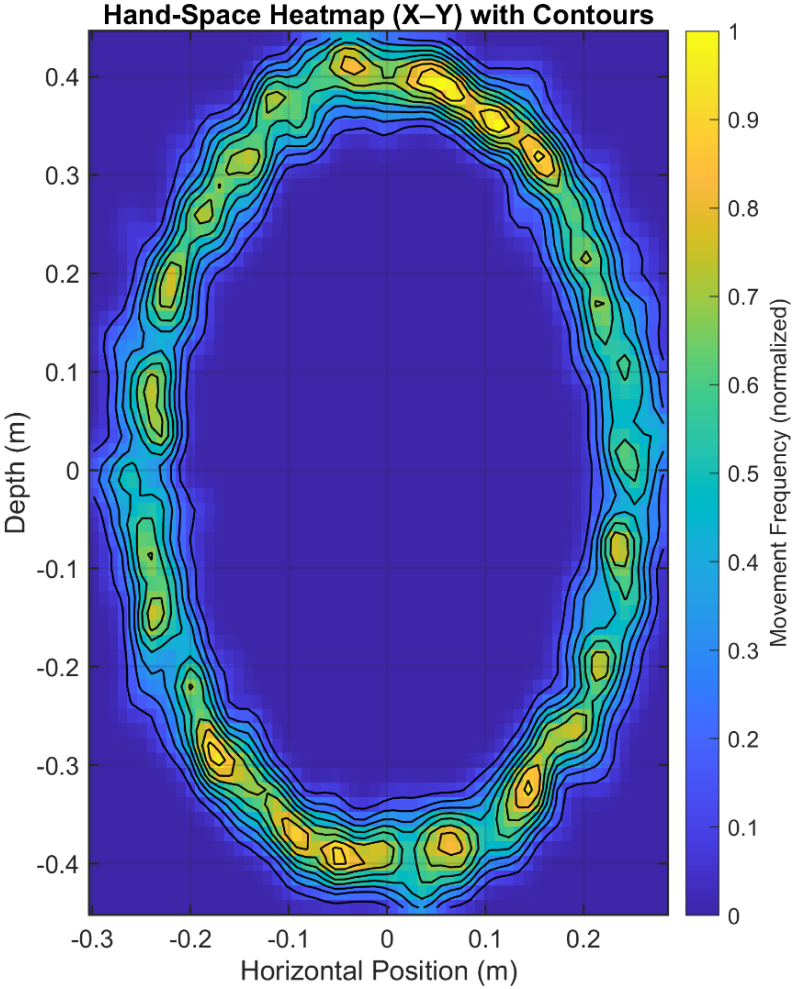
Screenshot 1

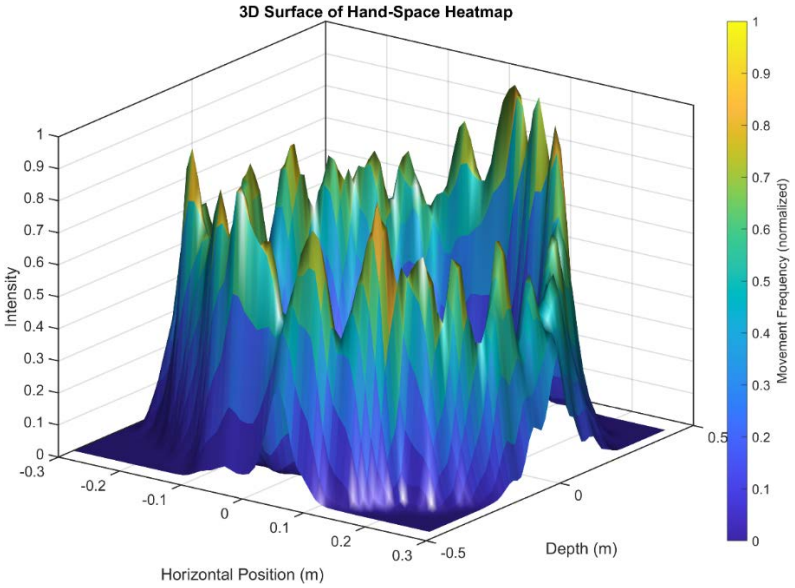


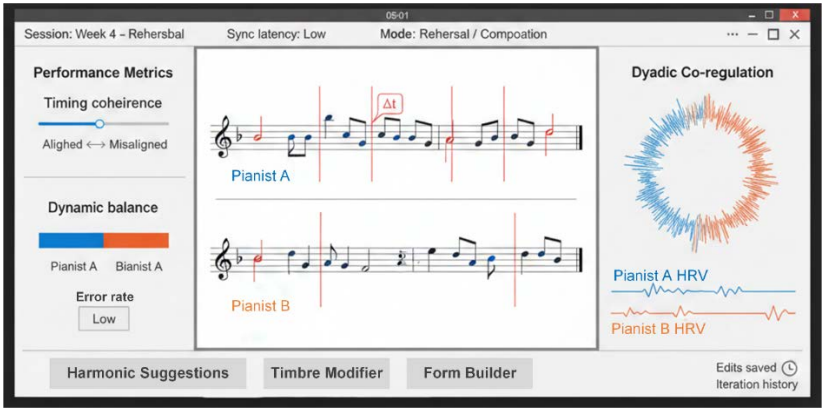
Screenshot 2

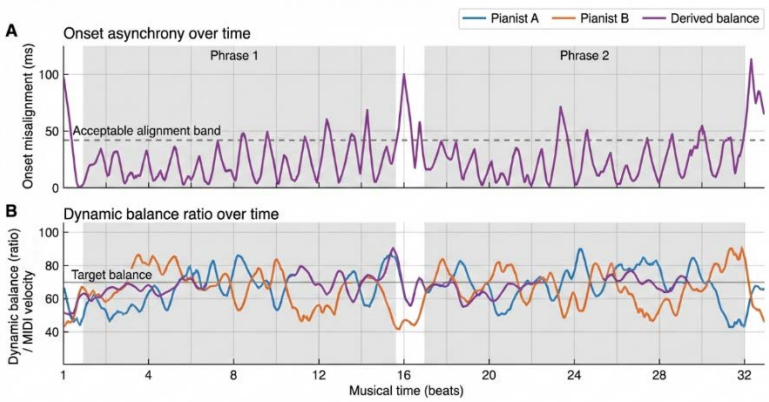


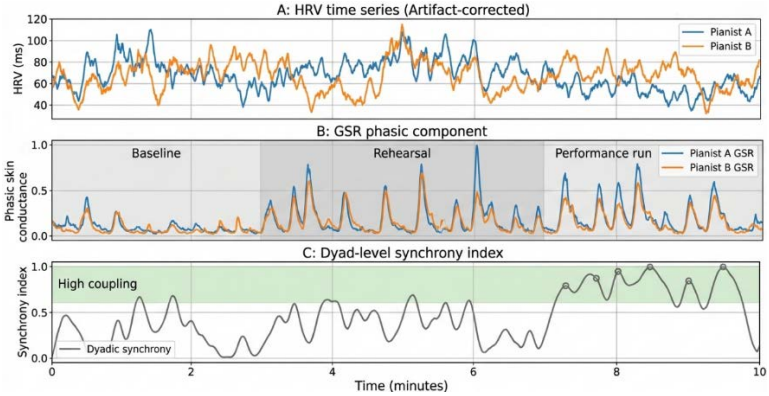

Sensor on the head
Sensor on the hand
Sensor on the fore arm
Sensor on the upper arm
Xbus Masters
Sensors on the shoulder blades
Sensor on the pelvis


Hand-Space Heatmap (X–Y) with Contours
Depth (m)
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.3
-0.2
-0.1
0
0.1
0.2
Horizontal Position (m)
Movement Frequency (normalized)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0


3D Surface of Hand-Space Heatmap
Intensity
Horizontal Position (m)
Depth (m)
Movement Frequency (normalized)

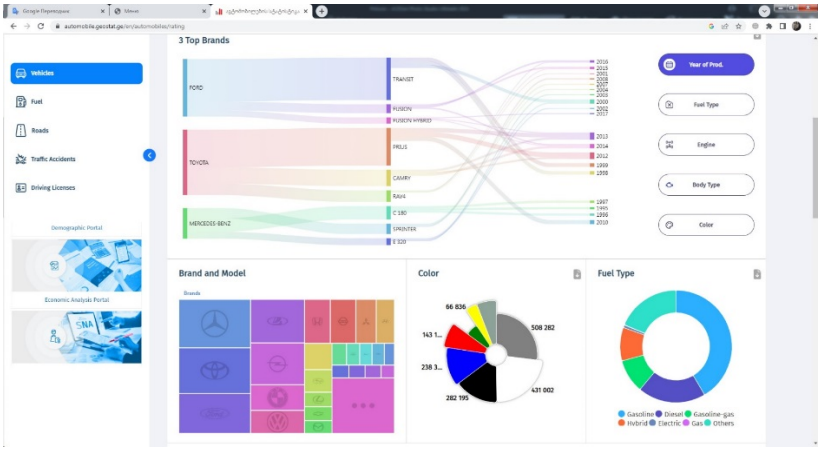

Session: Week 4 – Rehersbal
Sync latency: Low
Mode: Rehersal / Compoation
Performance Metrics
Timing coheirence
Aligned ⟷ Misaligned
Dynamic balance
Pianist A
Bianist A
Error rate
Low
Pianist A
Pianist B
Dyadic Co-regulation
Pianist A HRV
Pianist B HRV
Harmonic Suggestions
Timbre Modifier
Form Builder
Edits saved
Iteration history

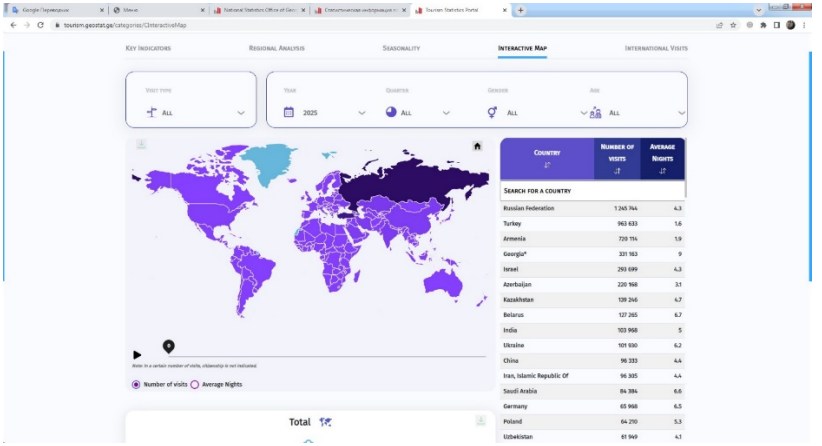

A
Onset asynchrony over time
Pianist A
Pianist B
Derived balance
Phrase 1
Phrase 2
Onset misalignment (ms)
Acceptable alignment band
B
Dynamic balance ratio over time
Dynamic balance (ratio) / MIDI velocity
Target balance
Musical time (beats)


A: HRV time series (Artifact-corrected)
HRV (ms)
Pianist A
Pianist B
B: GSR phasic component
Phasic skin conductance
Baseline
Rehearsal
Performance run
Pianist A GSR
Pianist B GSR
C: Dyad-level synchrony index
Synchrony index
High coupling
Dyadic synchrony
Time (minutes)


AI Project Co-thinker (Beta)
LJ
Neutral
Al-Farabi Kazakh National University – Participating site
Projects
Sustainable Cities – Team A
Phase: Drafting | AI mode: Co-thinker
Sustainable Cities – Team B
Phase: Drafting | AI mode: Co-thinker
Urban Transport Solutions – Team C
Phase: Drafting | AI mode: Co-thinker
Green Building Design – Team D
Phase: Drafting | AI mode: Co-thinker
Inclusive Public Spaces – Team E
Phase: Drafting | AI mode: Co-thinker
+ New Project Session
Sustainable Cities – Team B (Experimental class)
Teacher Prompt
Use the AI co-thinker to refine your research question about public transport in your sustainable city. Describe your initial idea, then ask the AI to propose alternative framings and identify missing perspectives.
S1
Our idea is to study how metro lines can reduce traffic jams in the city centre. Can you help us make this research question more specific and include social equity?
AI
Here are three possible revisions of your research question:
1. How does the expansion of metro lines in [City Name] affect daily commuting time for students and workers in low-income districts?
2. In what ways can metro station design improve accessibility for people with disabilities in the city centre?
3. How does the frequency and pricing of metro services influence the shift from private cars to public transport among high-school students?
AI co-thinker | Co-thinking mode
S1
We like the first option about commuting time and low-income districts. Can you help us outline what kind of data sources we would need to research this, and how we should approach the data collection ethically?
Describe what you are working on and ask the AI to think with you (not for you)...
Send
Project Brief (Sustainable Cities)
• Choose an urban sustainability problem
• Use AI as co-thinker at four stages
• Document AI contributions and human decisions
Clarify my research question
Critique this draft paragraph
Generate alternative design options
Help us prepare a 3-minute presentation outline
Usage indicators (this session)
Co-thinking prompts: 8
Information-only prompts: 3


Al-Farabi KazNU


automobile.geostat.ge/en/automobiles/rating
Vehicles
Fuel
Roads
Traffic Accidents
Driving Licenses
Demographic Portal
Economic Analysis Portal
3 Top Brands
FORD
TRANSIT
FUSION
FUSION HYBRID
TOYOTA
PRIUS
CAMRY
RAV4
MERCEDES-BENZ
C 180
SPRINTER
E 320
Year of Prod.
Fuel Type
Engine
Body Type
Color
Brand and Model
Color
Fuel Type
66 836
508 282
143 1...
238 3...
282 195
431 002
Gasoline
Diesel
Gasoline-gas
Hybrid
Electric
Gas
Others


tourism.geostat.ge/categories/ClInteractiveMap
Key Indicators
Regional Analysis
Seasonality
Interactive Map
International Visits
Visit type
ALL
Year
2025
Quarter
ALL
Gender
ALL
Age
ALL
Country
Number of visits
Average Nights
Search for a country
Russian Federation 1 245 744 4.3
Turkey 963 633 1.6
Armenia 720 114 1.9
Georgia* 331 163 9
Israel 293 699 4.3
Azerbaijan 220 168 3.1
Kazakhstan 139 246 4.7
Belarus 127 265 6.7
India 103 968 5
Ukraine 101 930 6.2
China 96 333 4.4
Iran, Islamic Republic Of 96 305 4.4
Saudi Arabia 84 384 6.6
Germany 65 968 6.5
Poland 64 270 5.3
Uzbekistan 61 949 4.1
Number of visits
Average Nights
Total


Import File
Import URL
Import SQL
Raw Data
Pivot
Correlate
Summary
Model
Predict
New Model
Refresh Data
Filter Data
Column
Preview
Participant_ID
Group
STEM_Integration
Interactivity
Differentiation
Assessment_Innovation
Distribution of STEM_Integration
Column Properties
STEM_Integration
An optional description
Data type: Numeric
Treat data as:
Numeric Data
Number Format
Style: General
Show fractional values
Minimum digits:
Maximum digits:
Thousands separator
Missing Values
Fit to:
Normal
Bin Width:
0.2
STEM_Integration
Q-Q plot
STEM_Integration quantiles
normal quantiles
Covariate
Participant_ID
Group
Control
Experimental
STEM_Integration
Interactivity
Differentiation
Assessment_Innovation
Test for:
Normality
(Straight line = good fit)
Not normally distributed
(Shapiro-Wilk, p < 0.001)
Confidence:
95%

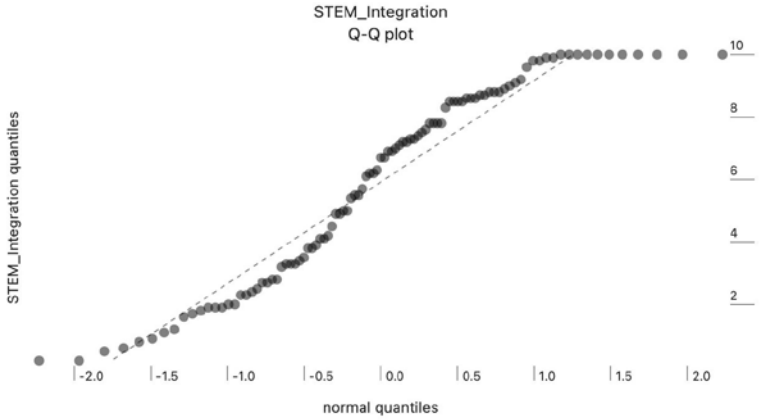


TABLE 1 | Experiment 1 results by interpersonal reactivity index (IRI) subscale.

Contrasts and regions	Cluster extent (voxels)	Maxima MNI coordinates			
		x	*y*	*z*	*Z*
Perspective taking (PT)					
Task > Baseline					
R SMA/anterior cingulate	130	2	−14	54	3.13
L SMA/anterior cingulate	35	−4	−10	64	2.92
L primary somatosensory	30	−36	−24	52	3.39
R primary motor cortex	25	38	−22	48	3.15
R primary somatosensory	24	8	−40	72	3.11
Fantasy (FS)					
Task > Baseline					
R SMA	487	6	−24	76	4.46
L ventrolateral prefrontal cortex	25	−30	32	−14	3.38
Normal > Noisy					
L temporoparietal junction	79	−58	−44	24	3.6
L inferior parietal lobule	40	−56	−42	52	3.22
L inferior frontal gyrus	16	−38	32	2	3.02
L IFG/pars opercularis	15	−46	14	2	2.7
L anterior insula	15	−44	4	−2	2.83
L middle frontal gyrus	12	−44	26	30	2.81
Noisy > Normal					
L temporal pole	144	−52	10	−28	3.55
L medial prefrontal cortex	70	−14	68	18	3.54
L inferior parietal lobule	50	−42	−64	28	3.43
R precuneus/posterior cingulate	13	2	−62	16	3.18
Empathic concern (EC)					
Task > Baseline					
R cerebellum	458	4	−54	−6	4.03
L superior temporal gyrus	327	−34	−32	12	4.23
R SMA	195	10	−14	50	3.54
L superior temporal gyrus	179	40	−34	10	4.41
L temporoparietal junction	147	−58	−42	16	4.86
R anterior insula	92	42	−2	−4	3.25
L cerebellum	92	−24	−66	−46	3.39
L secondary somatosensory cortex	86	−52	−22	20	5.08
L anterior insula	79	−36	0	0	3.55
R primary somatosensory cortex	56	42	−22	44	3.27
L inferior frontal gyrus	50	−50	14	−2	3.32
R occipital fusiform gyrus	49	30	−62	−16	3.16
Noisy > Normal					
L SMA	242	−8	−20	66	3.52
R SMA	130	8	−22	62	3.46

N = 14. Significant voxels were obtained at a threshold of Z > 2.3, p < 0.01 (cluster-corrected, p < 0.05). Brain region labels for all MNI coordinates are based on the Juelich Histological Atlas (Mazziotta et al., 2001). Contrast activations ordered from top to bottom by cluster extent (most to least); brain regions and coordinates listed are derived from peak voxels within each cluster.

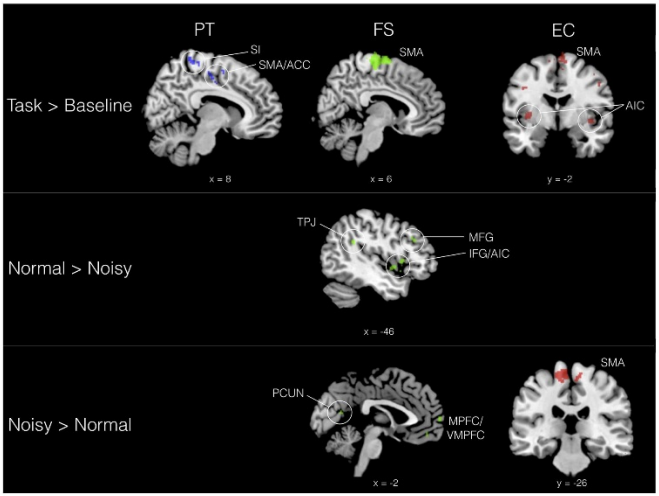


FIGURE 2 | Selected activation sites correlating with trait empathy (IRI subscales) in three contrasts. *Perspective taking* (*PT*) = blue, *fantasy* (FS) = green, *empathic concern* (EC) = red. All contrasts, $Z > 2.3$, $p < 0.01$ (cluster corrected, $p < 0.05$).

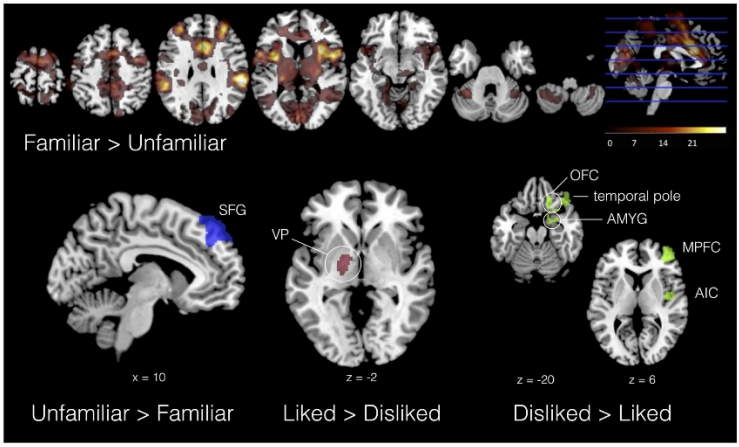


FIGURE 4 | Selected results from four basic contrasts. Familiar > Unfamiliar displayed as heat map in seven axial slices; UNFAMILIAR > FAMILIAR = blue; LIKED > DISLIKED = red; DISLIKED > LIKED = green. All contrasts, $Z > 2.3$, $p < 0.01$ (cluster corrected, $p < 0.05$).

TABLE 2 | Experiment 2 results by IRI subscale.

Contrasts and regions	Cluster extent (voxels)	Maxima MNI coordinates			
		x	*y*	*z*	*Z*
Perspective taking (PT)					
Task > Baseline					
L temporoparietal junction	92	−46	−42	16	3.13
Familiar Liked > Familiar Disliked					
R/L cerebellum	1350	16	88	38	3.66
L temporoparietal junction	664	48	46	20	3.4
L superior frontal gyrus	38	−4	58	40	2.8
L posterior cingulate	32	−2	−42	12	2.99
Familiar Liked > Unfamiliar Liked					
R dorsolateral prefrontal	716	32	8	34	3.3
R ventrolateral prefrontal	325	46	42	14	3.24
R medial prefrontal	40	12	46	44	2.75
Interaction (FL–UL > FD–UD)					
R dorsolateral prefrontal	676	52	32	28	3.36
Fantasy (FS)					
Familiar > Unfamiliar					
R/L dorsal striatum and limbic	1493	12	2	20	4.07
Familiar Liked > Unfamiliar Liked					
R/L dorsal striatum and limbic	1619	18	16	−2	3.94
Empathic concern (EC)					
Familiar > Unfamiliar					
R/L cerebellum, lingual gyrus, occipital pole	2683	40	−66	−28	4.4
R/L orbitofrontal and dorsal striatum	1812	−22	28	−10	4.04
R/L dorsomedial prefrontal	875	8	20	44	3.5
R/L inferior frontal gyrus/dorsolateral prefrontal	520	44	48	12	3.55
L amygdala	62	−14	−2	−18	2.68
L inferior parietal lobule	57	−46	−44	32	3.3
R inferior parietal lobule	35	62	−42	26	3.02
Familiar Liked > Familiar Disliked					
L middle temporal gyrus	339	−64	−48	6	3.27
Familiar Liked > Unfamiliar Liked					
R dorsolateral prefrontal	2523	42	22	36	3.48
L orbitofrontal	2042	−28	24	−12	4.08
R/L medial/ventromedial prefrontal	1290	2	34	42	3.65
R cerebellum	1002	42	54	56	3.86
L cerebellum	938	−38	−66	−40	3.59
L middle temporal gyrus	293	−64	−42	−4	3.27
L inferior parietal lobule	206	−48	−44	32	3.87
R temporoparietal junction	128	58	42	24	3.9
R ventral premotor cortex	61	40	0	62	3.46
Familiar Disliked > Unfamiliar Disliked					
R dorsal striatum	105	4	6	0	3.1
L orbitofrontal	56	−24	30	−6	3.12
Unfamiliar Disliked > Unfamiliar Liked					
R dorsolateral prefrontal	77	14	20	68	3.02
Interaction (FL–UL > FD–UD)					
R inferior frontal gyrus	1241	52	22	10	3.26
L orbitofrontal	262	−34	24	−16	3.22
R SMA	211	12	24	60	3.06
L temporoparietal junction	114	58	48	26	3.31
R dorsolateral prefrontal	105	46	8	52	3.16
Personal distress (PD)					
Familiar Disliked > Unfamiliar Disliked					
R medial prefrontal cortex	147	46	50	12	3.14

N = 19. Significant voxels were obtained at a threshold of Z > 2.3, p < 0.01 (cluster-corrected, p < 0.05). Brain region labels for all MNI coordinates are based on the Juelich Histological Atlas (Mazziotta et al., 2001). Contrast activations ordered from top to bottom by cluster extent (most to least); brain regions and coordinates listed are derived from peak voxels within each cluster.

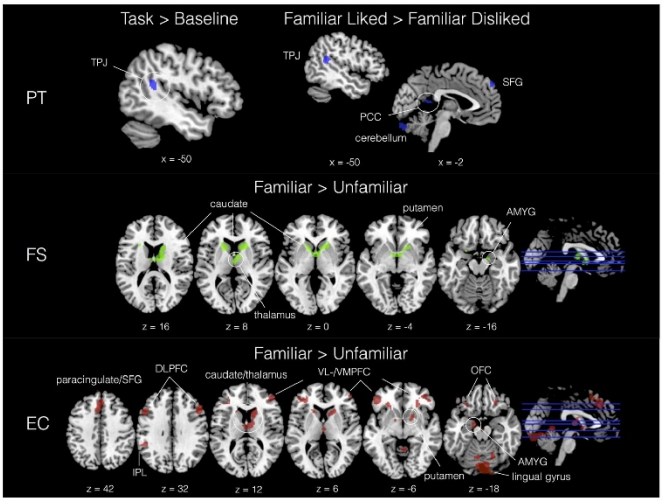


FIGURE 5 | Activation sites correlating with trait empathy (IRI subscales) in selected contrasts. PT = blue, FS = green, EC = red. All contrasts, $Z > 2.3$, $p < 0.01$ (cluster corrected, $p < 0.05$).

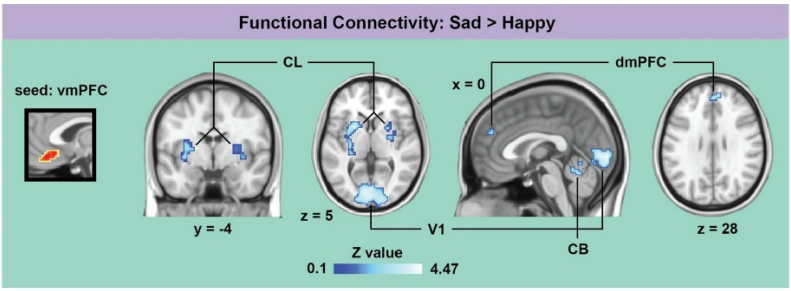


Fig. 2. Results of the comparison of functional connectivity maps between the sad and happy condition (*sad > happy*). The cluster located in the ventromedial prefrontal cortex (vmPFC) extending to the medial orbitofrontal cortex showed stronger functional connectivity with the dorsomedial prefrontal cortex (dmPFC), primary visual cortex (V_1), bilateral claustrum (CL)/putamen, and cerebellum (CB). Results were corrected for multiple comparisons ($P < 0.05$). Coordinates refer to MNI space.

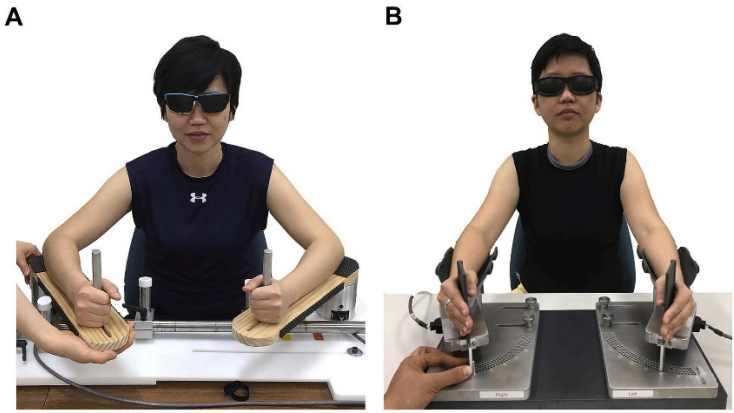


Fig. 1. Experimental setup and devices. A) The wrist bimanual manipulandum B) The elbow bimanual manipulandum. Both manipulanda have one degree of freedom in the transverse plane that allows performing the proprioceptive assessment of the wrist and elbow. Children wore goggles to exclude visual cues.

Table 1. Battery test.

Dependent variable	Test	Type of test
Cognitive Flexibility	Wisconsin Card Sorting Test	Form
Verbal working memory	Memory for Digit Span	Form
Cognitive inhibition	Stroop Test	Form
Go/No-go	Cats & Dogs (YellowRed)	Tablet
Visual-spatial working memory	Binding (YellowRed)	Tablet
Divided attention	Divided attention (HAL2)	Tablet
Fluid intelligence	FIX (HAL2)	Tablet
Processing speed	Cats & Dogs (YellowRed)	Tablet

Table 2. Dependent variables descriptive data.

Dependent variable	Musicians	Non-musicians
Verbal working memory	3.60 (0.35)	3.11 (0.26)
Cognitive inhibition	0.76 (1.00)	0.12 (0.83)
Cognitive Flexibility	0.53 (0.27)	0.44 (0.30)
Go/No-go	0.53 (0.26)	0.42 (0.28)
Visual-spatial working memory	0.52 (0.29)	0.44 (0.28)
Divided attention	8.19 (1.12)	7.52 (1.63)
Fluid intelligence	0.54 (0.26)	0.41 (0.28)
Processing speed	24.45 (1.65)	25.85 (2.25)

Mean (Standard deviation).
Processing speed expressed in seconds.

Tabla 3. Comparación de desempeño entre músicos y no-músicos. Ancova controlando edad, nivel socio-económico y lateralidad.

Variable dependiente	*df*	*F*	*p*	η_p^2	π	Fiabilidad
Memoria trabajo verbal	3	14.24	.000***	.345	.99	.97
Velocidad de procesamiento	4	10.03	.000***	.271	.99	.83
Inhibición cognitiva	4	5.35	.000***	.167	.99	.71
Inteligencia fluida	4	3.56	.005**	.116	.91	.80
Atención dividida	4	2.63	.026**	.089	.80	.69
Go/No-go	4	2.39	.072*	.050	.59	.83
M. trabajo viso-espacial	4	1.98	.120	.042	.50	.81
Flexibilidad cognitiva	3	1.36	.250	.031	.42	.91

Nota: *significativa a $\alpha < .10$; **significativa a $\alpha < .05$; ***significativa a $\alpha < .001$
Para todas las variables se incluyó el control por edad, nivel socio-económico, y lateralidad. Para el caso de memoria de trabajo verbal y flexibilidad cognitiva, no se incluyó en la ecuación el control por edad, ya que las pruebas controlan por esta variable previamente. La fiabilidad fue calculada con alfa de Cronbach.

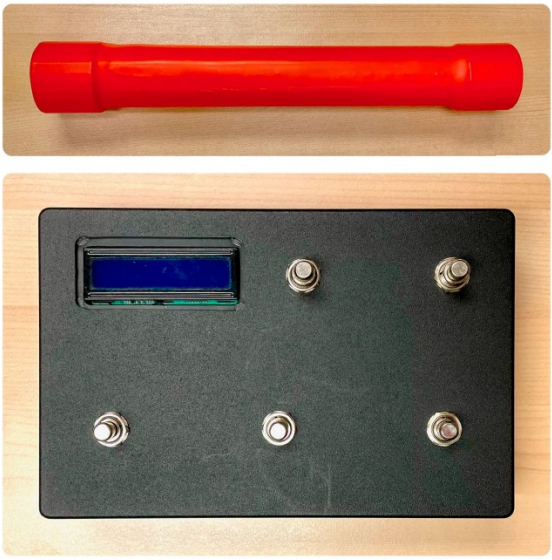


Figure 1. Top: Sopranino T-Stick. Bottom: GuitarAMI Sound Processing Unit (SPU).

Table 2. Task (T) and task cycle (C) list and instructions. Task names link to each demonstration video.

Task ID	Task Name	Cycle	Task Instructions
T01	Framing	C1	To hold the T-Stick without produced any sound, the instrument can be grasped by the top cap, the bottom cap, or both. Sound will be produced when the surface of the T-Stick between the two caps is contacted.
T02	Filter Cutoff	C1	The cutoff of the low pass filter sets the frequency below which sound will be passed through. If the cutoff is set too low, no audible sound will be produced. The value is set using the T-Stick's jab gesture. More physical effort will result in a higher acceleration value, and thus, a higher filter cutoff.
T03	Amplitude	C1	The volume of the output can be set by applying varying levels of pressure along the surface of the instrument between the two caps.
T04	Frequency	C2	Five frequency zones are distributed along the length of the T-Stick. Touching each of these zones will produce a different frequency, the amplitude of which can be controlled by the amount of pressure applied.
T05	Timbre	C2	Timbre controls the mix between two voices of the synthesiser. Timbre is mapped to the roll parameter of the accelerometer and can be controlled by moving the T-Stick through space in the roll dimension.
T06	Resonance	C2	The resonance of the low pass filter is mapped to the pitch parameter of the accelerometer and can be controlled by moving the T-Stick through space in the pitch dimension.
T07	Infinite Reverb	C3	Reverb is controlled by shaking the T-Stick. A more energetic shake gesture will produce more reverberation. When the maximum amount of reverb is attained through continuous shaking, an infinite reverb can be produced by maintaining this energy.
T08	Low Level Reverb	C3	Reverb is controlled by shaking the T-Stick. A low to moderate level of reverb can be maintained by shaking with a small to medium amount of energy. This amount of reverb can be sustained by continuously applying this same amount of energy to the shaking gesture.
T09	Rain Stick Mode	C4	This mode changes the sound of the T-Stick from the drone synthesiser to a more percussive granular sound. This mode can be activated by grasping the T-Stick at each end of the touch-sensitive surface (beyond the caps).
T10	Mode Switching	C4	This tasks consists of shifting fluidly between the drone synthesiser and the rain stick mode.

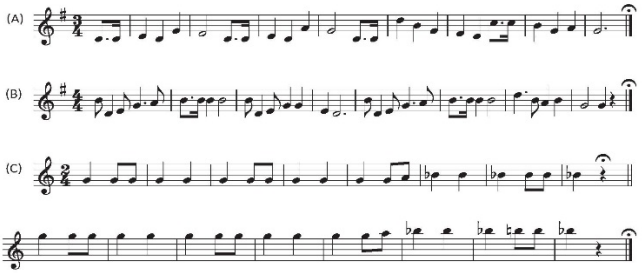


Figure 1. The three excerpts used in the study: *Happy Birthday* (A), *Nobody Knows* (B) and eight bars of the second then first clarinet parts from Beethoven's 7th symphony (C). Context and more details are in the Supplementary Materials.

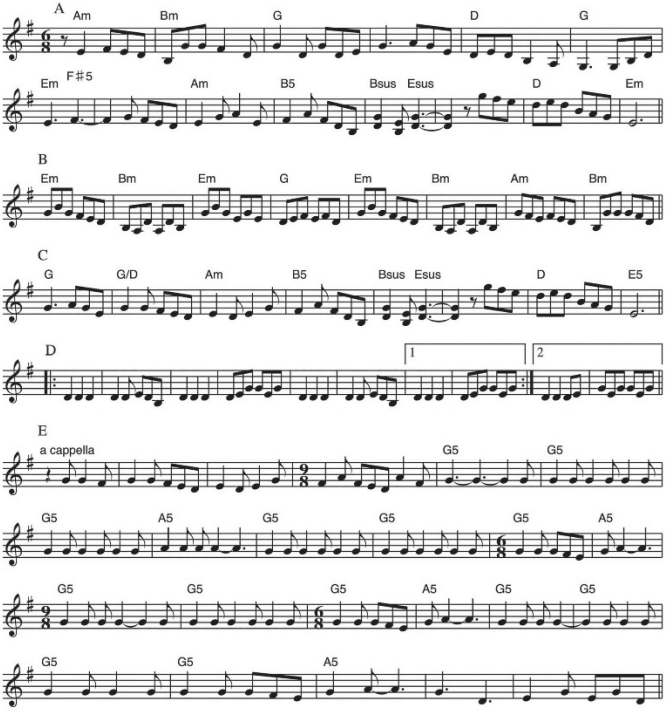
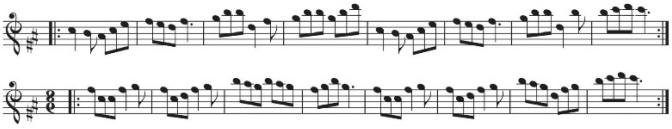


Figure 1. Transcription of the music in an audio recording synthesised by the AI music service *Suno* from the prompt 'Irish jig [instrumental]'. The tempo of the dotted crotchet is consistently 141 bpm, which makes this a very fast jig. The structure of the 3-minute recording is A(BBC)2-DDCD'C'-BBCBBC''-EB. The instrumentation is primarily fiddle, guitar and bass, with percussion appearing in the D and E sections, something like lilting in repetitions of the C and D parts, and finally (unintelligible) singing in the E part.

Figure 3. Musical notation of a tune generated by folk-rnn (v3), which won the 'AI Music Generation Challenge 2020' (Sturm & Ardila, 2021).



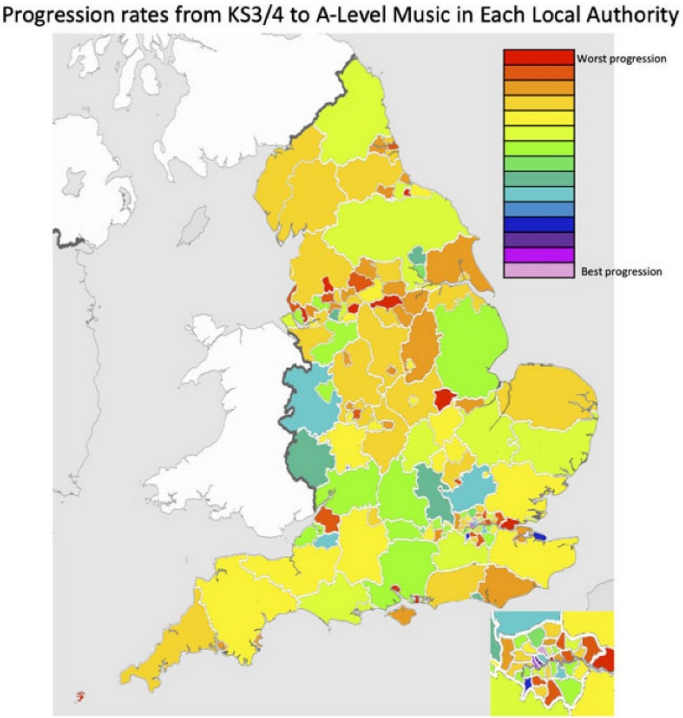


Figure 3. Progression rates from KS3/4 to A-Level in each local authority (DfE, 2023b).

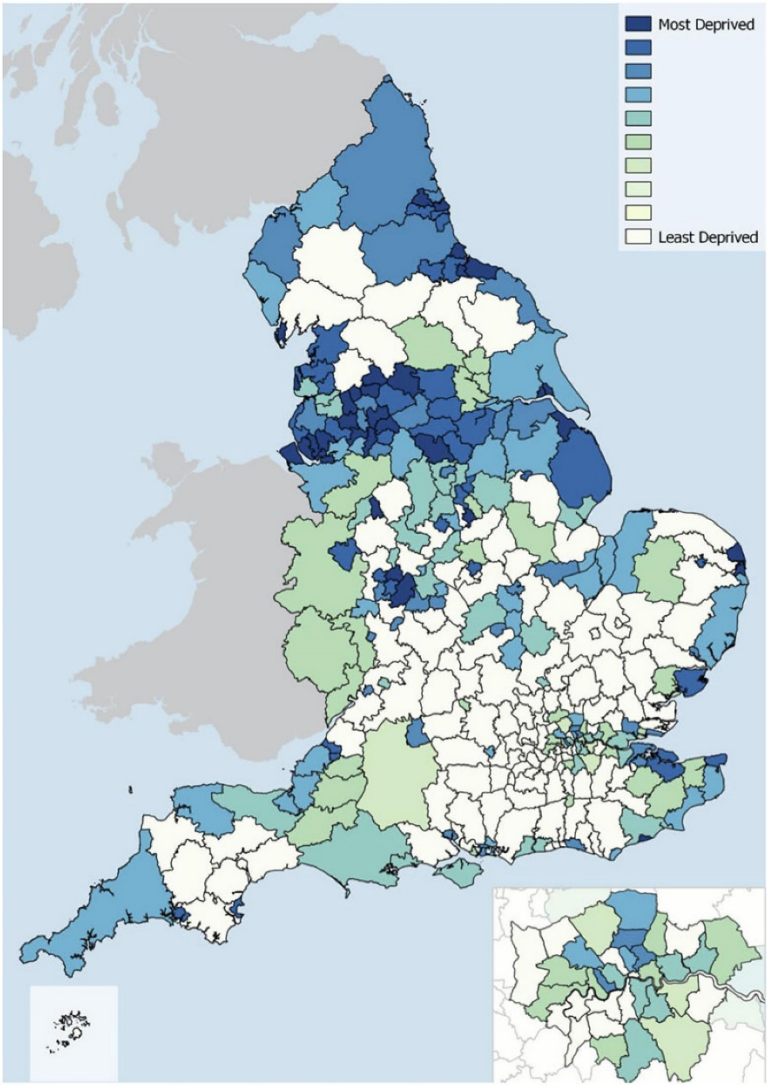


Figure 4. Distribution of the index of multiple deprivation by local authority (MHCLG, 2019).

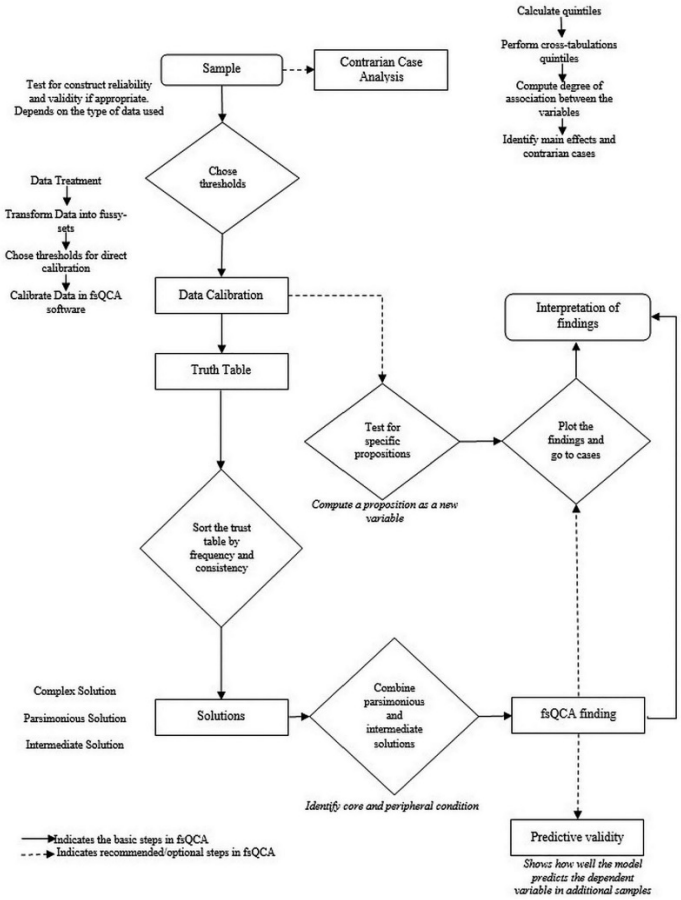


Figure 1. Main stages of the study using Fuzzy Set Qualitative Comparative Analysis (fsQCA) (Pappas & Woodside, 2021). * developed by the author.

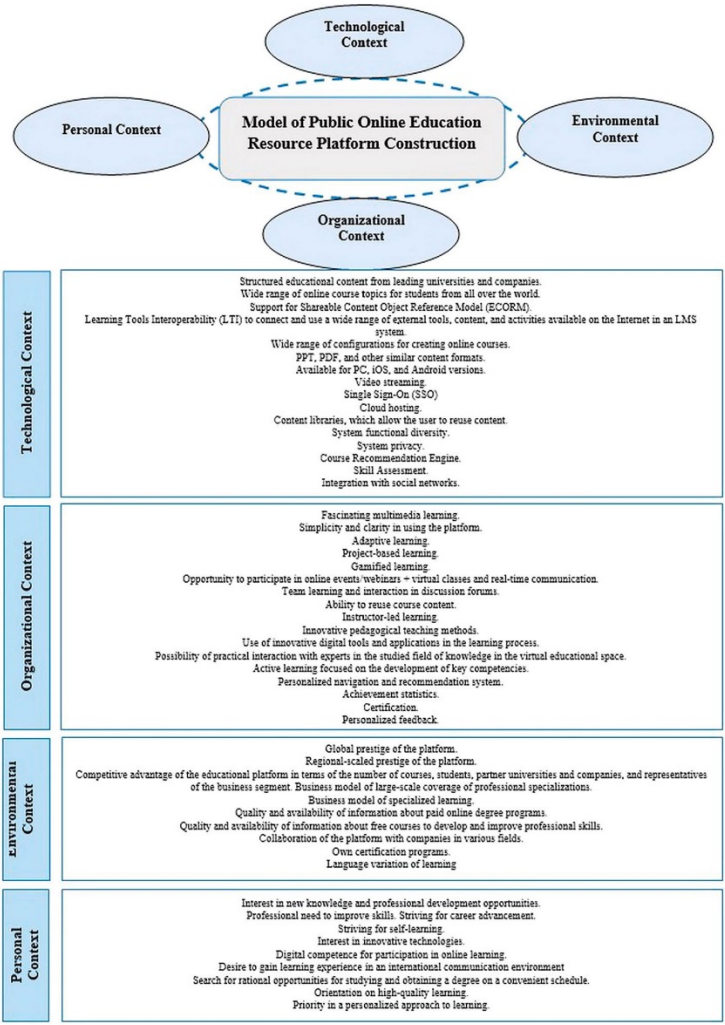


Figure 2. Model of Public Online Education Resource Platform Construction. * developed by the author.

Table 2. Survey respondent questionnaire.

	Assess the degree of influence of causal factors (technological, organizational, environmental and personal context of the educational platform) on your decision to start learning in MOOCs.				
	Psychometric Likert scale				
Statement	1 – no effect at all	2 – no effect	3 – partial effect	4 – significant effect	5 – maximum effect
The following technological aspects influence my decision to start education in MOOCs:					
1	Structured educational content from leading universities and companies.				
2	Wide range of online course topics for students from all over the world.				
3	Support for Shareable Content Object Reference Model (ECORM).				
4	Learning Tools Interoperability (LTI) to connect and use a wide range of external tools, content, and activities available on the Internet in an LMS system.				
5	Wide range of configurations for creating online courses.				
6	PPT, PDF, and other similar content formats.				
7	Available for PC, iOS, and Android versions.				
8	Video streaming.				
9	Single Sign-On (SSO)				
10	Cloud hosting.				
11	Content libraries, which allow the user to reuse content.				
12	System functional diversity.				
13	System privacy.				
14	Course Recommendation Engine.				
15	Skill Assessment.				
16	Integration with social networks.				
The following organizational aspects influence my decision to start education in MOOCs:					
17	Fascinating multimedia learning.				
18	Simplicity and clarity in using the platform.				
19	Adaptive learning.				
20	Project-based learning.				
21	Gamified learning.				
22	Opportunity to participate in online events/webinars + virtual classes and real-time communication				
23	Team learning and interaction in discussion forums.				
24	Instructor-led learning.				
25	Innovative pedagogical teaching methods.				
26	Use of innovative digital tools and applications in the learning process.				
27	Possibility of practical interaction with experts in the studied field of knowledge in the virtual educational space.				
28	Active learning focused on the development of key competencies.				
29	Personalized navigation and recommendation system.				
30	Achievement statistics.				
31	Certification.				
32	Personalized feedback.				
The following environmental aspects influence my decision to start education in MOOCs:					
33	Global prestige of the platform.				
34	Regional-scaled prestige of the platform.				
35	Competitive advantage of the educational platform in terms of the number of courses, students, partner universities and companies, and representatives of the business segment.				
36	Business model of large-scale coverage of professional specializations.				
37	Business model of specialized learning.				
38	Quality and availability of information about paid online degree programs.				
39					

Appendix. Survey results.

Condition variable		Factor dimension and items measured	Mean
Technological context	1.1.	Structured educational content from leading universities and companies	4.972
	1.2	Wide range of online course topics for students from all over the world	4.816
	1.3	Support for Shareable Content Object Reference Model (SCORM)	3.012
	1.4.	Learning Tools Interoperability (LTI) to connect and use a wide range of external tools, content, and activities available on the Internet in an LMS system	3.219
	1.5.	Wide range of configurations for creating online courses	3.012
	1.6.	PPT, PDF, and other similar content formats	4.573
	1.7.	Available for PC, iOS, and Android versions	4.478
	1.8.	Video streaming	3.193
	1.9.	Single Sign-On (SSO)	3.184
	1.10	Cloud hosting	3.156
	1.11	Content libraries, which allow the user to reuse content	4.721
	1.12	System functional diversity	4.915
	1.13	System privacy	4.967
	1.14	Course Recommendation Engine	4.821
	1.15	Skill Assessment	4.534
	1.16	Integration with social networks	4.896
Context mean			4.154
Standard deviation			0.833
Organizational context	2.1.	Fascinating multimedia learning	4.975
	2.2.	Simplicity and clarity in using the platform	4.989
	2.3.	Adaptive learning	4.451
	2.4.	Project-based learning	4.711
	2.5.	Gamified learning	4.071
	2.6.	Opportunity to participate in online events/webinars + virtual classes and real-time communication	4.914
	2.7.	Team learning and interaction in discussion forums	4.906
	2.8.	Ability to reuse course content	3.016
	2.9.	Instructor-led learning	3.132
	2.10.	Innovative pedagogical teaching methods	3.934
	2.11.	Use of innovative digital tools and applications in the learning process	3.824
	2.12.	Possibility of practical interaction with experts in the studied field of knowledge in the virtual educational space	4.894
	2.13.	Active learning focused on the development of key competencies	4.756
	2.14.	Personalized navigation and recommendation system	4.593
	2.15.	Achievement statistics	3.836
	2.16.	Certification	4.956
	2.17.	Personalized feedback	3.001
Context mean			4.292
Standard deviation			0.718
Environmental context	3.1.	Global prestige of the platform	3.581
	3.2.	Regional-scaled prestige of the platform	4.856
	3.3.	Competitive advantage of the educational platform in terms of the number of courses, students, partner universities and companies, and representatives of the business segment	4.931
	3.4.	Business model of large-scale coverage of professional specializations	3.958
	3.5.	Business model of specialized learning	4.672
	3.6.	Quality and availability of information about paid online degree programs	4.673
	3.7.	Quality and availability of information about free courses to develop and improve professional skills	4.173
	3.8.	Collaboration of the platform with companies in various fields	3.742
	3.9.	Own certification programs	2.188
	3.10.	Language variation of learning	4.691
Context mean			3.746
Standard deviation			1.060
Personal context	4.1.	Interest in new knowledge and professional development opportunities	3.572
	4.2.	Professional need to improve skills	3.263
	4.3.	Striving for career advancement	4.592
	4.4.	Striving for self-learning	3.673
	4.5.	Interest in innovative technologies	3.854
	4.6.	Digital competence for participation in online learning	4.925

Figure 2. Imperial attire. *Source* The Palace Museum in Beijing.

Figure 3. The hall of mental cultivation. *Source* The Palace Museum in Beijing.

Table 2 Components, description, devices/software, and educational approach for metaverse integration

Component	Description	Devices/Software Used	Educational Approach
Virtual Classes and Communication Spaces	Virtual spaces replicating physical classrooms, including shared zones for interaction between students and teachers, resembling a 3D environment.	Virtual reality headsets (Oculus Quest 2), computers with virtual reality capabilities, and metaverse platform software (tested in the study).	Interactive lessons on selected subjects, where teachers conduct real-time classes; areas for group work and discussions.
Virtual Experiments	Laboratory simulations enabling students to conduct virtual experiments, perform calculations, create graphs, explore information, etc., providing an interactive way of acquiring knowledge.	Educational virtual reality software (Labster), interactive whiteboards for classroom learning.	Step-by-step modelling sessions; opportunities for independent research and hypothesis testing.
Immersive Content Delivery	Educational materials presented in engaging formats, utilizing storytelling and visual appeal through modern means.	Software for 3D modeling, animation tools, and educational gaming platforms (Minecraft Education Edition).	Narrative learning experiences with elements of gamification; interactive modules that incorporate storytelling in subjects such as history or literature, as well as in other disciplines.
Interactive Exchange of Information	Intuitively understandable and visually rich interfaces for information exchange and access, resembling interactive holograms or augmented reality.	Augmented reality interfaces, touch displays, cloud-based content management systems for the metaverse.	Students and teachers can exchange multimedia resources in a shared virtual space, participate in group projects, and receive immediate feedback.

Table 4 Indicators of student engagement level in control and influence groups across three subscales

			Cognitive Activity	Behavioral Interaction	Emotional Engagement
Seventh grade (middle school)	Control group	Mean	24.05	26.53	29.16
		Standard Deviation	3.064	2.590	2.672
		Standard Error of the Mean	0.703	0.594	0.613
		Variance	9.386	6.708	7.140
		Excess Kurtosis	−0.398	−0.875	−0.312
		Standard Error of Excess Kurtosis	1.014	1.014	1.014
		Skewness	0.670	−0.055	−0.521
	Experimental group	Mean	31.48	33.62	33.00
		Standard Deviation	2.182	2.500	2.449
		Standard Error of the Mean	0.476	0.545	0.535
		Variance	4.762	6.248	6.000
		Excess Kurtosis	-1.240	-1.443	-1.775
		Standard Error of Excess Kurtosis	0.972	0.972	0.972
		Skewness	0.434	−0.113	0.023
Testing differences		U Mann-Whitney	14.000	7.500	61.500
		W Wilcoxon	204.000	197.500	251.500
		Z	-5.045	-5.219	-3.788
		Asymptotic Significance	**0.000**	**0.000**	**0.000**
Tenth grade (senior high school)	Control group	Mean	29.85	28.80	31.85
		Standard Deviation	2.498	2.016	2.455
		Standard Error of the Mean	0.559	0.451	0.549
		Variance	6.239	4.063	6.029
		Excess Kurtosis	1.469	-1.251	-1.547
		Standard Error of Excess Kurtosis	0.992	0.992	0.992
		Skewness	-1.477	0.175	0.097
	Experimental group	Mean	33.00	33.70	36.20
		Standard Deviation	2.026	2.386	1.609
		Standard Error of the Mean	0.453	0.534	0.360
		Variance	4.105	5.695	2.589
		Excess Kurtosis	−0.427	-1.201	−0.993
		Standard Error of Excess Kurtosis	0.992	0.992	0.992
		Skewness	0.759	−0.121	−0.529
Testing differences		U Mann-Whitney	73.500	28.000	33.000
		W Wilcoxon	283.500	238.000	243.000
		Z	-1.731	-4.681	-4.555
		Asymptotic Significance	**0.004**	**0.000**	**0.000**

Table 5 Indicators of the level of motivation among students in control and influence groups across three subscales

			Internal motivation	External motivation	External motivation
Seventh grade (middle school)	Control group	Mean	23.26	27.58	23.63
		Standard Deviation	3.478	4.247	2.454
		Standard Error of the Mean	0.798	0.974	0.563
		Variance	12.094	18.035	6.023
		Excess Kurtosis	-1.401	-1.060	−0.495
		Standard Error of Excess Kurtosis	1.014	1.014	1.014
		Skewness	−0.176	−0.252	0.276
	Influence group	Mean	29.71	32.86	30.81
		Standard Deviation	1.821	2.496	2.337
		Standard Error of the Mean	0.397	0.545	0.510
		Variance	3.314	6.229	5.462
		Excess Kurtosis	−0.264	-1.080	−0.696
		Standard Error of Excess Kurtosis	0.972	0.972	0.972
		Skewness	−0.574	0.457	0.228
Testing differences		U Mann-Whitney	0.000	41.000	0.000
		W Wilcoxon	190.000	231.000	190.000
		Z	-5.420	-4.316	-5.419
		Asymptotic Significance	**0.000**	**0.000**	**0.000**
Tenth grade (senior high school)	Control group	Mean	27.00	30.00	28.55
		Standard Deviation	2.000	1.556	2.012
		Standard Error of the Mean	0.447	0.348	0.450
		Variance	4.000	2.421	4.050
		Excess Kurtosis	−0.812	-1.050	−0.453
		Standard Error of Excess Kurtosis	0.992	0.992	0.992
		Skewness	0.175	0.279	0.263
	Influence group	Mean	32.70	34.00	33.20
		Standard Deviation	2.029	1.338	1.196
		Standard Error of the Mean	0.454	0.299	0.268
		Variance	4.116	1.789	1.432
		Excess Kurtosis	-1.286	−0.877	−0.740
		Standard Error of Excess Kurtosis	0.992	0.992	0.992
		Skewness	−0.008	0.147	−0.426
Testing differences		U Mann-Whitney	10.000	1.500	0.000
		W Wilcoxon	220.000	211.500	210.000
		Z	-5.192	-5.404	-5.451
		Asymptotic Significance	**0.000**	**0.000**	**0.000**

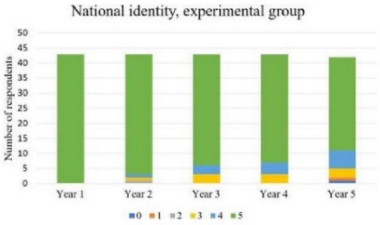


Fig. 1 Assessment of students' own national identity (experimental group). Number of respondents from the first- to fifth-year of study.

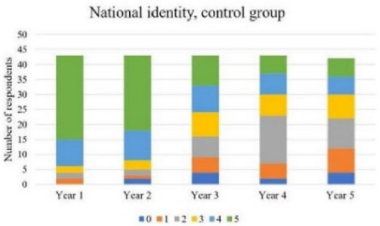


Fig. 2 Assessment of students' own national identity (control group). Number of respondents from the first- to fifth-year of study.

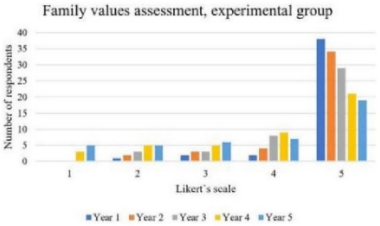


Fig. 3 Assessment of compliance with family values (experimental group). Number of respondents from the first- to fifth-year of study.

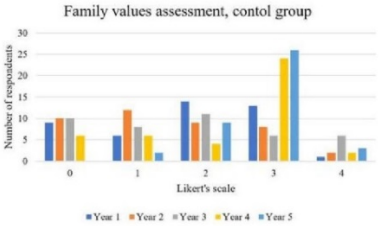


Fig. 4 Assessment of compliance with family values (control group). Number of respondents from the first- to fifth-year of study.

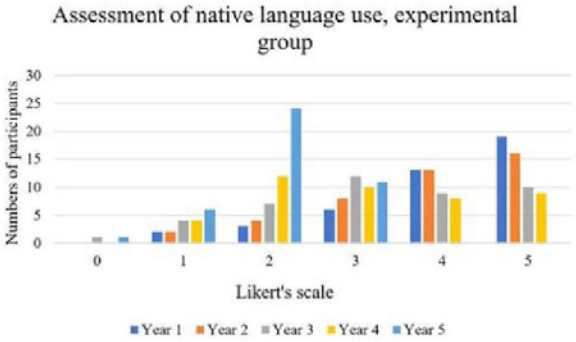


Fig. 5 Assessment of native language use (experimental group). Number of respondents from the first- to fifth-year of study.

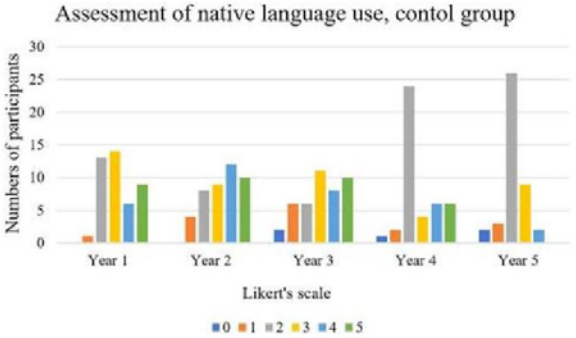


Fig. 6 Assessment of native language use (control group). Number of respondents from the first- to fifth-year of study.

Figure 1. Soviet Central Asia in 1923. *Source:* Thomas (2018).

Figure 2. Soviet Central Asia in 1936. *Source:* Thomas (2018).

Table 1. The transition of power by Central Asian elites between the Soviet and post-Soviet periods.

Central Asian Country / Leader	Leader's year of birth	The year office was taken	Term of office	Era
Kazakhstan				
Nazarbayev, Nursultan Abishevich	1940	1989	1989–2019	Soviet/post-Soviet
Tokayev, Kassym-Jomart Kemelevich	1953	2019		Post-Soviet
Kyrgyzstan				
Akayev, Askar Akayevich	1944	1990	1990–2005	Soviet/post-Soviet
Kadyrbekov, Duyshonbiyevich Dushenbiyevich	1949	2005	2005	Post-Soviet
Bakiyev, Kurmanbek Salievich	1949	2005	2010	Post-Soviet
Otunbayeva, Roza Isakovna	1950	2010	2011	Post-Soviet
Atambayev, Almazbek Sharshenovich	1956	2011	2017	Post-Soviet
Jeenbekov, Sooronbay Sharipovich	1958	2017	2020	Post-Soviet
Japarov, Sadyr Nurgozhoevich	1968	2020	2020	Post-Soviet
Mamytov, Talant Turdumamatovich	1976	2020	2021	Post-Soviet
Japarov, Sadyr Nurgozhoevich	1968	2021	....	Post-Soviet
Tajikistan				
Mahkamov, Qahhor	1932	1990	1991	Soviet
Nabiev, Rahmon	1930	1991	1992	Soviet/post-Soviet
Rahmon (Rahmonov), Emomali	1952	1992	....	Post-Soviet
Turkmenistan				
Niyazov, Saparmurat Atayevich	1940	1991	2006	Soviet/post-Soviet
Berdimuhamedow, Gurbanguly M€alikguly€yewic,	1957	2006	....	Post-Soviet
Uzbekistan				
Karimov, Islam Abduganiyevich	1938	1991	2016	Soviet/post-Soviet
Yuldashev, Nigmatilla Tulkinovich	1962	2016	2016	Post-Soviet
Mirziyoyev, Shavkat Miromonovich	1957	2016	....	Post-Soviet

Source: Compiled by the authors.

Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
•regime stability •socio-economic stability •economic reforms	•regime stability •protection of traditional values •development of national identity	•regime stability •protection of traditional values •development of national identity	•regime stability •protection of traditional values •development of national identity	•economic reforms •regime stability •socio-economic stability

Figure 4. Expert opinions on the goals and priorities of the Central Asian ruling elites. *Source:* Developed by the authors on the basis of Baldakova et al. (2021).

Source: CIA World Factbook (2022).

Country	Ethnic group	% Population
Kazakhstan	Kazakh	63.1%
Kyrgyzstan	Kyrgyz	70.8%
Tajikistan	Tajik	84.3%
Turkmenistan	Turkmen	85%
Uzbekistan	Uzbek	80%

Table 2. Share of Titular Ethnic Groups in Central Asian Countries as of 2022.

Fig. 1 Modern Chinese animations: **a** *Wish Dragon*; **b** *Crystal Sky of Yesterday*. Source: https://www.youtube.com/watch?v=UWaQ4CF6liE

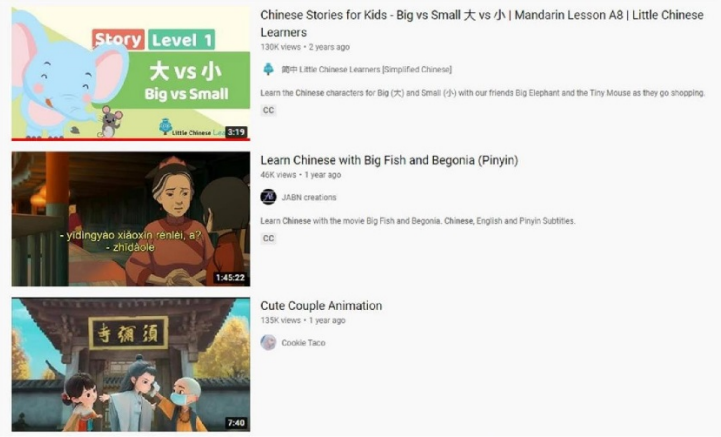


Fig. 2 Popular animations on YouTube by the query *"Chinese cartoons"*. Source: https://www.youtube.com/results?search_query=chinese+cartoo

Table 3 Engagement and interest scale results, %

Animation	EI for Group 2	EI for Group 1	Mean
Heroic Little Sisters of the Grassland	39.78	65.94	52.86
The Story of Afanti	23.55	14.21	18.88
The Three Monks	51.87	36.19	44.03
The Peacock Princess	60.32	54.73	57.53
Riyuetan Pool	6.18	7.04	6.61
Fire Festival	13.42	12.12	12.77
The Touching	30.61	37.92	34.27
Long Hair Girl	42.85	35.44	39.15
White Bird	36.52	64.02	50.27
Tounggu Legend	6.36	5.16	5.76

Table 4 Engagement and interest and animation ranking data according to respondents' and YouTube users' evaluations

Animation	Respondents		YouTube users	
	EI	Rank	EI	Rank
Heroic Little Sisters of the Grassland	125	2	17	7
The Story of Afanti	45	7	2	9
The Three Monks	106	4	685	1
The Peacock Princess	136	1	265	2
Riyuetan Pool	16	9	1	10
Fire Festival	30	8	5	8
The Touching	82	6	18	6
Long Hair Girl	93	5	27	5
White Bird	120	3	259	3
Tounggu Legend	14	10	31	4

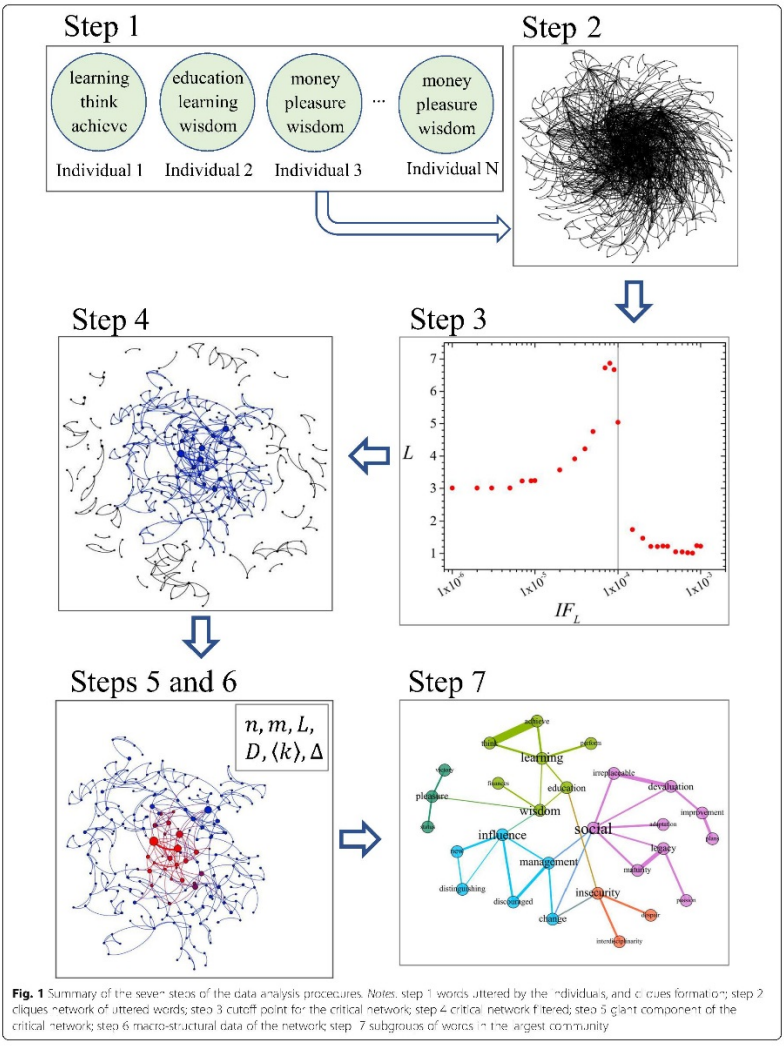


Fig. 1 Summary of the seven steps of the data analysis procedures. *Notes*. step 1 words uttered by the individuals, and cliques formation; step 2 cliques network of uttered words; step 3 cutoff point for the critical network; step 4 critical network filtered; step 5 giant component of the critical network; step 6 macro-structural data of the network; step 7 subgroups of words in the largest community

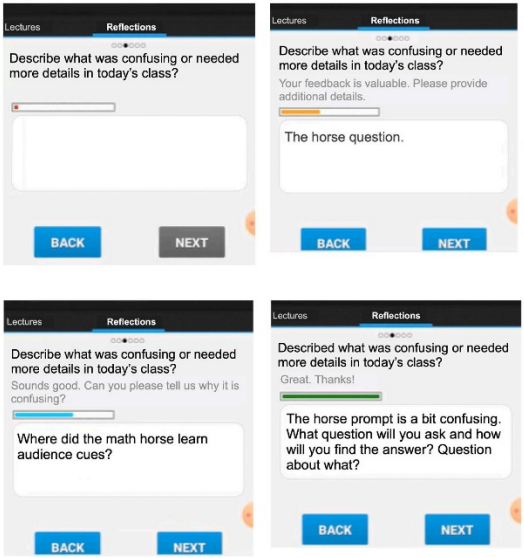


Fig. 1. Mobile application interface with no reflection (top left), vague reflection (top right), general reflection (bottom left) and specific reflection (bottom right).

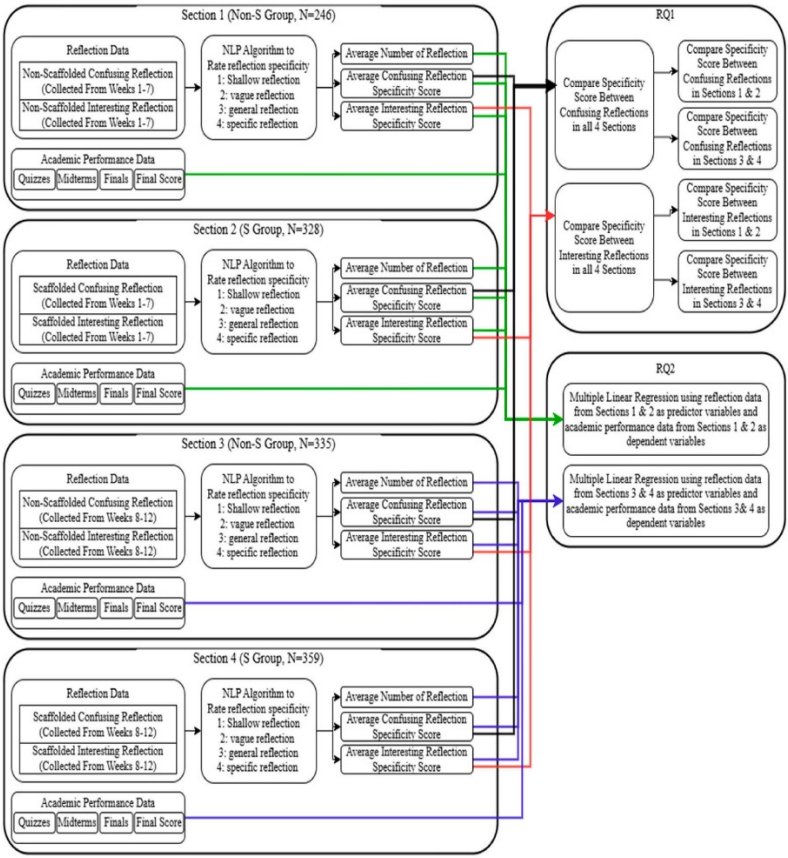


Fig. 2. Study design diagram.

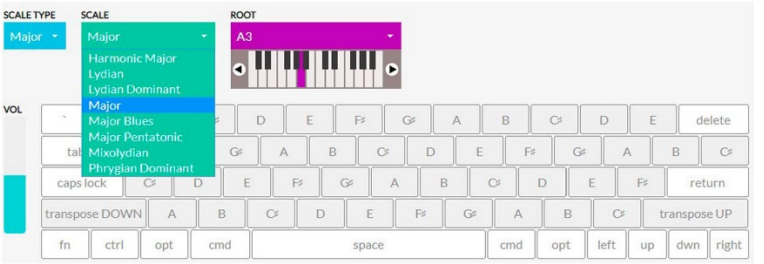


Figure 1. aQWERTYon set to A major.

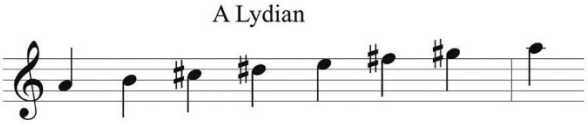


Figure 2. A Lydian scale.

The video and audio recordings confirm that S2's playing is lagging behind and gaze plot data (Figure 3) suggest some trial and error during attempts to play along. Larger skips in the melody (descending fifth, ascending sixth) seem to add to the challenge, although the student's gaze stays within the tone range of the motive.

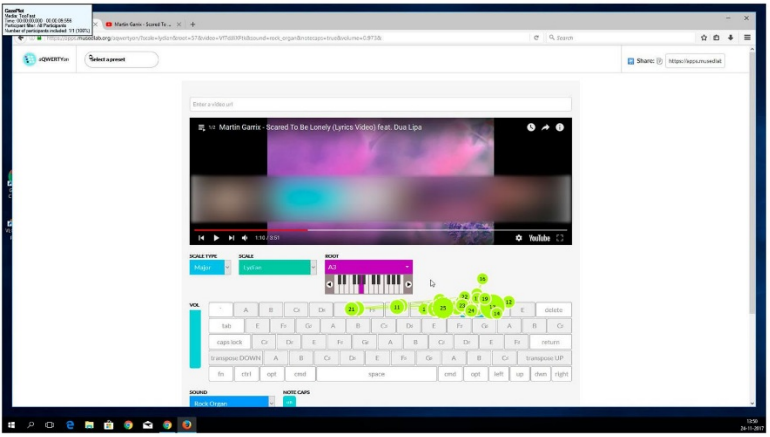


Figure 3. Gaze plot: fixations while playing along with motive.

During the interview, S2 builds a LEGO construction to illustrate a challenge she has learning music theory (Figure 4).

S2: When one learns music theory
it's like a whole new world
there are like wheels and stuff everywhere
that point in different directions
and although you know that wheels actually only go on the ground
things are not at all the way you expect
and then it's like a whole new language
so then … when it's unfamiliar to you,
it's like … a good, or quite ok construction
and you have kept building on it
but then you suddenly come to something
like when it says on the internet […]
and it's like an E+ chord
I have no idea about what E+ means or anything
like a wheel that goes in another direction
it is supposed to have some explanation, but…

Researcher: But it doesn't fit with what you know?

S2: Yes, exactly
I have a foundation, but …

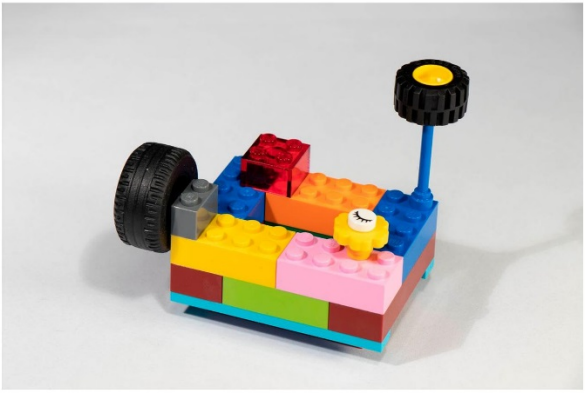


Figure 4. LEGO illustration by student: 'Things are not the way you expect'.

Figure 5. LEGO illustration by student: 'Couldn't play fast enough'.

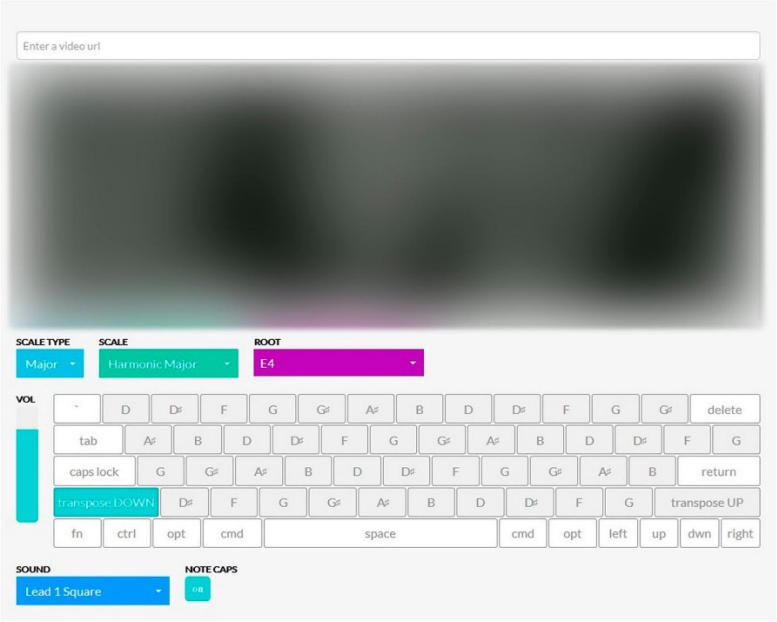


Figure 6. Preset for 'Single Ladies' in the aQWERTYon.

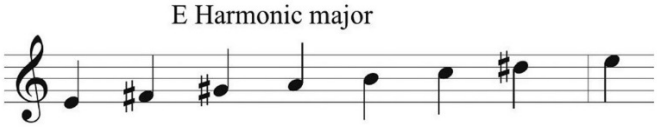


Figure 7. E harmonic major scale.

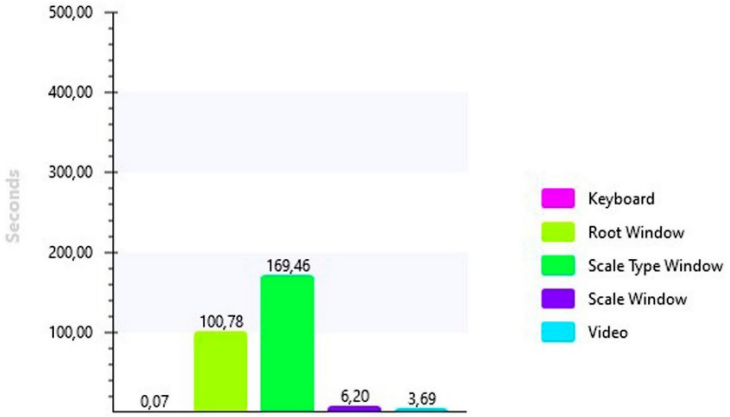


Figure 9. Times to first fixation in seconds for different parts of the aQWERTYon during work with the song 'Single Ladies'.

Figure 14. LEGO illustration by student: 'Simple chords and nicer small stuff'.

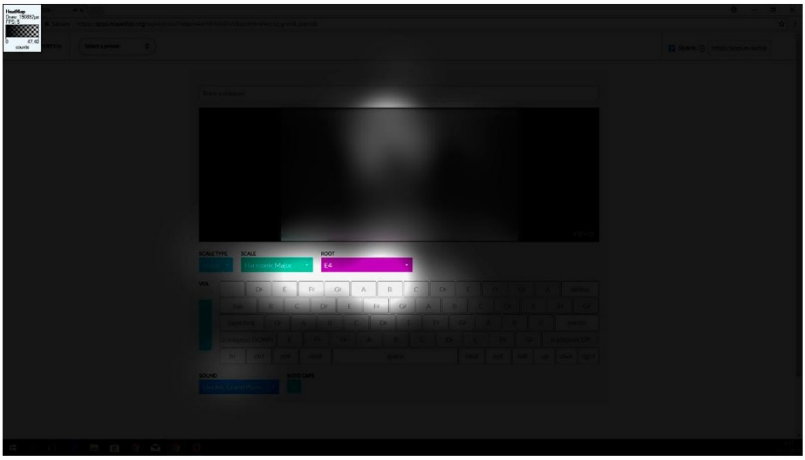


Figure 11. Chord root found.

But there is some chord we're not hearing. The chords 'not heard' are probably C+ and Am, both

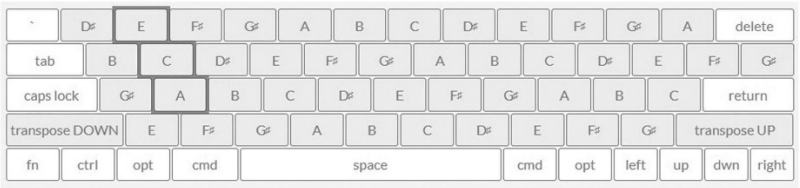


Figure 12. Chord stack from E down on the aQWERTYon.

Table 1. Summary of methods and potential for research.

Method	Potential for research
Analysis of video recording	Detailed observation of problem-solving, interaction between students and interaction with application
Analysis of audio recording	Possibility to follow processes of 'theorising out loud' through words, playing and humming, to note presence and absence of relevant terminology, and to gain understanding about the experience of using a digital application
Qualitative interview (LEGO)	Possibility to deepen understanding of students' subjective experiences of learning to theorise music both in general and related to a specific learning/theorising session
Eye tracking	Indications of what elements of an interface (digital application, instrument or other) students focus on and make use of as part of their theorising strategies
Software development as music education research	Analysis of the educational value of different elements of the application (facilitating learning, introducing friction points that can be used for discussion), ideas for improving design and functionality
Musical analysis of chosen material and students' musical activity (playing, singing, humming) while theorising	Identification of challenges in musical material, analysis of students' explorations and theorisation strategies, opportunity to understand students' theoretical preassumptions and learning needs

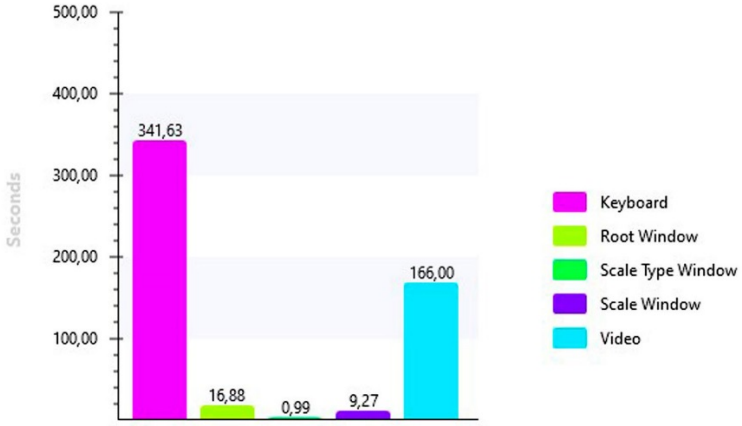


Figure 8. Time (in seconds) spent on different parts of the aQWERTYon during work with the song 'Single Ladies'.

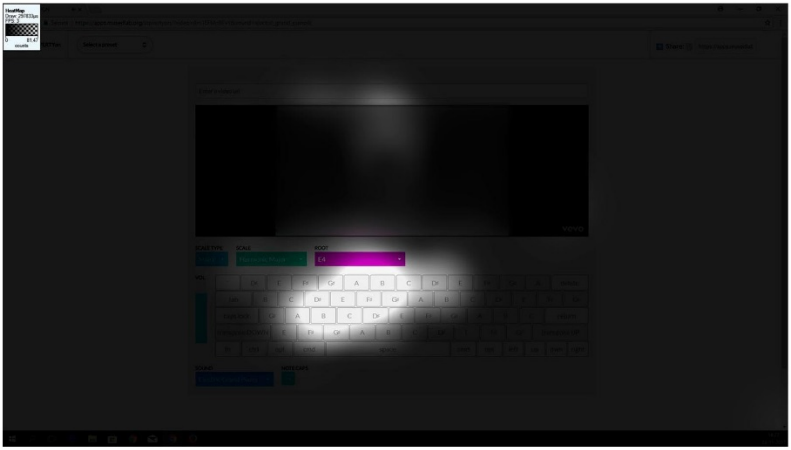


Figure 10. Chord root search.

Comparison Chart

ACHIEVEMENT TEST TOPICS	NOTE WORKS	RHYTHM CAT	GARAGE BAND	KIDS PIANO
Basic Music Concepts	✓		✓	✓
Key Signatures	✓		✓	
Staff and notes	✓		✓	✓
Note values	✓	✓		✓
Instrument types			✓	✓
Time Signatures		✓		
Letter representation of the notes	✓			✓
Articulation – Musical Elements			✓	
The places of the notes on piano	✓			✓
Tempo markings			✓	

Figure 1. The content of mobile technology and achievement test subjects.

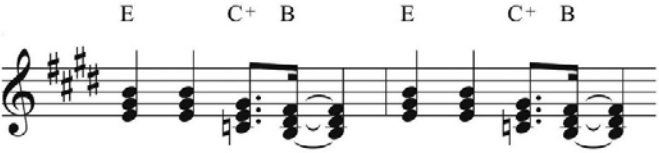


Figure 13. Chord progression for 'Single Ladies' as played by student.

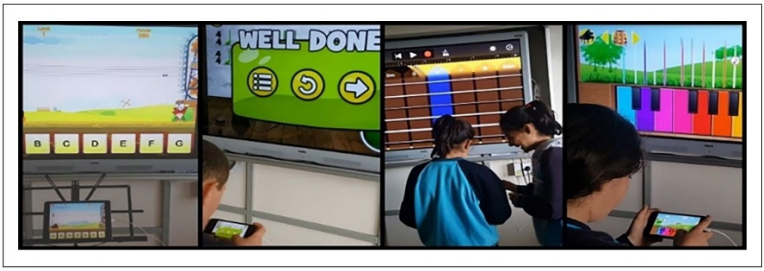


Figure 2. The photographs related to the experimental procedure.

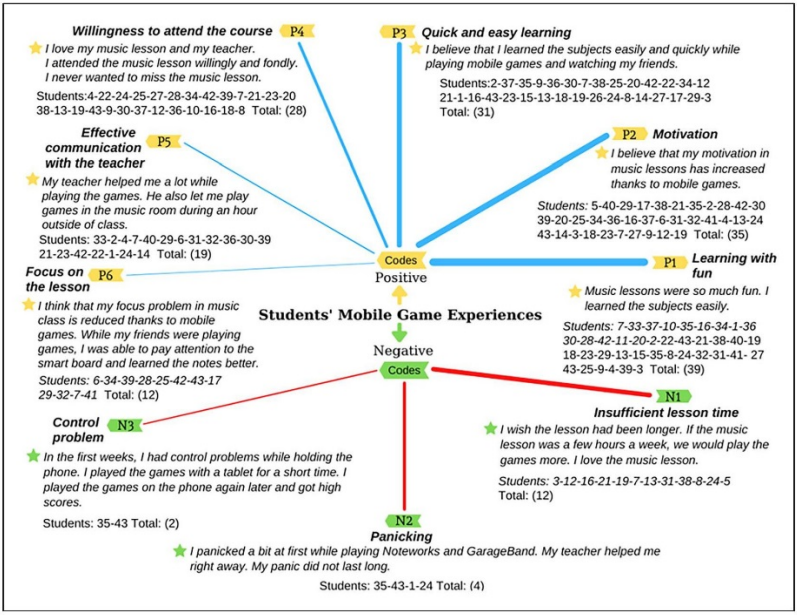


Figure 3. Relationship map of students' mobile learning experiences.

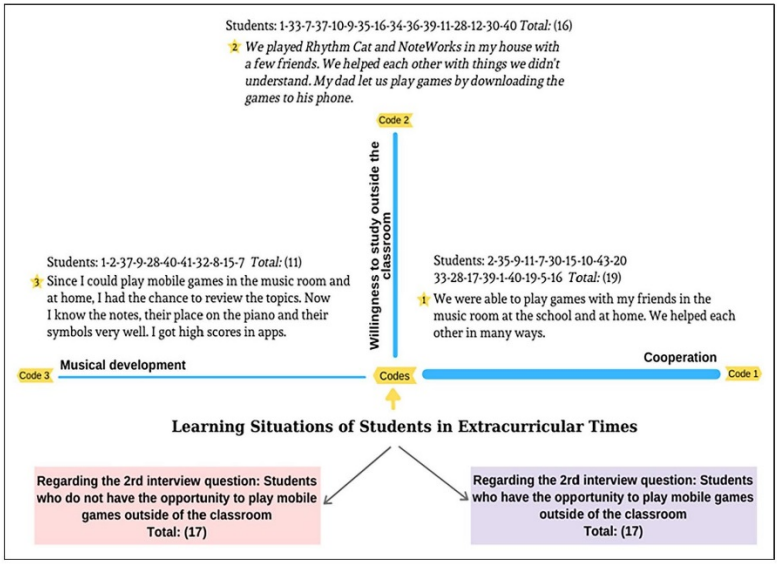


Figure 4. Relationship map of students' learning in extracurricular times.

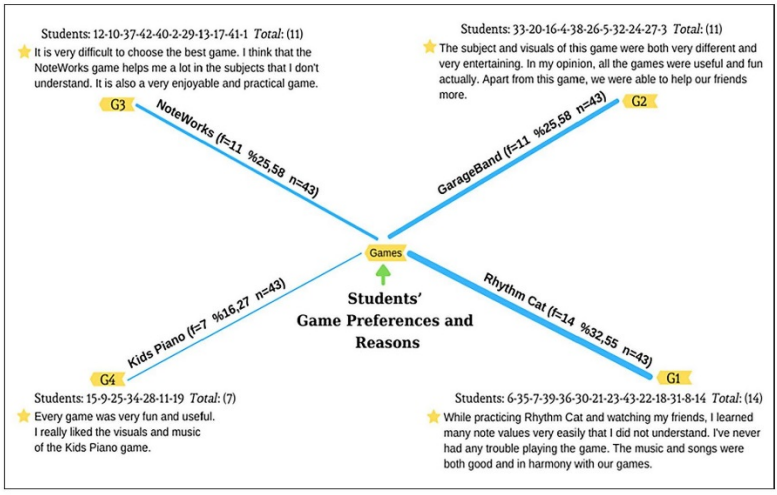


Figure 5. Relationship map of students' mobile technology preferences and reasons.

FIGURE 1 | Pedagogical benefits model of learning via interactive video.

Structural Elements	Tree 1	Tree 2	Tree 3	Tree 4	Tree 5
Opening Video					
Nodes	53	72	51	6	57
Levels	4	9	5	5	6
Linear Narrative Structure					
Looping					
Branching					
External links					
Closing Video					

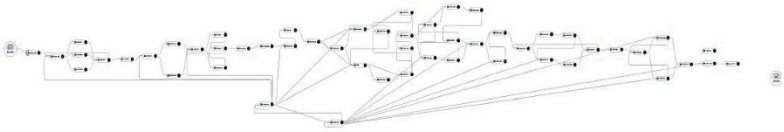
FIGURE 2 | Structural elements of models in interactive videos for learning (Nodes—the video clips in the tree; Levels—number of choices at a given time; Looping—the option to go back to previous clips; Non-Linear Navigation—Moving freely through the different Levels).

Interactive features	MOOC	Social Networks	Flipped Classroom	Gizanut	Car Cat Cow
Conditioning					
Active Rewind					
Narrative choice					
Effecting the Narrative					
Sensitive Timer					
Feedback					
map					

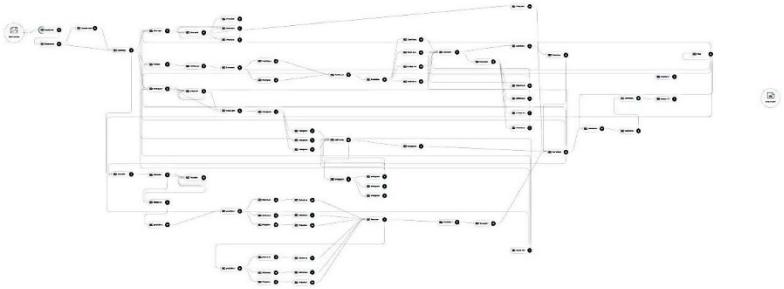
FIGURE 3 | Interactive features usage in developing interactive video for learning.

Appendix A

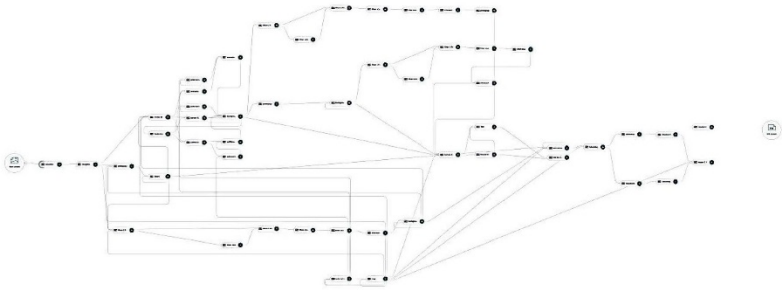
Tree no. 1: 'MOOC'—Moderately linear with central branching junctions.



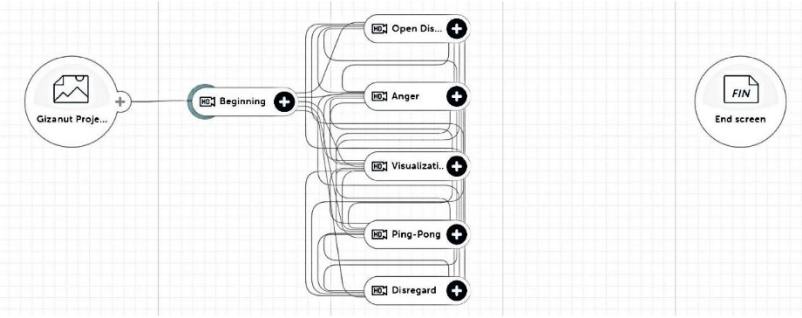
Tree no. 2: 'Social Networks'—Overall linear with multiple branching motifs.



Tree no. 3: 'Flipped Classroom'—Branched structure with multiple branched sub-structures.

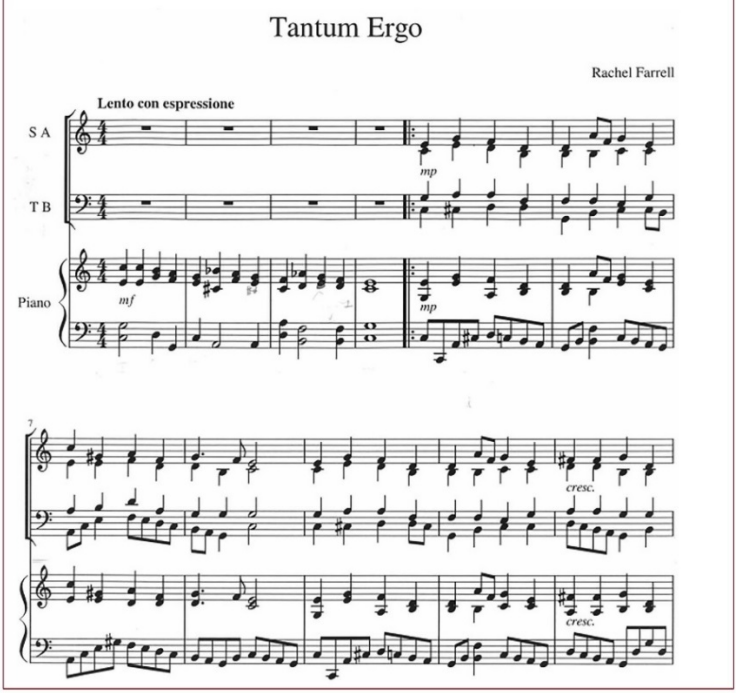


Tree no. 4: 'Gizanut'—Non-linear structure.



Tree no. 5: 'Cat Cow Car'—Linear with gradual non-linear structure and a loop in the end.

Box 1. A composition by Rachell Farrell.



Box 2. Matthew's Violin music 'Melancholy'.

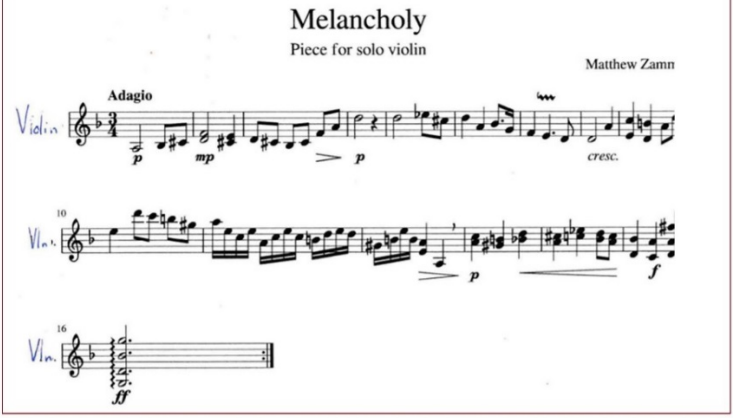


Table 2. Difference of means in pre-test and post-test panel analysis for silent video recordings in Experiment 1.

Body segment factor	Pre-test	Post-test	Difference of means	Difference of means (%)[a]	Cohen's *d*
Head/neck	3.858	4.689	0.832	12	1.14
Back/chest	3.821	4.616	0.795	11	1.30
Low back	4.089	4.842	0.753	11	1.20
Shoulder region	3.832	4.611	0.779	11	1.30
Arms	4.053	4.811	0.758	11	1.25
Hands/wrists	4.405	5.021	0.616	9	1.22
Legs	4.342	5.042	0.700	10	1.19
General impression	4.016	4.847	0.832	12	1.26

[a]We present the difference of means as a percentage to allow readers to compare the present findings to previous research which used the same data collection instruments and expressed the difference in means as such.

Figure 2. Examples of participants, still images taken from pre-test (top) and post-test (bottom) video.

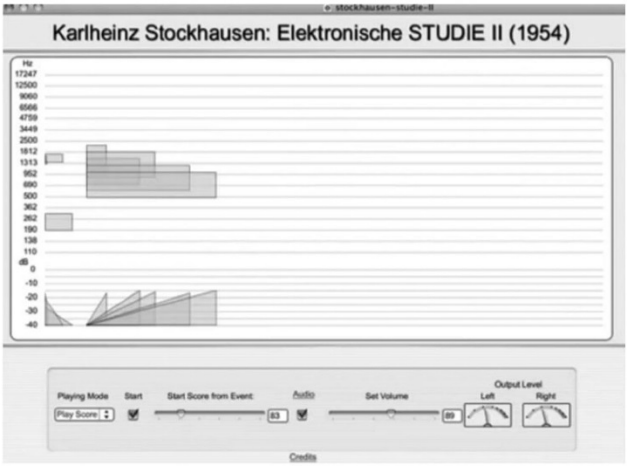


Figure 2. Georg Hajdu, electronic reading of Karlheinz Stockhausen's *Electronic Studie No. 2* (1954) created in MaxMSP (2012).

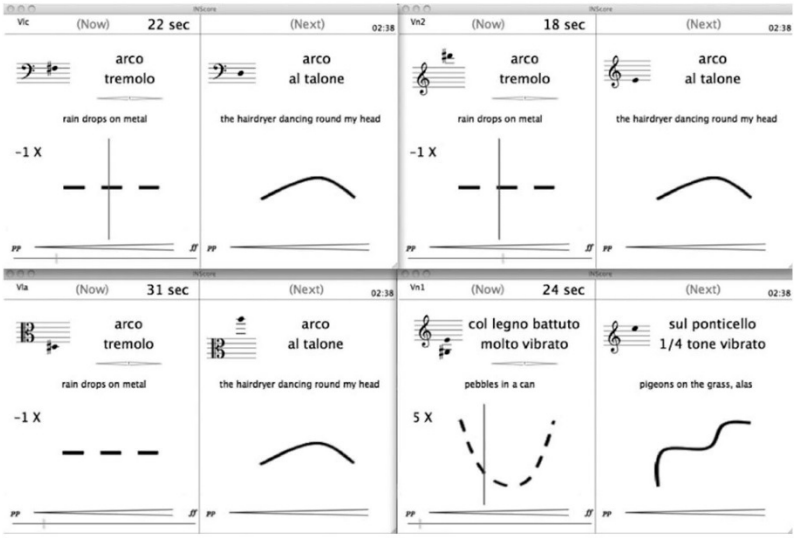


Figure 3. Sandeep Bhagwati, Monochrom, 2011, for string quartet (working version; note the playheads are red).

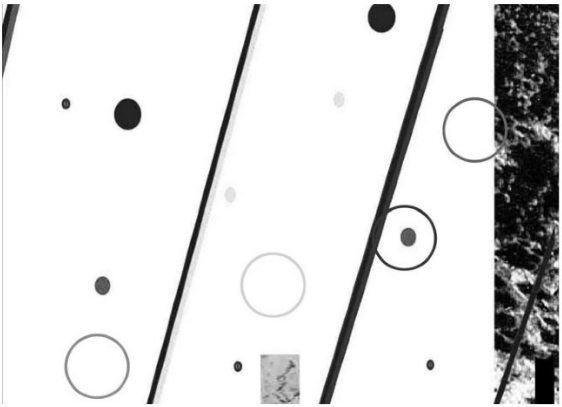


Figure 4. Lindsay Vickery/Cat Hope, 'The Talking Board' (2011). Score showing circles that would each have a separate colour (original image in colour).

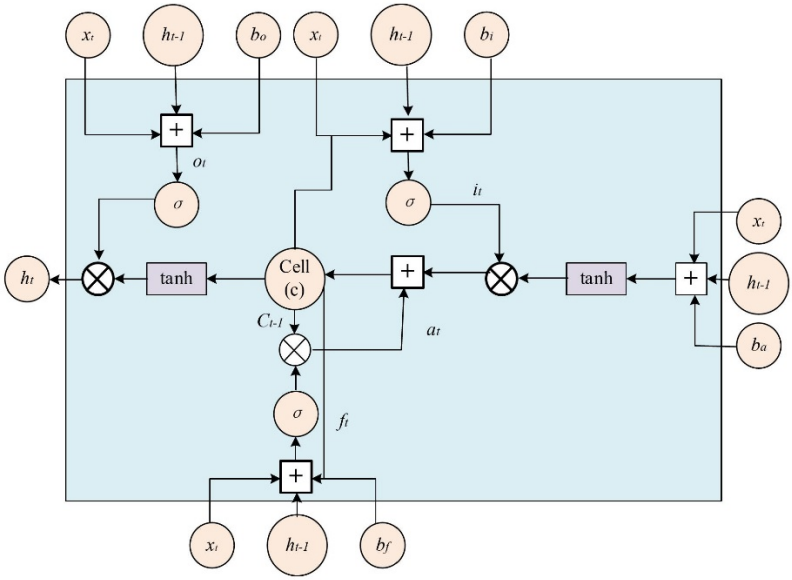


Fig. 3. Network structure diagram of LSTM.

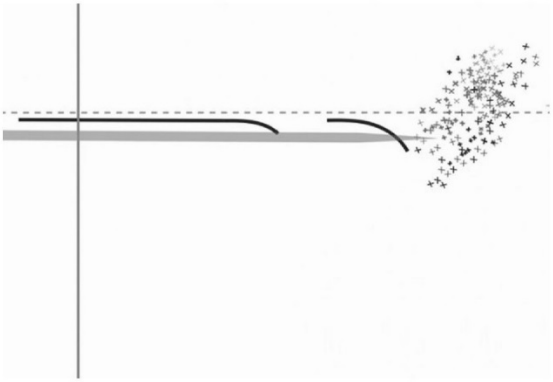


Figure 5. Cat Hope and Lionel Marchetti 'The Last Days of Reality' (2018). Score with a 'partition concrète' embedded in the Decibel ScorePlayer (original image in colour).

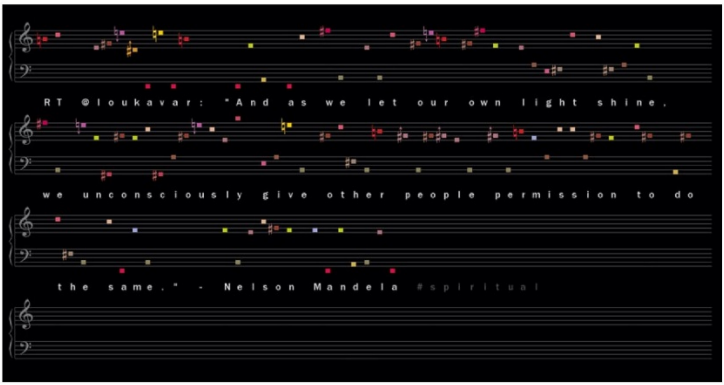


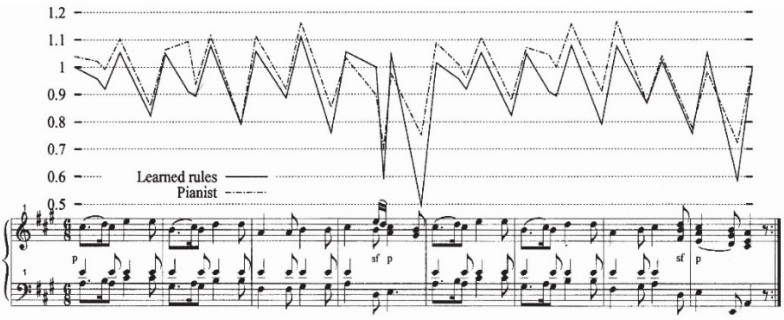
Figure 6. Warren Armstrong and Amanda Cole, *Twitterphonicon* (2014) (original images in colour on a black background).

Hardware configuration	GPU1	Inter Xeon E5-2620 v4 @2.1 GHz
	GPU2	NVIDA GeForce GTX1080Ti 11GB
	Internal storage	128G
Software environment	Language	PyThon 3.7+
	Operating system	Linux Centos7
	DL framework	Pytorch 1.3
	Common library	Numpy, sklearn, opencv, etc.

Table 2. Experimental environment.

Backbone network model	**B0**	**B1**	**B2**	**B3**	**B4**
Network width (w)	1.0	1.0	1.1	1.2	1.4
Network depth (d)	1.0	1.1	1.2	1.4	1.8
Resolution (r)	543	637	775	904	1173

Table 3. Parameter settings.



Figure

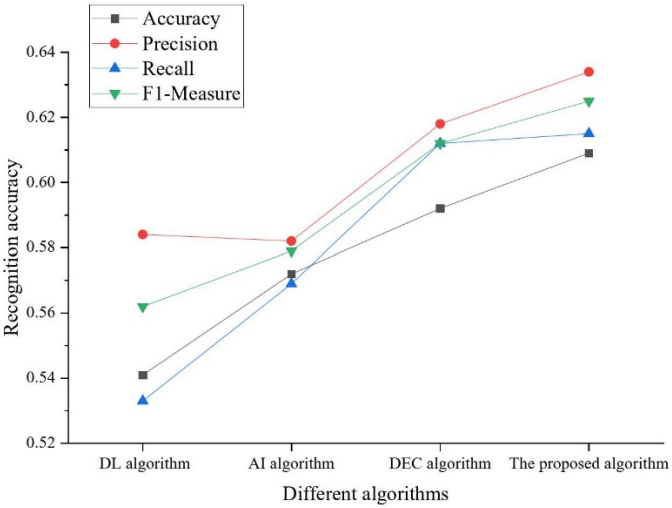


Fig. 4. Model recognition accuracy comparison with all continuous emotional features as input.

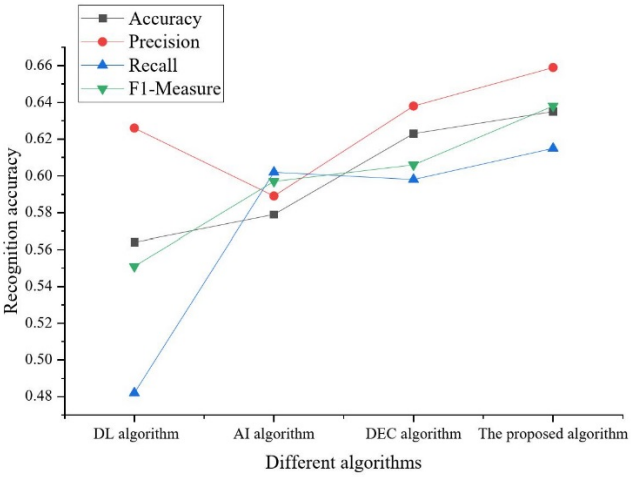


Fig. 5. Model recognition accuracy comparison with all discrete emotional features as input.

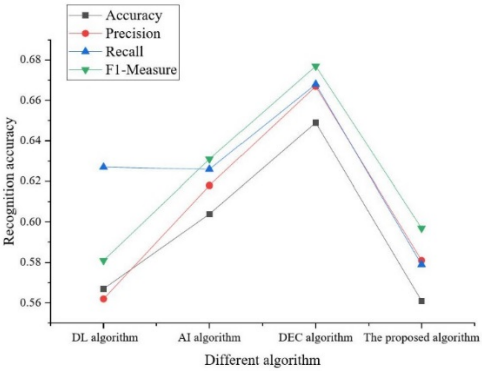


Fig. 6. Model recognition accuracy comparison with input features of continuous and discrete emotional features in a 1:1 ratio.

Model category	Accuracy	Precision	Recall	F1-Measure
DL algorithm	0.541	0.584	0.533	0.562
AI algorithm	0.572	0.582	0.569	0.579
DEC algorithm	0.592	0.618	0.612	0.612
The proposed algorithm	0.609	0.634	0.615	0.625

Table 4. Input the comparison table of model recognition accuracy with all continuous emotional features.

Model category	Accuracy	Precision	Recall	F1-Measure
DL algorithm	0.564	0.626	0.482	0.551
AI algorithm	0.579	0.589	0.602	0.597
DEC algorithm	0.623	0.638	0.598	0.606
The proposed algorithm	0.635	0.659	0.615	0.638

Table 5. Comparison table of model recognition accuracy with all discrete emotional features as input.

Model category	Accuracy	Precision	Recall	F1-Measure
DL algorithm	0.567	0.562	0.627	0.581
AI algorithm	0.604	0.618	0.626	0.631
DEC algorithm	0.649	0.667	0.668	0.677
The proposed algorithm	0.561	0.581	0.579	0.597

Table 6. Comparison table of model recognition with input features of continuous and discrete emotional features in a 1:1 ratio.

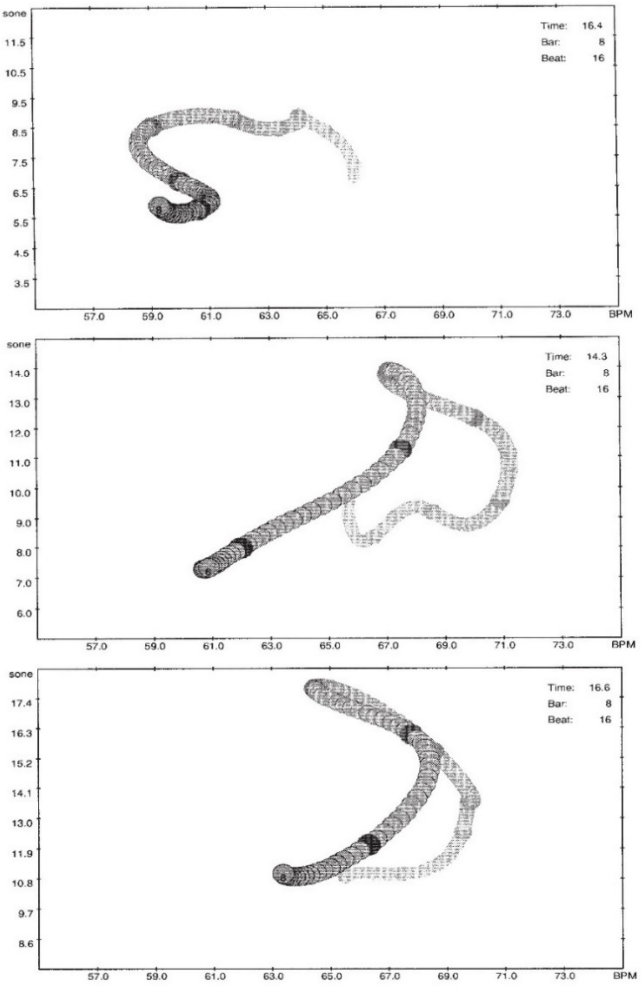


Figure 2.

Performance trajectories over the first eight bars of Von fremden Ländern und Menschen *(from* Kinderszenen, *op.15, by Robert Schumann), as played by Martha Argerich (top), Vladimir Horowitz (center), and Wilhelm Kempff (bottom). Horizontal axis: tempo in beats per minute (bpm); vertical axis: loudness in* sone *(Zwicker and Fastl, 2001). The largest point represents the current instant, while instants further in the past appear smaller and fainter. Black circles mark the beginnings of bars. Movement to the upper right indicates a speeding up (*accelerando*) and loudness increase (*crescendo*) etc. Note that the y axes are scaled differently.*

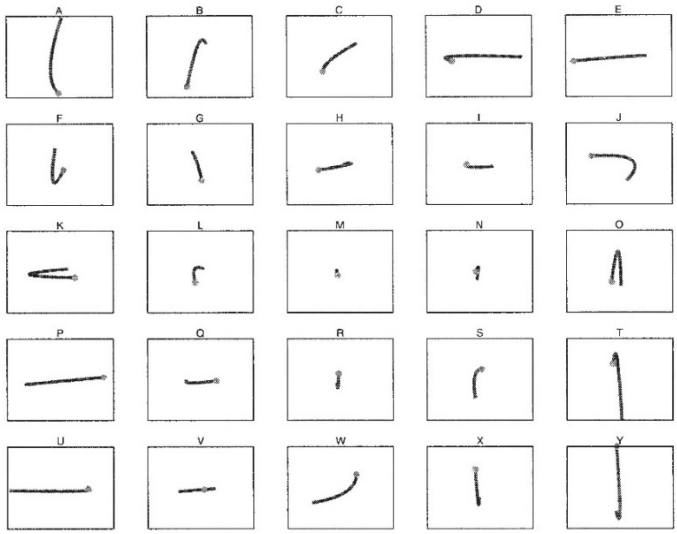


Figure 3.

A typical "Chopin performance alphabet" (set of prototypical performance trajectory segments) computed by segmentation and clustering from Chopin recordings by 13 pianists (among them Arthur Rubinstein, Vladimir Horowitz, and Sviatoslav Richter). To indicate directionality, dots mark the end points of segments.

RNRNRXSRLFBCKVIMRYTSBAGCGRNQJBFXOQNLHCKWOCQVSNRNMMRWMLLMRQJIQHC
KVIQVLLRXYOGFLFSOCQVRSHCQHCQVLQVRSJBFMHKHIQWOFNRSHCFNHPWLGHCQVI
QVHINXSWOFLRSLRSBCPVCGBCKVLQWNXORYOAFOFYOCKVMRHBFVCKVIQVRSNLGLH
KMIQWNRNRJKXSLCPWIGBCKVISVLMLMMLQMRNMRLMMNMMMMRNRNHRSNGHCQQVNMN
QHLRNKVINRNRSXOFHCPWLCCCPWIQVYSVCRVCKJBFNXOXTKVXSBARXBFNLRBCPWO
KWXSSBFJIGGCIBAGFJKVIQWHCXYSWNBBXWJINBFWOCWOAFJOQTLKVRSJBFBFWTL
HBFWHDPHCQHXYTLMNLRNBABXWWSSHISSLRNEIPVIMLFNMXBAQWGQVMQMCKHCPUM
QMIVGMMLLPVKVSVLINLQVHIXJINLGHIMMEDQVJKVHIXJKUHKVHKVE.....
.....

Figure 4.

Beginning of a performance by Vladimir Horowitz of Frédéric Chopin's Ballade op.52 in F minor, coded in terms of the 25 letter "performance alphabet" shown in Figure 3.

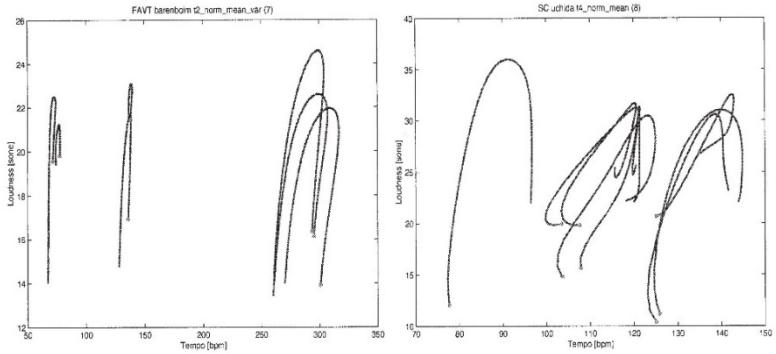


Figure 5.

Two sets of (instantiations of) performance patterns: trajectory segments typical of Daniel Barenboim (left) and Mitsuko Uchida (right). To indicate directionality, a dot marks the end point of a segment.

Figure 1: Duxianqin (credit: Chen Kuangeng).

1.Joystick; 2.String; 3.Bridge; 4.Tuning key; 5.Pickup output jack.

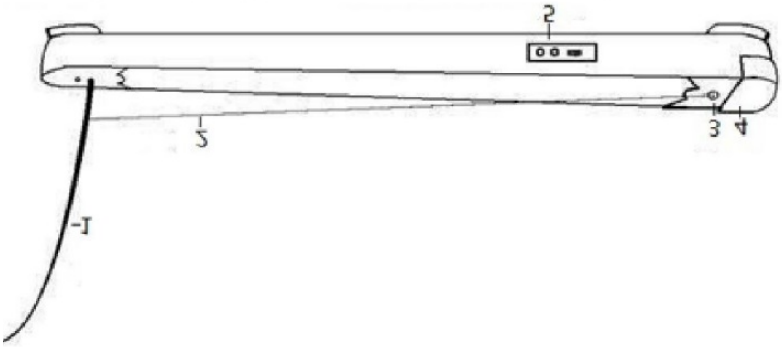


Table 2: Reimagined Duxianqin Features

Instrument	Joystick	Timbre	Overtone	Polyphony
Polyqin	✓	✓	✓	✓
Digiqin	✓	✓		
Octoqin	✓	✓		

Figure 4: Octoqin

Table 1: Participants in workshop

No.	Background	Reference
2	Workshop leaders (UK and China) with cross-cultural research experience	WLUK, WLCN
6	European doctoral students with design, electronic music, and DMI making experience	P1UK, P2UK, P3UK, P4UK, P5UK, P6UK
8	Chinese students and teachers with interdisciplinary background	P1CN, P2CN, P3CN, P4CN, P5CN, P6CN, P7CN, P8CN
4	Traditional Duxianqin performers from Guangxi province in China	D1CN, D2CN, D3CN, D4CN
4	Composers from Beijing trained in traditional and electronic music composition	C1CN, C2CN, C3CN, C4CN

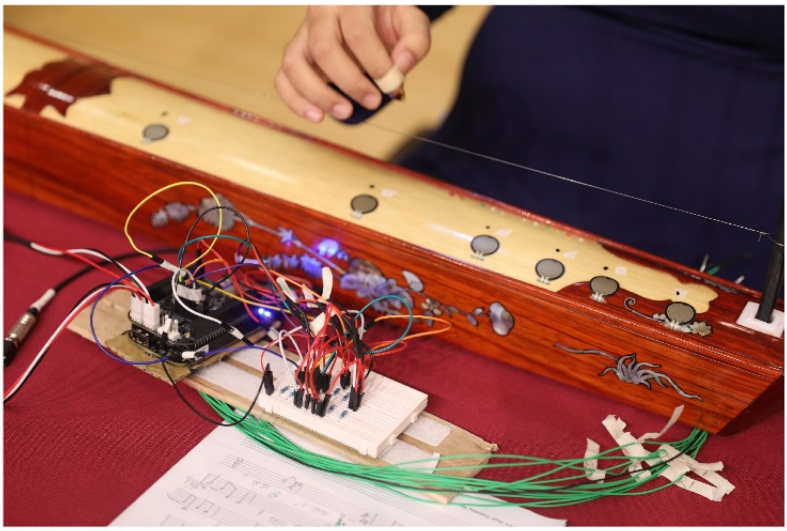


Figure 2: Polyqin

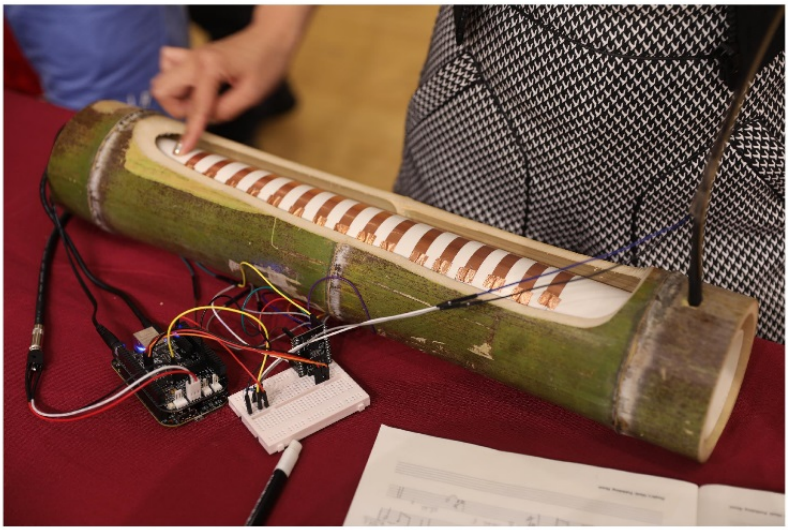


Figure 3: Digiqin

Figure 1: Dance professional wearing Rokoko Smartsuit Pro and Rokoko Smart Gloves.

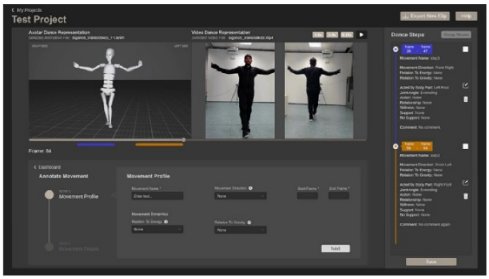


Figure 2: Illustrates how step annotations are created and displayed.

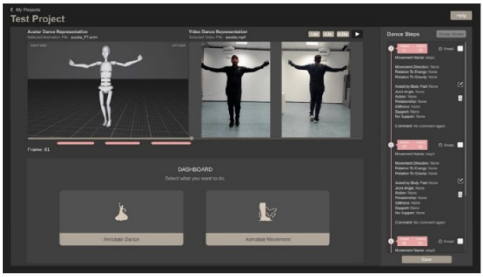
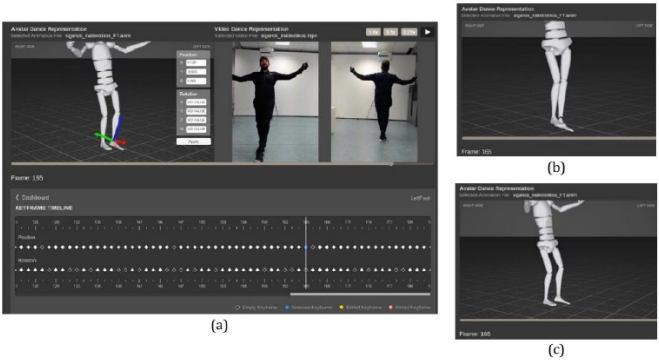


Figure 3: Illustrates that grouped step annotations share the same color and are tagged with the same "Group<number>" tag.



(a) (b) (c)

Figure 4: (a) Adjusting the left foot to the correct position, using gizmos, (b) Before the fine-tuning. A noticeable discrepancy observed in the position of the left foot, (c) After fine-tuning adjustment.

Table 1. Traditional dances in the selected countries.

Country	Dance
Austria	Krebspolka [7]
Belgium	Walloon [8]
China	Lion Dance [9]
	Agogo [10]
	Dai, Uygur [11]
Cyprus	Zeimpekiko [12]
Czech Republic	Pašovská Sedlcká [13]
Greece	Laisios or Lagisios dance at a Greek Thracian wedding, Gikna [2], Syrtos [14–23], Syrtos Makedonikos [17,21–23] Syrtos Kalamatianos [14,15,17,19–22], Trehatos [14,15,19–21] Enteka [19–22] Tsamiko [24–26] Zeibekiko [27] Antikristos [27]
Hungary	Kalocsai mars [28]

Table 1. *Cont.*

Country	Dance
India	Bharatanatyam [29] Kathak [29] Kuchipudi [29] Odissi [29] Kathakali [29] Sattriya [29] Manipuri [29] Mohiniyattam [29]
Indonesia	Bedhaya Ketawang [30]
Japan	Musume-doujouji [31]
Korea	Didim [32]
Macedonia	Trexatos [22]
Portugal	Joao Fiadeiro's choreographic [33]
Slovakia	Horehronie, Abov, Podpoľanie and Horné, Považie [34]
Thailand	[35–38]
United Arab Emirates	Ayala [39]

Table 3. Methodology of 3D digitisation of dance choreography.

Name of the Stage	Sub-Stages	Results
1. Planning	1.1. Obtaining knowledge about the dance 1.2. Selecting a music track 1.3. Technical planning MC session scheduling	Detailed plan of activities
2. MC session preparation	2.1. Acquiring dancers 2.2. Preparation of props 2.3. Booking a laboratory	Everything is ready for implementation of the MC session
3. MC session implementation	3.1. Participant preparation 3.2. Implementation of the session—data recording 3.3. Preliminary checking of the quality of the obtained data 3.4. Implementation of corrective recordings (if any) 3.5. Video recording of the dance	Raw data
4. Data post-processing	4.1. Post-processing and data cleaning 4.2. Creating a 3D choreography model 4.3. Indicating dance sequences 4.4. Analysis of the dancer's movements	3D model of the dance Sequence of elementary movements

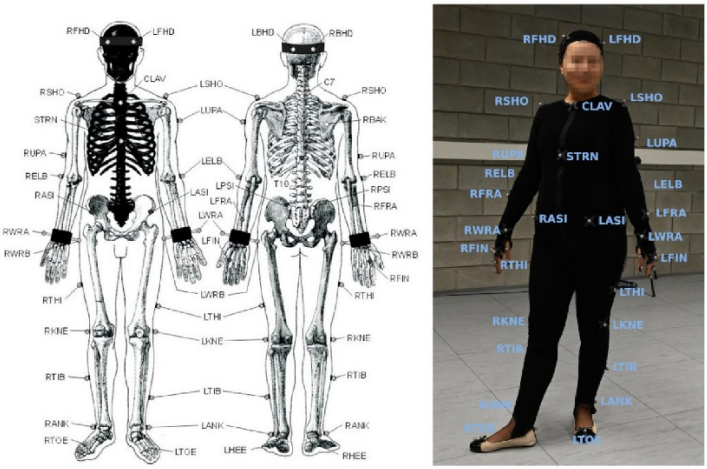


Figure 1. Full body Plug-in Gait marker placement [42] (on the **left**) and its real implementation (on the **right**).

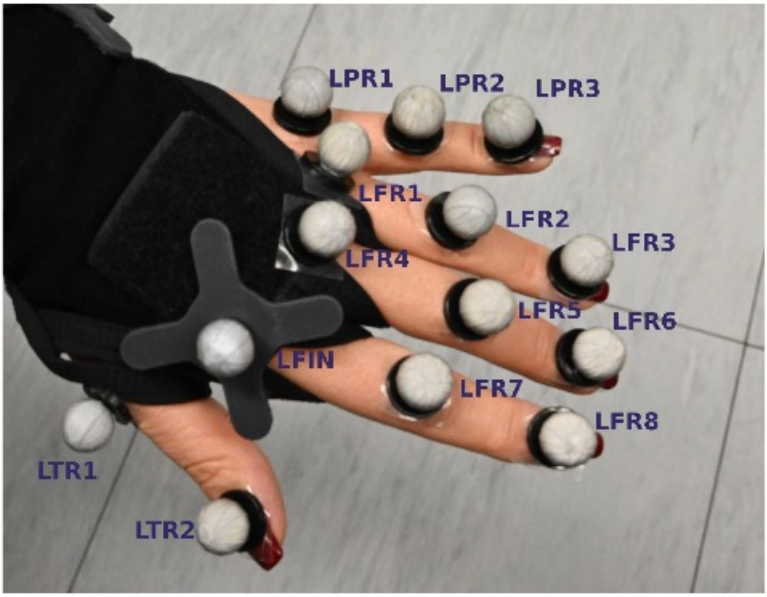


Figure 2. Left hand markers placement.

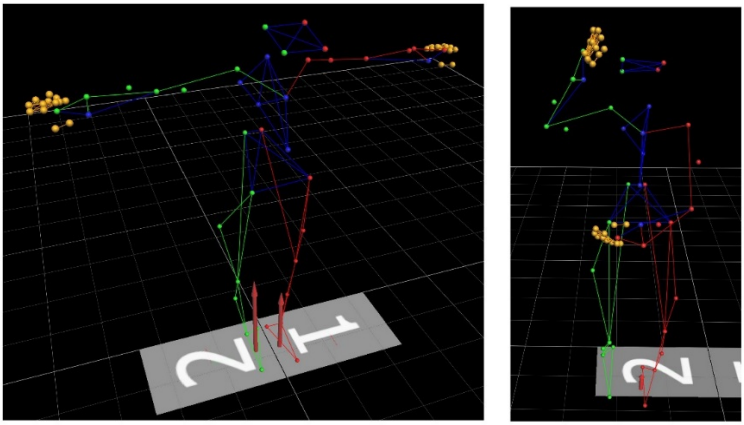


Figure 3. Model of the dancer after post-processing T-pose (on the **left**) and while performing the dance (on the **right**).

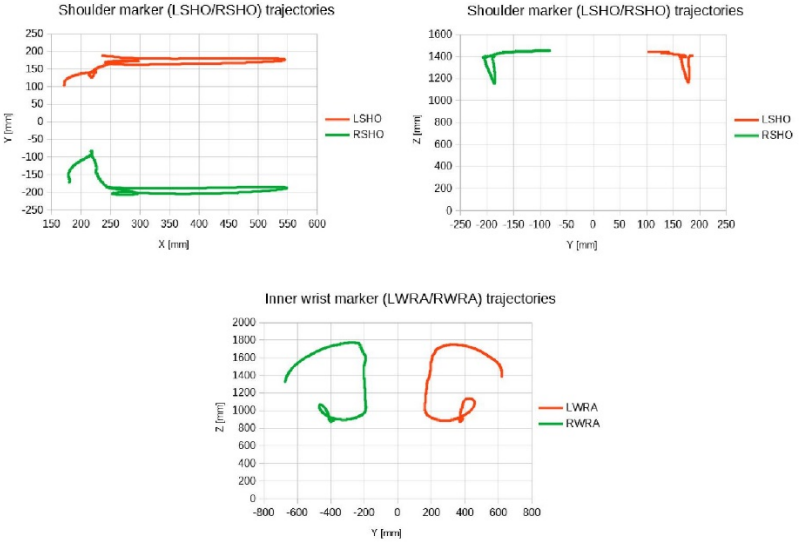


Figure 4. Trajectories for upper body parts for the first sequence.

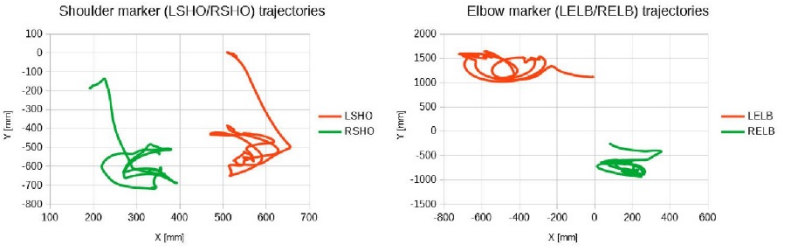


Figure 6. Trajectories for upper body parts for the second sequence.

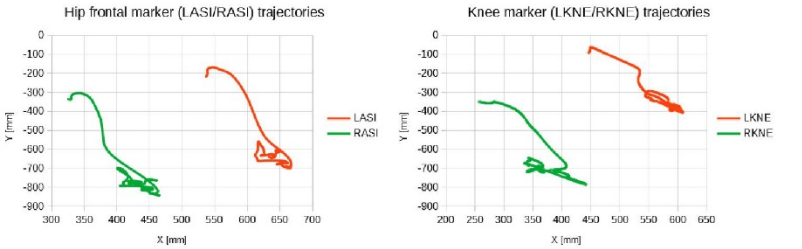


Figure 7. Trajectories for lower body parts for the second sequence.

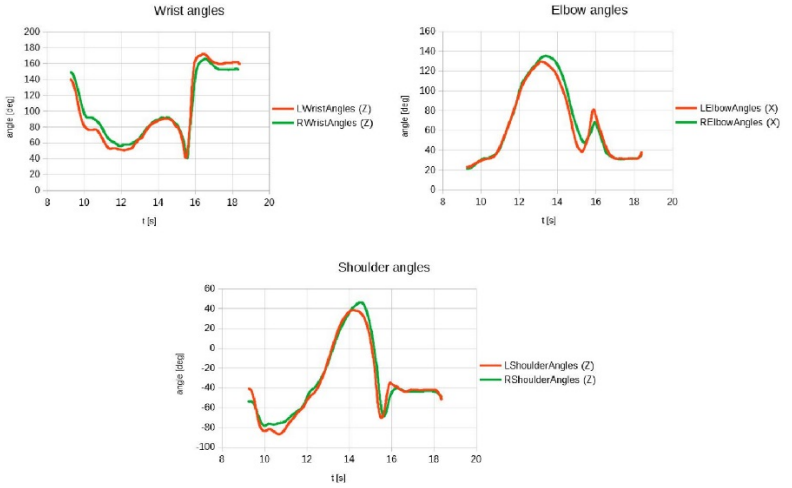


Figure 9. Angles for upper body parts for the first sequence.

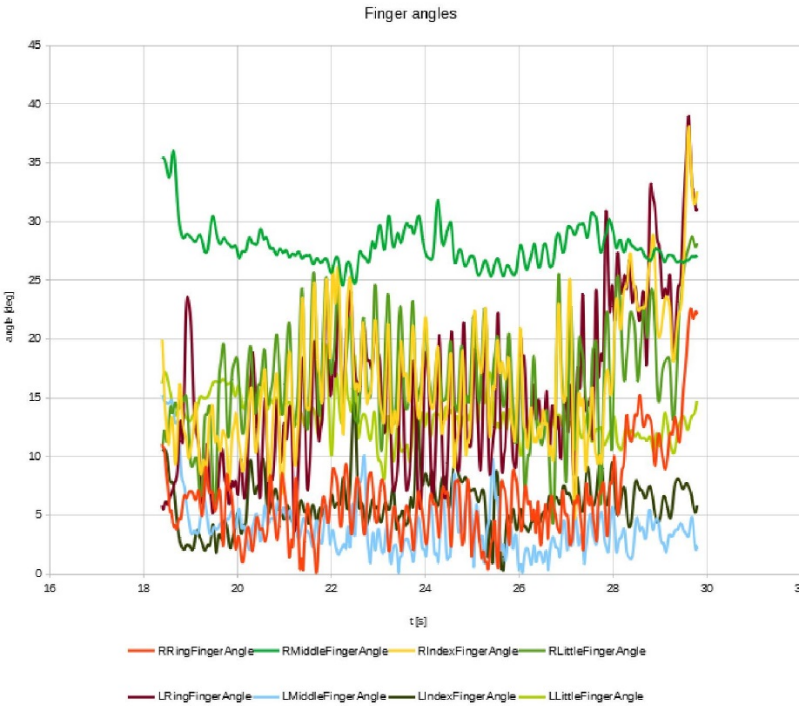


Figure 11. Angles for hands movement for the second sequence.

Table 2. Technologies used to capture traditional dance data.

Data Collection Methods	Papers
3D visualization, 3D poses estimation from a video	[2]
Vicon motion capture system	[10,14–18,21,23,31]
OptiTrack motion capture system	[7,13,28,34]
Phasespace4 Impulse X2 motion capture system	[12,27]
Microsoft Kinect	[8,19–22,24–26,30,33]
Gyroscopes and accelerometers	[32]
Smartphones	[9]
Video camera	[11,29,33]
Labanotation system	[35–38]
IMU sensors	[39]

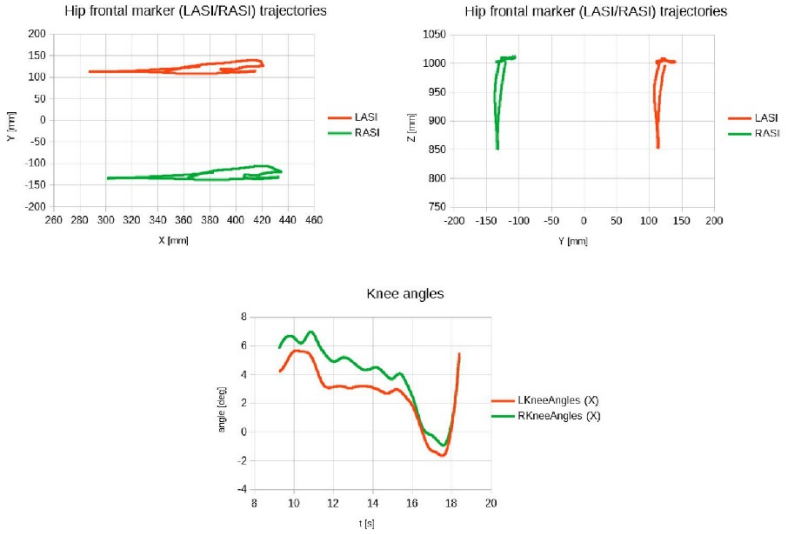


Figure 5. Trajectories for lower body parts for the first sequence.

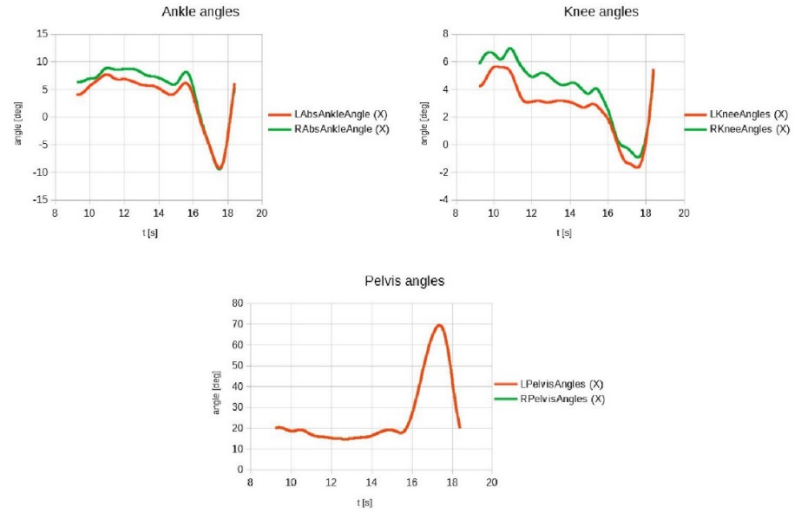


Figure 8. Angles for lower body parts for the first sequence.

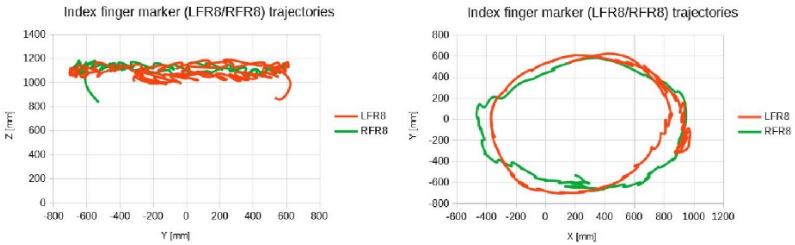


Figure 10. Trajectories for fingers for the second sequence.

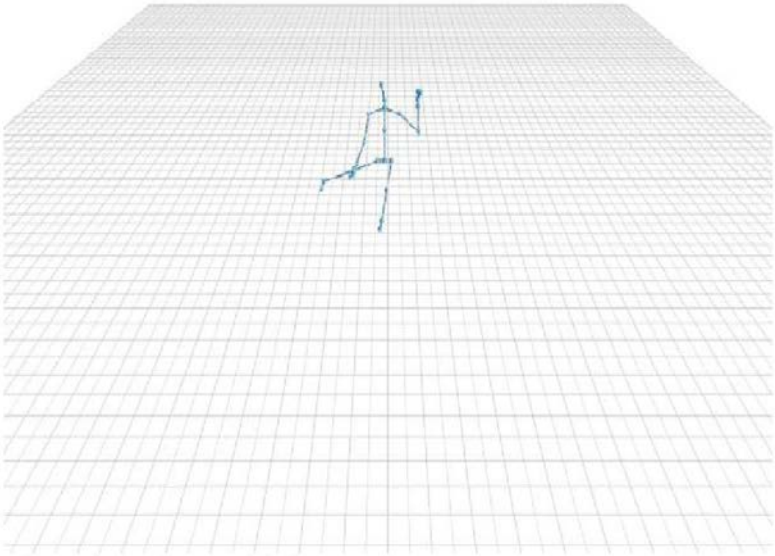


Figure 1. ITGD module's record screen

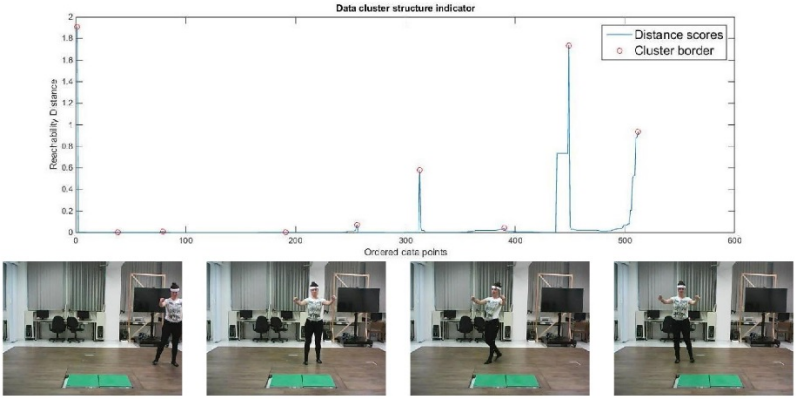


Figure 2. Identifying clusters within data, using as joint of reference the right foot. Positions and rotation data are compared among all dance frames. Peaks (upper image) are indicators for a new cluster; four cluster border corresponding frames are, also, illustrated (lower image).

Figure 3. The dance capturing process. Image on the left demonstrates the sensor position. On the right, we can see the dancer while acting.

Table 2. Gender and Age and Dance Experience of Participants

(a) Gender

		Ratings	Part
Gender	Female	3879	58.9%
	Male	2694	40.9%
	Other	16	0.2%
	Total	6589	

(b) Age and dance experience

		Dance Experience (years)				
		1-3	4-10	>10	n.a.	total
Age (years)	<20	0.0%	0.0%	0.0%	0.1%	0.1%
	20-30	1.7%	2.7%	0.5%	0.0%	4.9%
	30-40	2.6%	7.5%	4.5%	0.0%	14.5%
	40-50	5.4%	5.3%	8.7%	0.6%	20.1%
	50-60	4.4%	13.1%	17.4%	1.2%	36.2%
	>60	1.5%	7.3%	15.4%	0.0%	24.2%
	total	15.7%	35.9%	46.5%	1.9%	100.0%

Table 3. Regional Preference of Participants

(a) All countries

Ratings per country		
Country	abs.	%
C0 Germany	2053	31.68%
C13 Austria	955	14.74%
C3 USA	521	8.04%
C6 UK	410	6.33%
C14 Italy	311	4.80%
C11 Switzerland	306	4.72%
C24 Europe	283	4.37%
C21 Turkey	261	4.03%
C10 Slovenia	217	3.35%
C12 Belgium	179	2.76%
C1 France	160	2.47%
C2 Malaysia	141	2.18%
Other (13 Countries)	683	10.54%

(b) European countries

Ratings (European countries)		
Country	abs.	%
C0 Germany	2053	31.7%
C13 Austria	955	14.7%
C6 UK	410	6.3%
C14 Italy	311	4.8%
C11 Switzerland	306	4.7%
C24 Europe	283	4.4%
C21 Turkey	261	4.0%
C10 Slovenia	217	3.3%
C12 Belgium	179	2.8%
C1 France	160	2.5%

(c) Non-European Countries

Ratings (non-European countries)		
Country	abs.	%
C3 USA	521	8.0%
C2 Malaysia	141	2.2%
C8 Argentina	89	1.4%
C9 South Africa	80	1.2%
C7 Thailand	78	1.2%
C16 Mali	1	0.0%

Table 4. Regional Bias Compared to Network Analysis Study Results

(a) Country coverage

Country coverage: Ratings vs. Performances			
	% Ratings	%Perf.	Difference
C0 Germany	31.7%	9.1%	−22.6%
C13 Austria	14.7%	4.2%	−10.6%
C6 UK	6.3%	4.7%	−1.6%
C14 Italy	4.8%	20.3%	15.5%
C11 Switzerland	4.7%	6.0%	1.3%
C21 Turkey	4.0%	3.3%	−0.7%
C10 Slovenia	3.3%	1.1%	−2.2%
C12 Belgium	2.8%	4.4%	1.6%
C1 France	2.5%	7.1%	4.6%
C18 Poland	1.5%	3.3%	1.8%
C23 Sweden	1.4%	1.82%	0.4%
C4 Denmark	1.2%	1.77%	0.6%
C20 Greece	0.6%	2.68%	2.1%

(b) Country rank

Country rank: Ratings vs. Performances		
Ratings	Rank Diff.	Performances
C0 Germany	1	Italy
C13 Austria	6	Germany
C6 UK	3	Spain
C14 Italy	3	France
C11 Switzerland	-	Switzerland
C21 Turkey	9	England

Table 5. Value Distribution of Rating Questions

		Value distribution in Lickert scale					
		R0	R1	R2	R3	Mean	
Question	Q1 'I know the piece'	33.0%	14.0%	12.0%	33.0%	1.49	±1.3
	Q2 'I like the piece'	15.0%	25.0%	25.0%	28.0%	1.71	±1.1
	Q3 'I enjoy dancing it'	21.0%	22.0%	21.0%	29.0%	1.63	±1.1
	Q4 'Piece is challenging'	35.0%	25.0%	16.0%	14.0%	1.10	±1.1
	Q5 'Piece is danceable'	13.0%	17.0%	23.0%	40.0%	1.96	±1.1

Table 2: Demographics of Music Therapist in This Study

ID	Working Years	Country	Certification	Applied Theories	Clients	Knowledge of AI
I1	5~10	China	MTA; Certified in China	Humanistic psychology	Humanistic psychology Currently teaching in college	Not know at all
I2	3~5	Malaysia	MTA	Humanistic psychology; Psychodynamic psychology	Children with special needs; Rehabilitated patients; Elderly with emotion issues	Not know at all
I3	3~5	China	Certified in China	Humanistic psychology	Elderly with emotion issues	Have heard it but never used it
I4	5~10	China	Certified in China	CBT; DBT	Adults with obsessive-compulsive disorder; Depression; Persecutory delusion; sleeping disorder; Eating disorder	Not know at all
I5	5~10	China/ Canada	MTA; MT-BC	Humanistic psychology; Psychodynamic psychology	People with depression and anxiety; Children with special needs; elderlies; People with disabilities	Not know at all
I6	5~10	China / United State	MTA; MT-BC	Humanistic psychology; Psychodynamic psychology	Children with special needs; Alzheimer's; Adults with depression; Schizophrenia	Have heard it but never used it
P1	5~10	China	MT-BC	Humanistic psychology; CBT	Adults with anxiety and depression symptoms; Teenagers and adults with diagnosed depression and anxiety	Not know at all
P2	5~10	China	Certified in China	Humanistic psychology	General psychological issues, including depression, and anxiety	Not know at all
P3	5~10	China / Canada	MTA; MT-BC	Humanistic psychology; Psychodynamic psychology	People with depression and anxiety; Children with special needs; elderlies; People with disabilities	Have heard it but never used it
P4	3~5	China	Certified in China	Psychodynamic psychology	Maternal depression; Teenagers with depression, schizophrenia, personality disorder	Have heard it but never used it
P5	5~10	Singapore	Certified in China	Humanistic psychology	Adults with depression, anxiety, bipolar disorder, schizophrenia	Have heard it but never used it
P6	5~10	United States / China	MTA; MT-BC	Humanistic psychology; Psychodynamic psychology	Adults with cancer, schizophrenia, emotional disorder, depression, anxiety, and stress; special care baby unit	Have heard it but never used it
P7	10+	China	Certified in China	Humanistic psychology; CBT	Adult with emotional issues; oncology clients; autism; Alzheimer's; prison inmates; newborns	Have heard it but never used it
P8	3~5	United States	MT-BC	Humanistic psychology; Psychodynamic psychology	Adults with depression, anxiety, phobia, psychological disorders, schizophrenia, bipolar disorder, and split personality	Have heard it but never used it

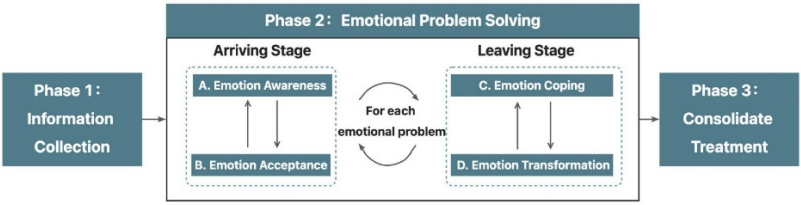


Figure 1: Typical Workflow of Music Therapy

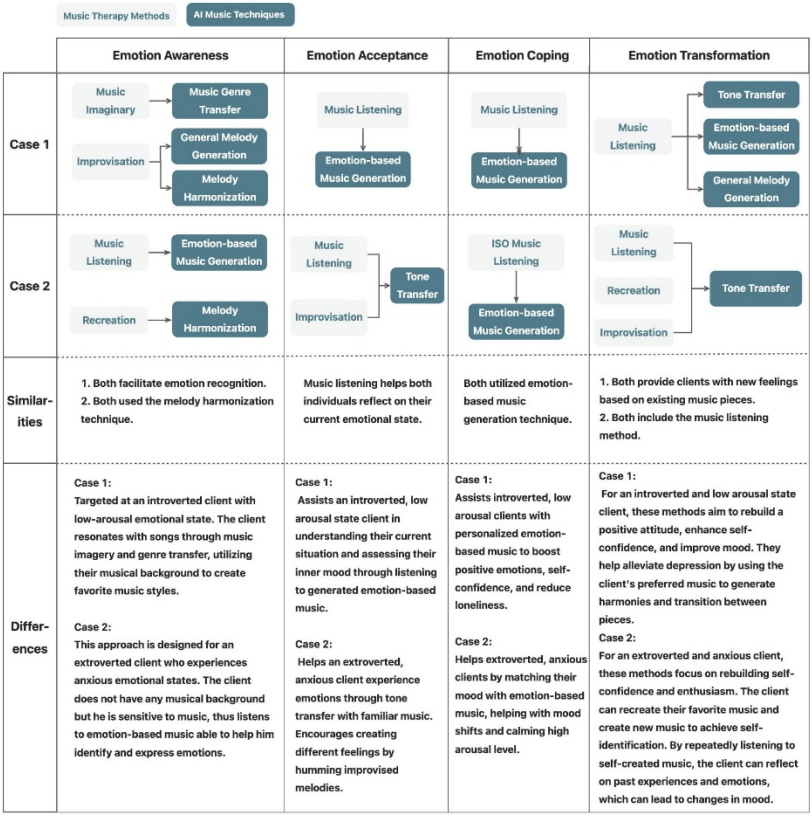


Figure 2: Different stages of emotional problem-solving in music therapy in two cases: matching of music therapy methods and AI algorithms

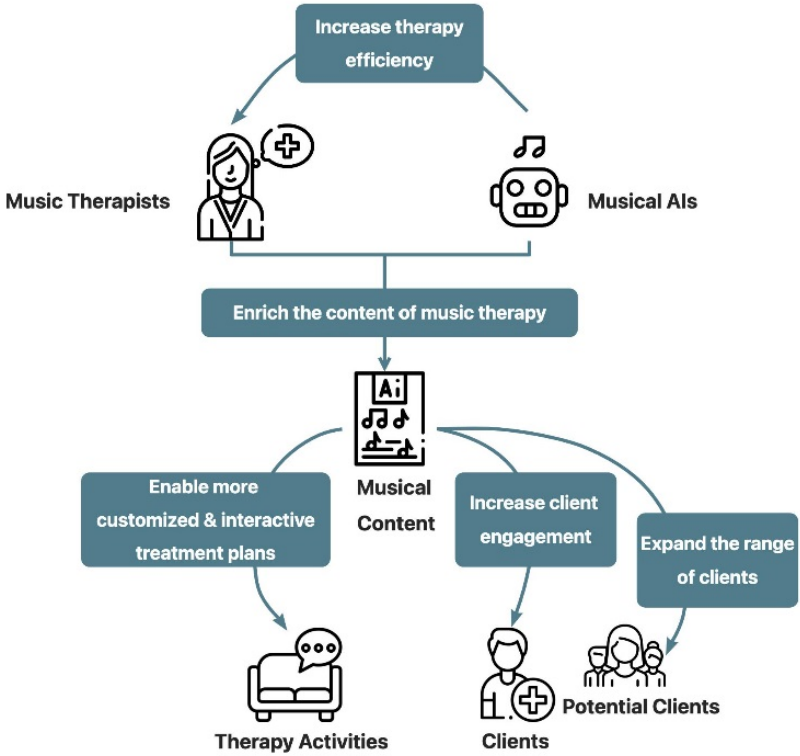


Figure 3: Potential benefits of musical AIs on music therapy

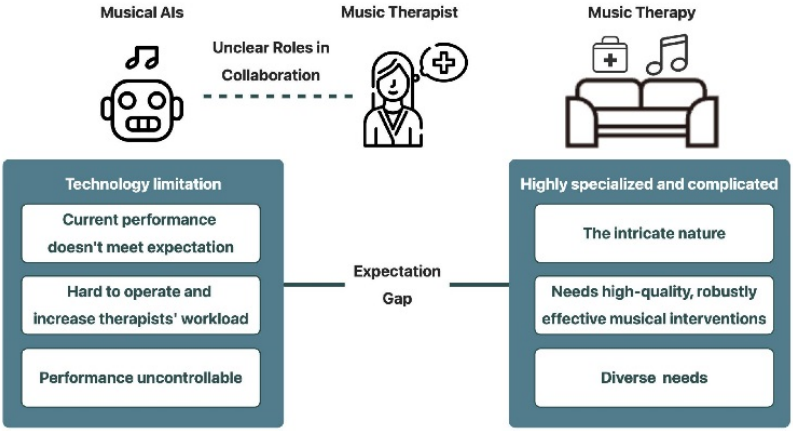


Figure 4: Concerns about musical AIs in music therapy

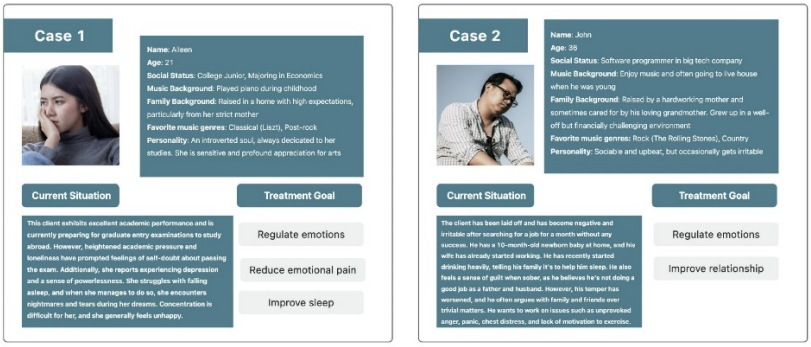


Figure 5: Persona Design for Case 1 and Case 2

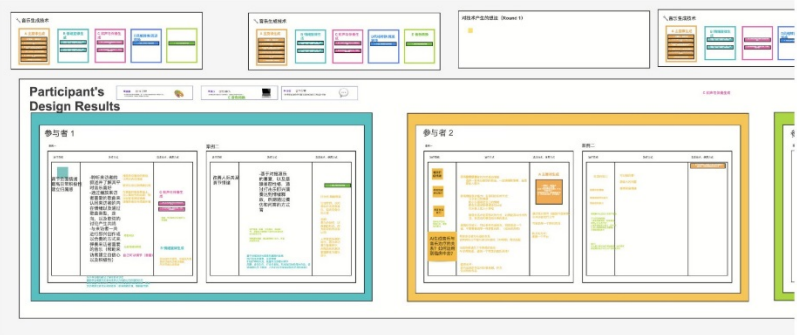


Figure 6: Screenshot on Design Results

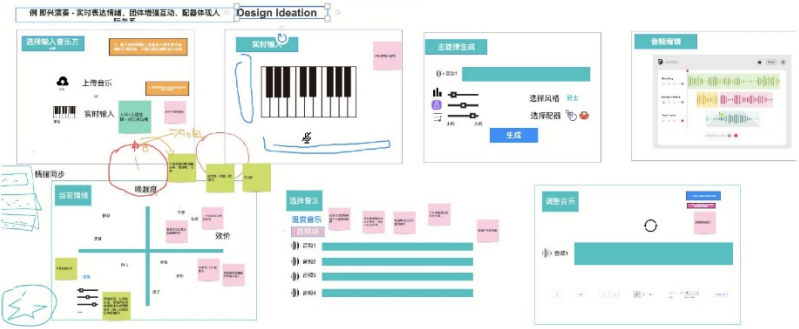


Figure 7: Screenshot on Design Ideations

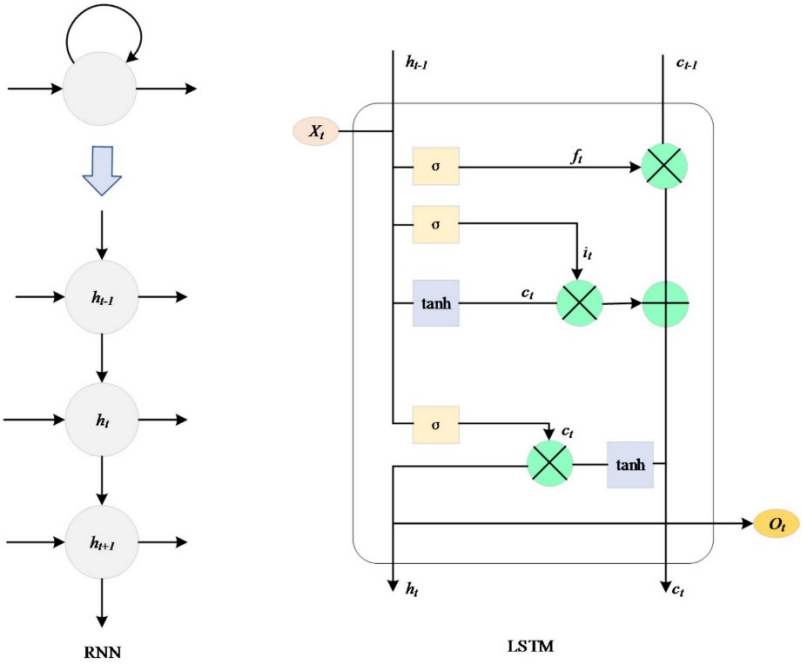


Fig. 1. Schematic diagram of RNNs and LSTM structures.

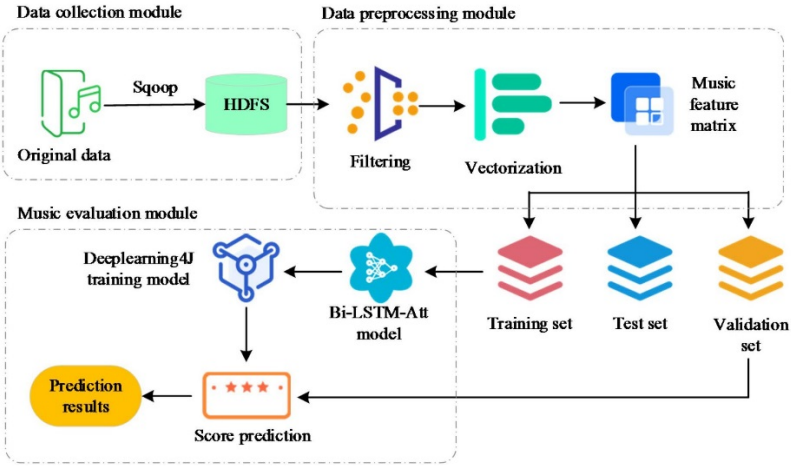


Fig. 2. Framework of the music evaluation model.

Hardware/parameter name	Configuration/value
Operating system	CentOS 7
Processor	8 cores
Memory	8GB
Storage	50GB
Integrated development environment	DVD-1908.iso
Deep learning framework	Deeplearning4J
Learning rate	0.001
Mini-batch size	10
Number of iterations	1000
Optimizer	Adam
Input layer node count	88
First hidden layer node count	352
Second hidden layer node count	176
Third hidden layer node count	88
Output layer node count	5

Table 1. Experimental parameter settings.

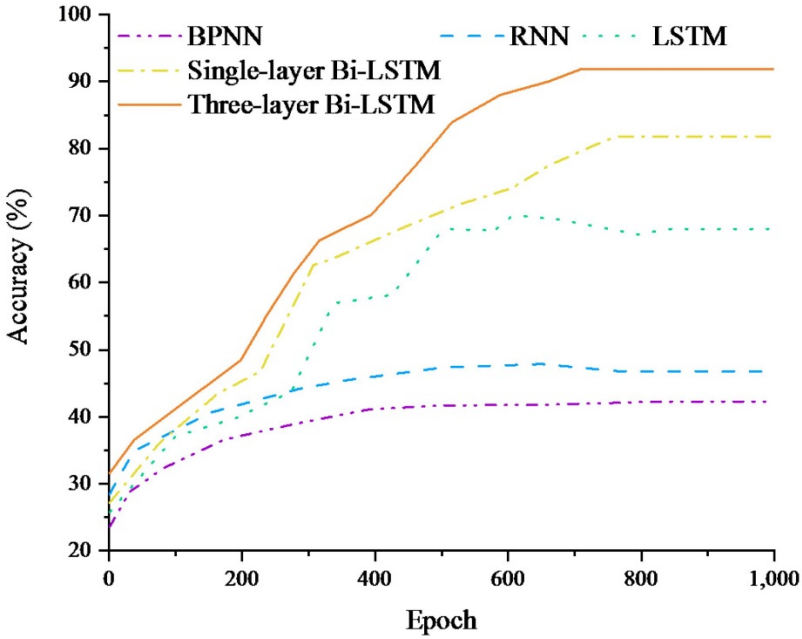


Fig. 3. Accuracy comparison of five models.

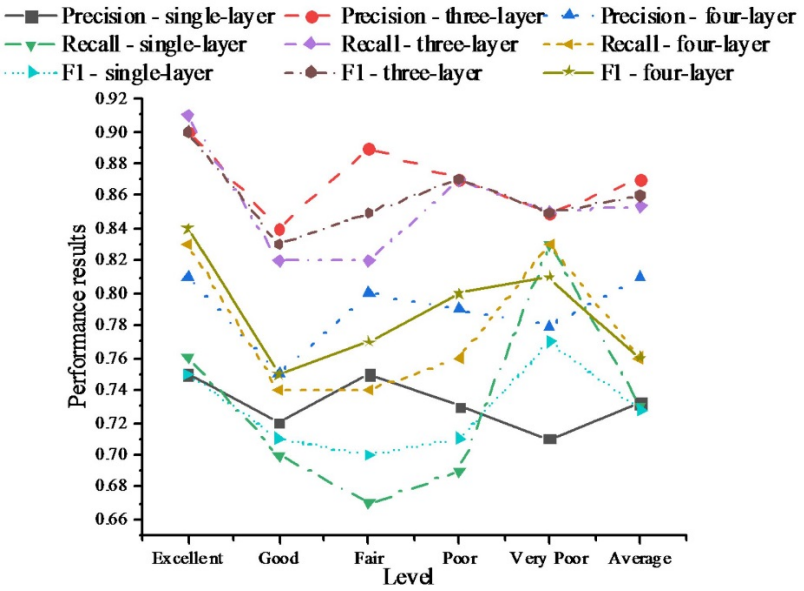


Fig. 4. Performance comparison of three models under different evaluation results.

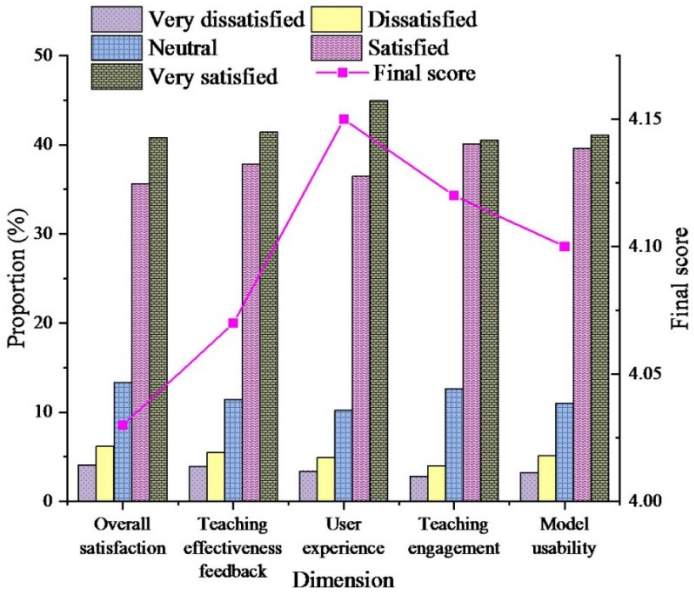


Fig. 7. Statistical data of questionnaire results.

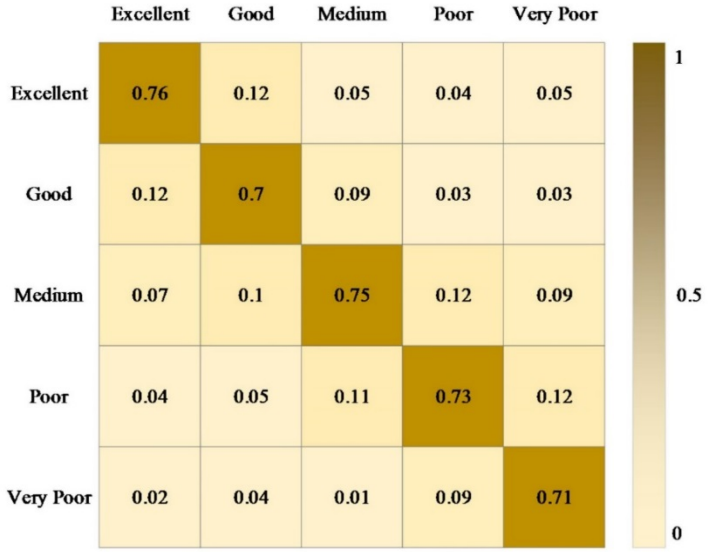


Fig. 5. Confusion matrix for single-layer hidden Bi-LSTM model.

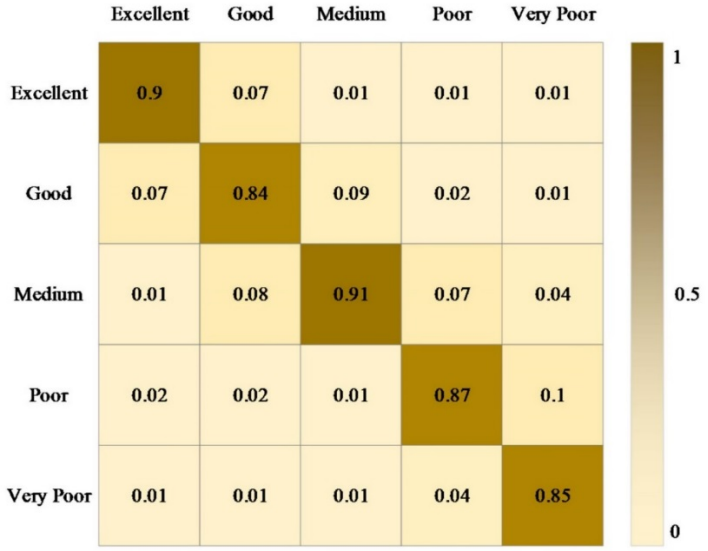


Fig. 6. Confusion matrix for three-layer hidden Bi-LSTM model.

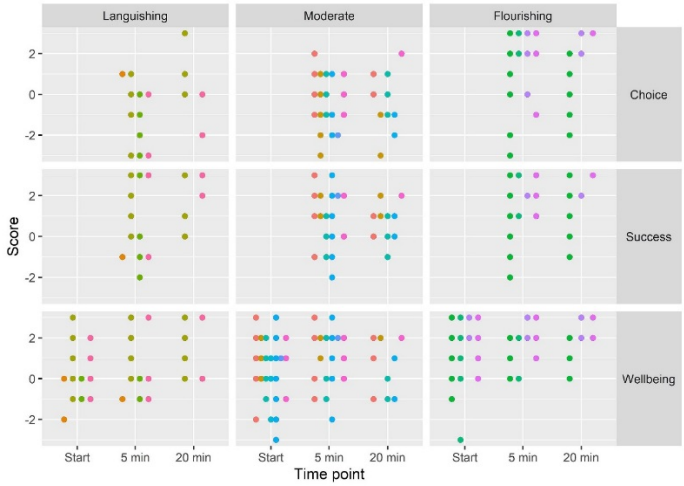


FIGURE 1
Raw scores grouped by outcome, time point and baseline wellbeing category. Scores at the same time point have been horizontally jittered so that they do not overlap, and different colours have been used to distinguish observations from different participants.

Table 1. Musical features of the music stimuli.

MUSICAL FEATURE		MUSIC CONDITION			STATISTICS				
Type	Name	Work Flow (WF)	Deep Focus (DF)	Pop Hits (PH)	ANOVAs (DF = 2,33)		Tukey's HSDs (α = 0.05)		
					F	p	WF vs. DF	WF vs. PH	DF vs. PH
Rhythm	Tempo	119.250	70.250	111.438	19.365	2.73e-6	**		***
	Pulse clarity	0.545	0.219	0.483	9.073	7.00e-4	*		*
	Fluctuation entropy	0.963	0.985	0.979	41.480	9.87e-10	***	***	*
	Fluctuation maximum	4077.285	1010.193	2573.015	15.899	1.46e-5	***	.	**
Tonality	Key (% major)	75.000	100.000	56.250					
	Key clarity	0.689	0.866	0.693	8.051	1.40e-3	.		*
	Mode	0.117	0.19	0.045	4.598	1.73e-2			*
	Chromatic complexity	4.750	5.625	8.688	8.672	9.00e-4		*	*
	HCDF mean	0.195	0.174	0.257	53.87	4.04e-11		***	***
Spectrum	Flux	33.282	15.362	33.682	90.874	3.79e-14	***		***
	Entropy	0.778	0.763	0.838	111.516	2.08e-15		***	***
	Centroid	2273.033	1015.235	3431.681	175.817	2.52e-18	***	***	***
	Spread	3964.343	1712.401	4029.667	61.767	6.99e-12	***		***
	Flatness	0.130	0.038	0.247	73.788	6.62e-13	*	**	***
	Roll-off	5613.889	1730.855	7783.217	139.447	8.02e-17	***	*	***
	Brightness	0.278	0.177	0.525	234.807	3.06e-20	***	*	***
	Zero crossing rate	492.950	418.910	1199.087	97.762	1.36e-14		***	***
Dynamics	Attack time	0.115	0.142	0.104	3.556	3.99e-2			*
	Attack slope	3.174	1.908	4.018	19.756	2.28e-6	*		***
	Decay time	0.179	0.253	0.133	2.885	7.00e-2			
	Decay slope	-1.976	-1.499	-3.140	22.865	5.88e-7		*	***
	Event density	1.931	1.085	2.348	14.186	3.58e-5	.		*
	RMS amplitude	0.058	0.047	0.054	8.807	8.61e-4	**		*

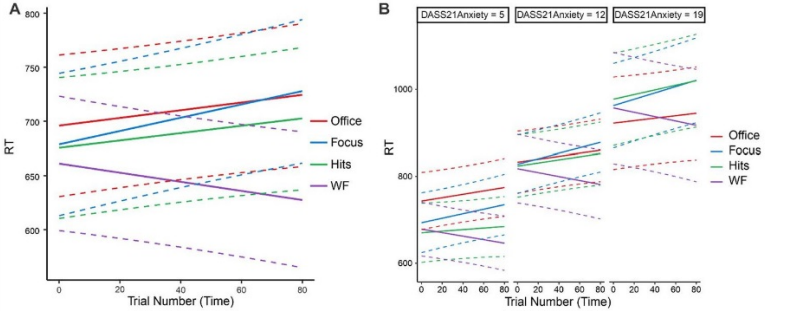


Fig 5. Effect of audio condition on flanker task RT over time. A. RT slopes with increasing trial number (time) for each audio condition, as predicted by the best RT model (see Table 2). Participants in the work flow (WF) condition performed significantly faster over time, as compared to those in the deep focus (Focus), pop hits (Hits), and office noise (Office) conditions (see main text for stats). **B.** Participants in the work flow condition performed faster over time regardless of basal anxiety status, as indicated by the similarity of RT slopes with increasing trial number for DASS-21 anxiety scores corresponding to "normal" (score = 5), "moderate" (score = 12), and "severe" (score = 19) levels. That is, the interaction between audio condition, trial number, and basal anxiety status was non-significant (see main text for stats). Dashed lines represent 95% confidence intervals.

Fig. 1 Left - Participant in the soundproofed studio engaged in the VR application, and Right - Image of the "forest" environment with the fog that provides an extra colour feature

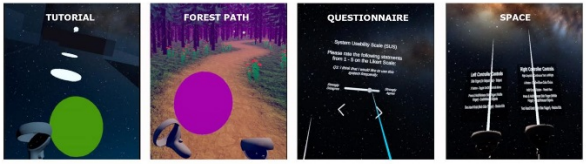


Fig. 2 The four environments experienced in virtual reality: Tutorial scene (far left), Forest Path (middle left), Questionnaire scene (middle right), and Space scene (far right)

Table 2 Independent samples t-test results for flow and well-being by gender

Variable	Gender	Mean	Std. Deviation	Equal Variances Assumed	t	df	p	95% CI
Flow Mean	Male	3.564	0.745	Yes	-2.66	410	0.008	−0.37, −0.06
	Female	3.777	0.788					
Well-Being Mean	Male	3.208	0.803	Yes	-6.99	410	<0.001	−0.73, −0.41
	Female	3.780	0.786					

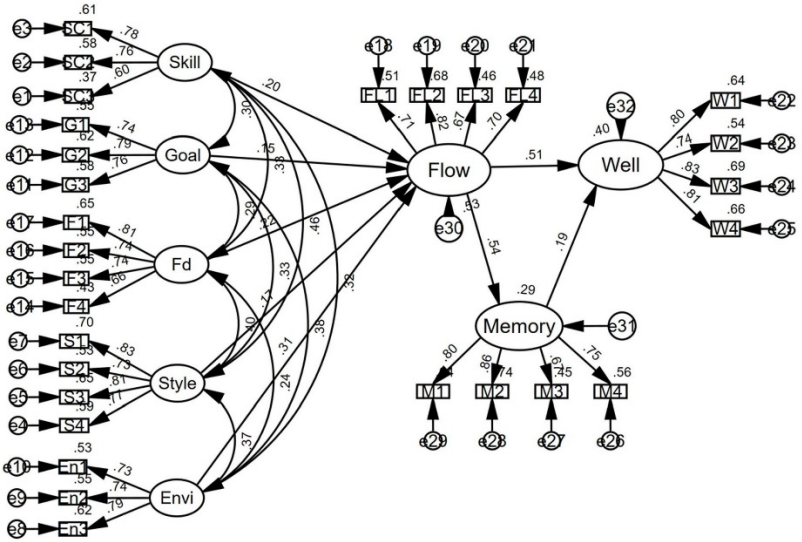


Fig. 2 Final Structural Equation Model with Standardized Path Coefficients. ***Note***: The 'e' variables (e.g., e1 to e29) in small circles represent the residual error terms for each corresponding observed variable (the squares); Skill = Skill–challenge balance; Fd = Immediate Feedback; style = Song style; Envi = Choral Environment; Well = Well-Being; Memory = perceived choral memory performance

Fig. 1. Changes in EEG power during the experiment. First three rows: time dependence of the power change in EEG frequency bands relative to eyes-closed (left column) and eyes-open (right column) baseline under the experimental conditions. Bottom row: Average power change measured in the frequency bands under the experimental conditions.

	Statistic (t)	df	$CI_{95\%, low}$	$CI_{95\%, high}$	Estimate (mean)	*p*-value
Boredom–flow, AF7, alpha	− 2.7408	15	− 18.3633	− 2.2968	− 10.33	0.0152
Boredom–flow, AF7, beta	3.5495	15	21.7564	5.4309	13.5936	0.0029
Boredom–flow, Fp1, beta	− 2.3785	15	− 16.7516	− 0.9175	− 8.8346	0.0311
Boredom–flow, Fp2, beta	− 2.2918	14	− 18.8996	− 0.6261	− 9.7629	0.0379
Flow–frustration, Fp1, theta	2.2049	16	0.3144	16.0014	8.1579	0.0424
Flow–frustration, Fp1, alpha	2.1717	16	0.1904	15.7873	7.9889	0.0453
Flow–frustration, AF8, delta	2.5743	15	1.7468	18.5614	10.1541	0.0212
Flow–frustration, AF8, theta	2.5912	15	2.2231	22.8354	12.5293	0.0205
Flow–frustration, AF8, alpha	2.4969	15	1.7113	21.6708	11.6911	0.0247
Boredom–frustration, AF7, delta	2.4723	17	1.265	15.9913	8.6281	0.0243

Table 2. Significant differences in closed-eye baseline-corrected EEG between conditions, for each channel and frequency band.

	Statistic (t)	df	$CI_{95\%, low}$	$CI_{95\%, high}$	Estimate (mean)	*p*-value
Flow–frustration, Fp2, delta	2.7498	15	2.7165	21.4426	12.0795	0.0149
Flow–frustration, AF8, delta	3.342	15	5.318	24.0447	14.6814	0.0045
Flow–frustration, AF8, theta	2.4629	15	1.8609	25.7951	13.828	0.0264
Flow–frustration, AF8, alpha	2.4402	15	1.699	25.159	13.429	0.0276
Boredom–frustration, AF7, delta	2.3191	16	0.8091	18.0281	9.4186	0.0339
Boredom–frustration, AF8, delta	3.3052	12	5.1254	24.9333	15.0393	0.0063
Boredom–frustration, AF8, theta	2.9022	12	4.2432	29.8019	17.0225	0.0133
Boredom–frustration, AF8, alpha	2.5397	12	1.9797	25.883	13.9313	0.026

Table 3. Significant differences in open-eye baseline-corrected EEG between conditions, for each channel and frequency band.

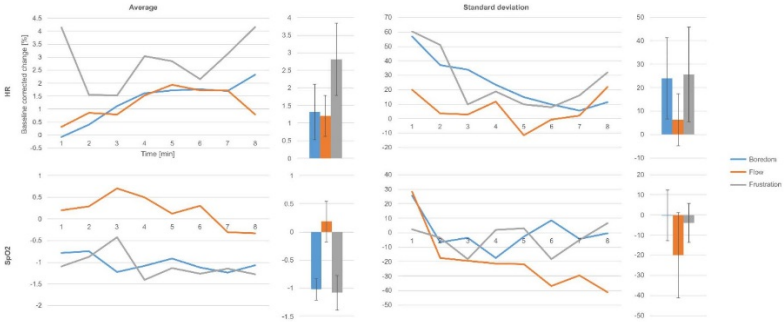


Fig. 2. Time dependence of PPG variables. Values are relative to eyes-closed baseline across the experimental situations. The top row refers to heart rate, the bottom to blood oxygen saturation; the left column shows averages, the right standard deviations. The average and standard deviations of the curves are shown on the right of each graph.

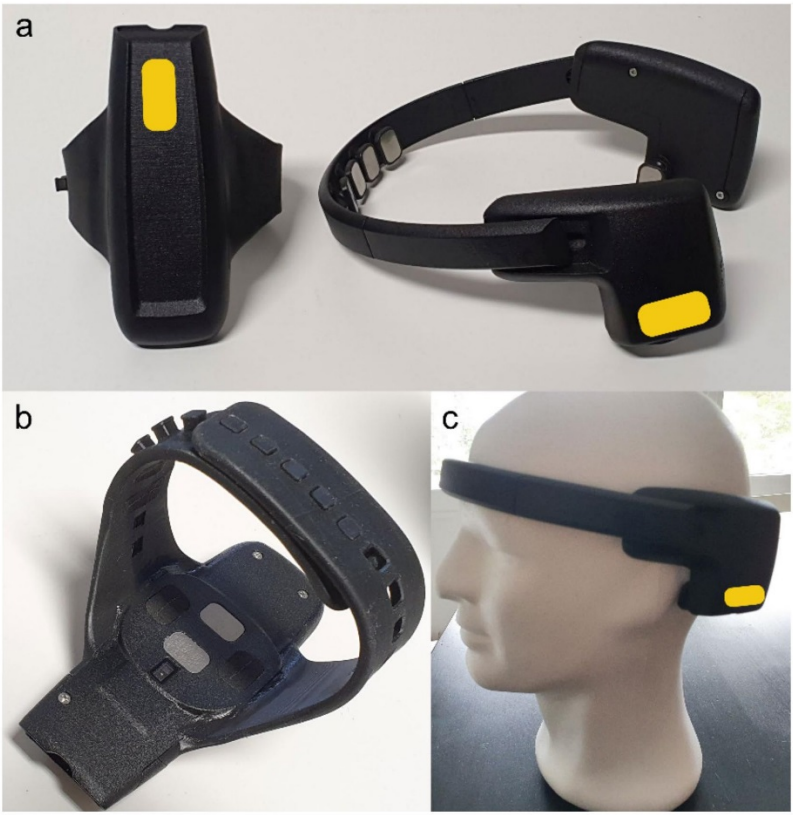


Fig. 5. Photographs of the devices used in this study. (**a**) Top view of the armband (left) and side view of the EEG headset (right). (**b**) Bottom view of the armband with the PPG sensor and the steel electrodes of the galvanic skin response measurement circuit visible; c) view of the intended use of the headset.

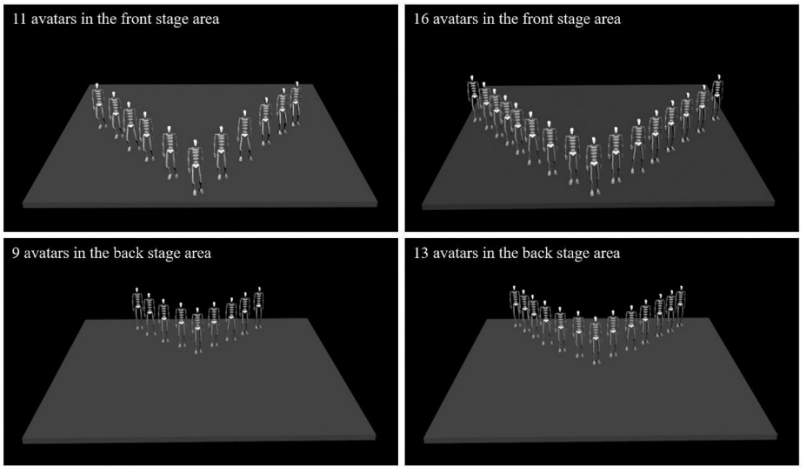


Figure 1. V- Stage setups with avatars located in the front and back stage area.

Figure 1. Digitalization process of motion capture with an expert Lanna dancer.

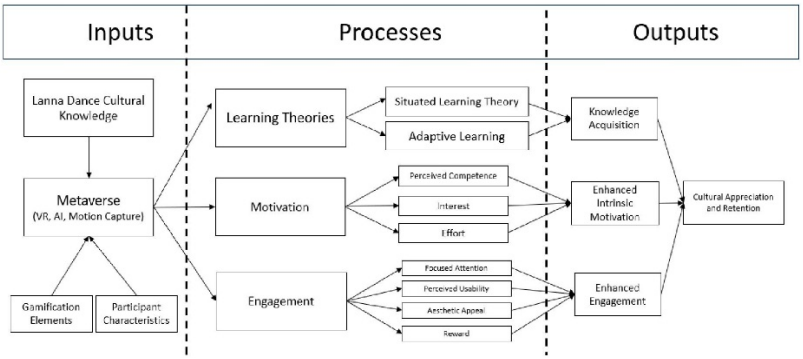


Figure 2. Conceptual framework of the Metaverse-based Lanna Dance learning system.

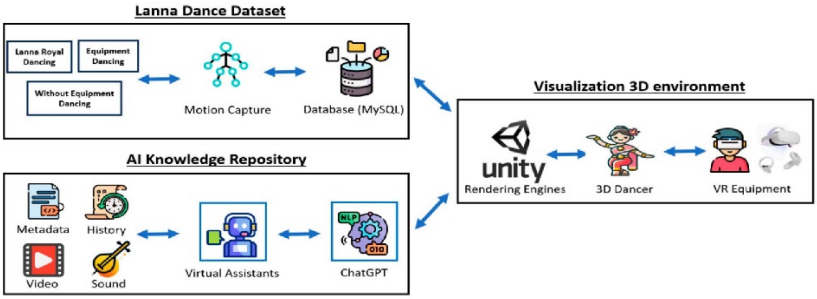


Figure 3. Overview of the platform architecture of the Metaverse-based Lanna Dance.

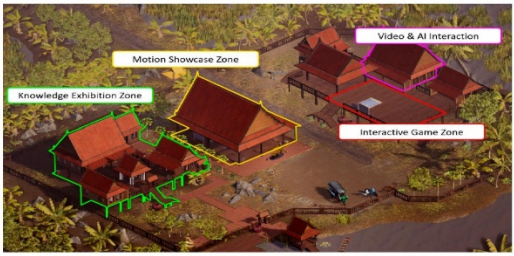


Figure 4. The layout of the Metaverse design environment.

Table 1. Overview of each zone in the Metaverse.

Zone Name	Objective	User Interaction
Motion Showcase Zone (Yellow Zone)	To present real-time 3D motion capture performances, allowing users to observe and analyze Lanna traditional dance movements.	Users can view motion-captured 3D animations of professional dancers and study their postures and techniques from different perspectives.
Knowledge Exhibition Zone (Green Zone)	To provide historical and cultural insights into Lanna Dance through interactive educational content.	Users can explore exhibits on the history of Lanna Dance, access digital archives, read historical texts, and interact with multimedia resources.
Video and AI Interaction Zone (Purple Zone)	To offer a curated video library and AI-driven learning assistance for Lanna Dance education.	Users can watch instructional videos and recorded performances, while AI assistants provide contextual explanations and real-time responses.
Interactive Game Zone (Red Zone)	To improve motivation and engagement in active dance learning through gamification and interactive challenges.	Users can participate in dance-based minigames, engage with gamification modules, and enjoy interactive learning experiences while acquiring knowledge about Lanna Dance.

Figure 5. Participants during the experiment with the Metaverse Lanna Dance platform.

Figure 6. Examples of the Motion Showcase Zone and Knowledge Exhibition Zone.

Group	N	Pre-Test (SD)	Post-Test (SD)	Difference Mean	Sig (2-Tailed)	Cohen's d
Metaverse-based learning system	30	2:20 (5.33)	12:80 (3:08)	−10.366	<0.001	−1.825

Table 5. Results of paired-sample t-test of pre-test and post-test knowledge acquisition.

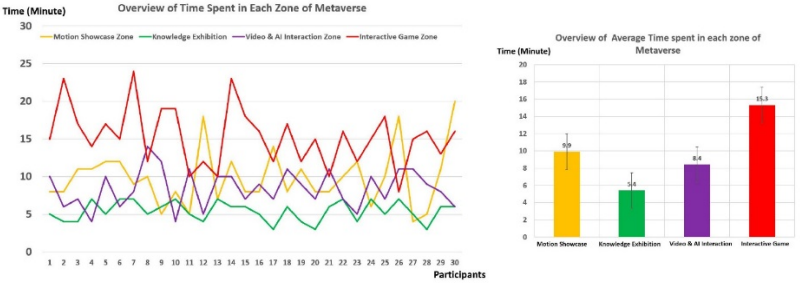


Figure 9. Zone-wise statistical data from the Metaverse platform.

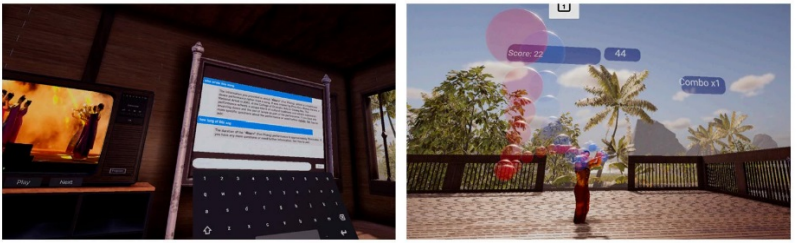


Figure 7. Examples of the Video and AI Interaction Zone and Interactive Game Zone.

Table 3. Results of paired-sample *t*-test between each dimension of IMI questionnaire.

IMI Questionnaires	N	Pre-Survey (SD)	Post-Survey (SD)	Mean Difference	Sig (2-Tailed)	Cohen's d
Perceived Competence	30	3.16	3.83	−0.666	<0.001	−0.291
Interest	30	3.20	3.76	−0.566	0.001	−0.234
Effort	30	3.26	3.66	−0.400	0.031	−0.037

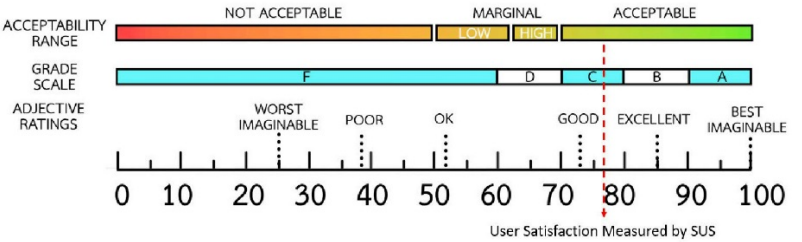


Figure 8. Results for Metaverse platform satisfaction, measured by SUS questionnaire.

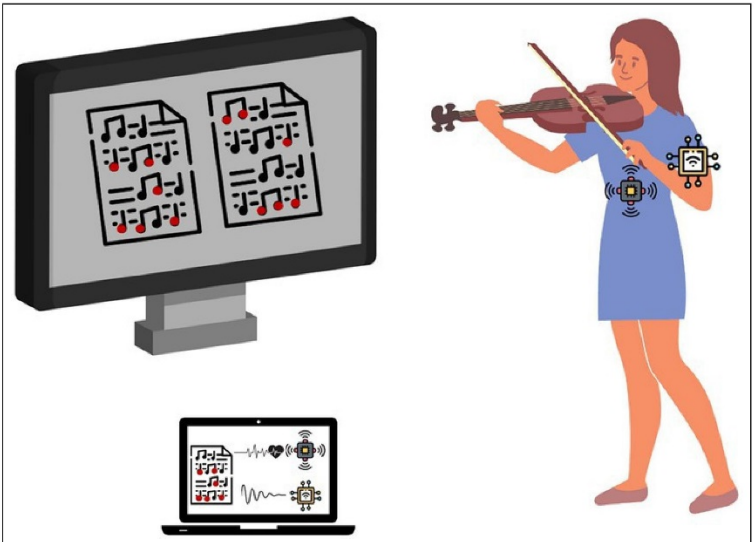


FIGURE 1
A conceptual representation of state-of-the-art technologies developed for music playing. The systems typically include multiple sensors that track students' physiological processes and provide real-time feedback on various movement and audio parameters related to their performance. They indicate when a player deviates from the target movement trajectory, adopts incorrect body posture, or deviates from the target pitch. They are usually designed to be used individually.

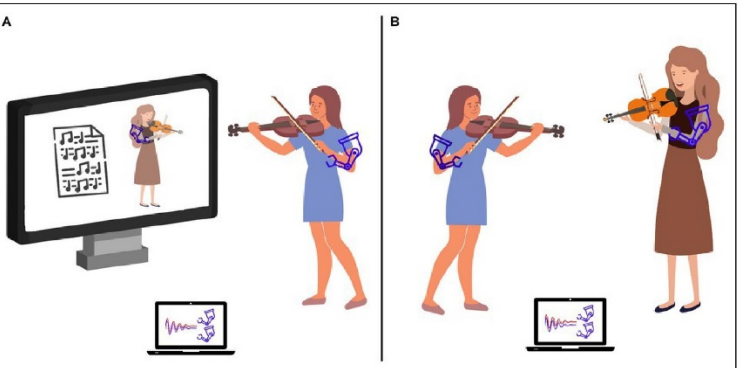


FIGURE 2
A conceptual representation of the real-time kinesthetic haptic feedback mediated by exoskeletons to enhance learning and performance. Besides providing haptic information to the users and guide their movement based on a targeted trajectory **(A)**, this technology has the capability to enable the exchange of forces between two exoskeleton-wearing users, allowing them to obtain haptic information on each other's movements in real-time thus enhancing sensorimotor interaction and facilitating entrainment effects between users without interfering with the general performance and flow of the lesson or rehearsal **(B)**.

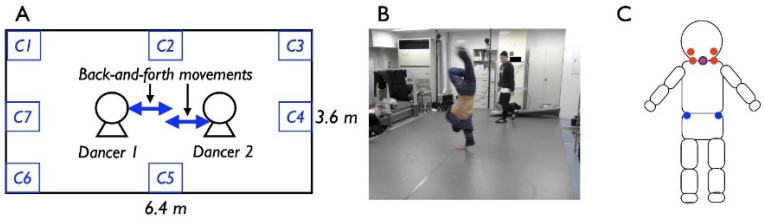


FIGURE 1
(A) Outline of the battle scene. Two dancers faced each other and showed their performances in turn. **(B)** Picture of the battle scene. One dancer showed his performance, and another dancer watched and responded to his performance. **(C)** Marker setting. The picture draws the back side of the participants. The red circle indicates the marker positions around the neck and blue circle indicates the marker positions around the trunks. In the analysis, we used the marker data around the neck, mainly the marker data of red circle with blue lines (for a few participants, this marker fell off during their performances, so other neck marker data was used). A portion of the figure has been adapted and modified from Shimizu and Okada (2021).

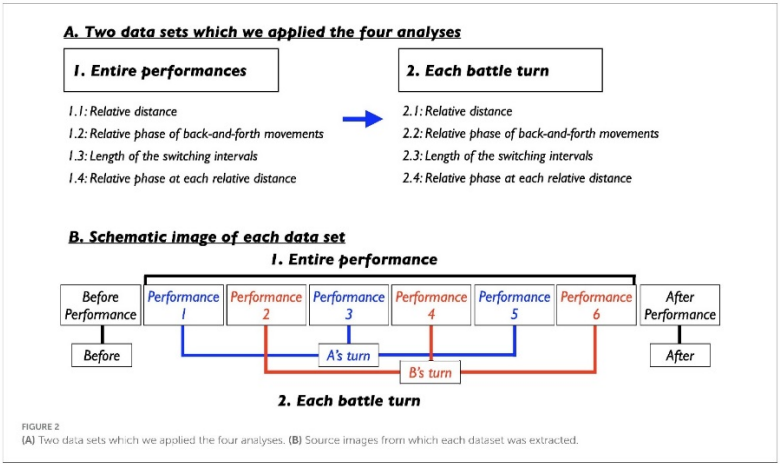
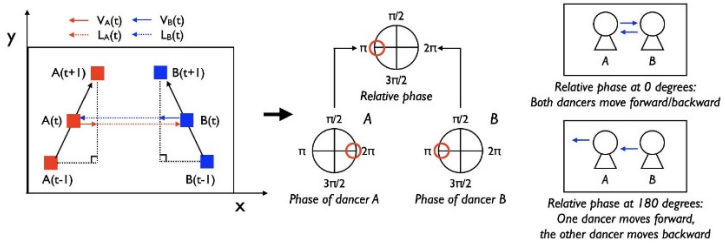


FIGURE 2
(A) Two data sets which we applied the four analyses. **(B)** Source images from which each dataset was extracted.



$$D(t) = \sqrt{\left(x(t) - u(t)\right)^2 + \left(y(t) - v(t)\right)^2} \quad (1)$$

$$A_{t-1\to t+1} = \left(x(t+1) - x(t-1), y(t+1) - y(t-1)\right)$$
$$B_{t-1\to t+1} = \left(u(t+1) - u(t-1), v(t+1) - v(t-1)\right) \quad (2)$$

$$L_A(t) = \left(u(t) - x(t), v(t) - y(t)\right)$$
$$L_B(t) = \left(x(t) - u(t), y(t) - v(t)\right) \quad (3)$$

$$V_A(t) = \frac{A_{t-1\to t+1} \cdot L_A(t)}{L_A(t) \cdot L_A(t)} |L_A(t)|$$
$$V_B(t) = \frac{B_{t-1\to t+1} \cdot L_B(t)}{L_B(t) \cdot L_B(t)} |L_B(t)| \quad (4)$$

$$V_A(t) = P_A(t) + iP_{H_A}(t) = A(t)e^{i\phi(t)}$$
$$V_B(t) = P_B(t) + iP_{H_B}(t) = B(t)e^{i\phi(t)} \quad (5)$$

$$\Delta\phi_{AB}(t) = \left| tan^{-1} \frac{P_{H_A}(t) \cdot P_B(t) - P_{H_B}(t) \cdot P_A(t)}{P_A(t) \cdot P_B(t) + P_{H_A}(t) \cdot P_{H_B}(t)} \right| \quad (6)$$

FIGURE 3
Procedures of calculating the relative distance and relative phase of the two dancers' back-and-forth movements. We made this explanation by referring to Kijima et al. (2012) and Okumura et al. (2012). $D(t)$ indicates the relative distance at time t, $x(t)$ and $y(t)$ indicate the position of dancer A at time t and u and v indicate that of dancer B. $A_{t-1\to t+1}$ and $B_{t-1\to t+1}$ indicate the vectors of the movements from time $t-1$ to time $t+1$. L_A and L_B show the vectors of the distance at time t. $V_A(t)$ and $V_B(t)$ indicate the vectors of the movements to the co-dancer's direction at time t. $P_A(t)$ and $P_{HA}(t)$ show the phase of these vectors of dancer A, and $P_B(t)$ and $P_{HB}(t)$ show these of dancer B. $\Phi_{AB}(t)$ show the relative phase between the two dancers at time t.

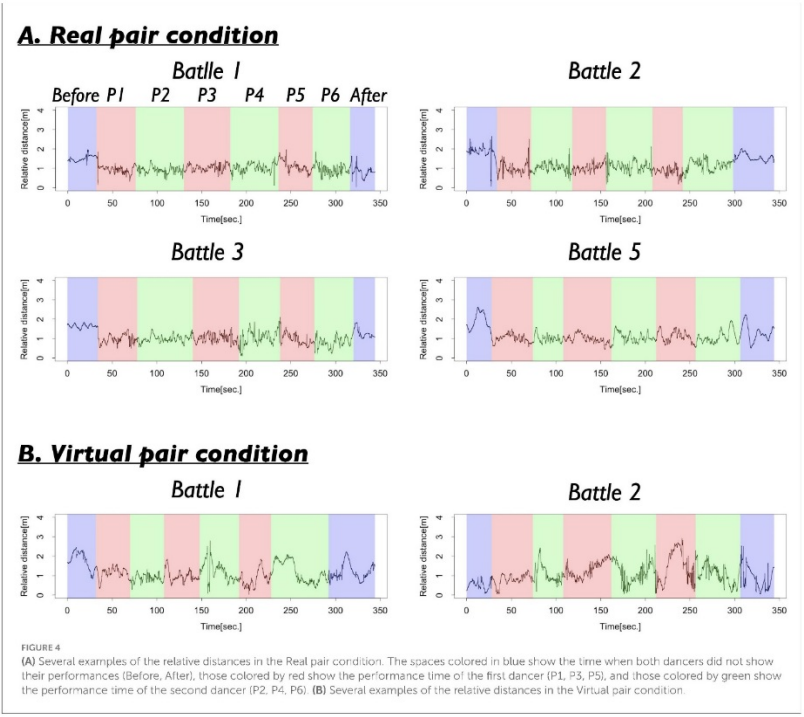


FIGURE 4
(A) Several examples of the relative distances in the Real pair condition. The spaces colored in blue show the time when both dancers did not show their performances (Before, After), those colored by red show the performance time of the first dancer (P1, P3, P5), and those colored by green show the performance time of the second dancer (P2, P4, P6). **(B)** Several examples of the relative distances in the Virtual pair condition.

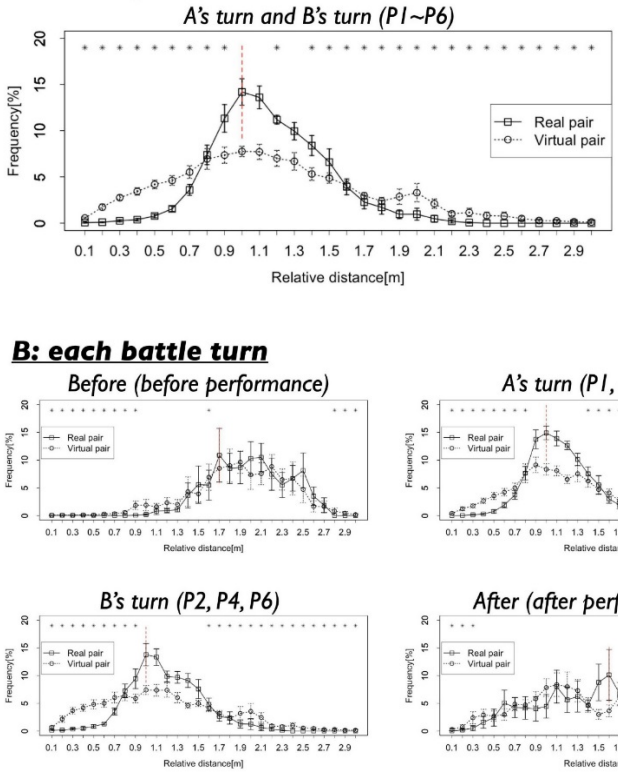


FIGURE 5
(A) Frequencies of the relative distances in the whole performance turns (P1–P6). Black vertical lines indicate standard error. Red vertical line indicates the mode. Asterisks indicate the relative distances whose frequencies show significant differences with the mode. *$p < 0.05$. **(B)** Frequencies of the relative distances in each turn.

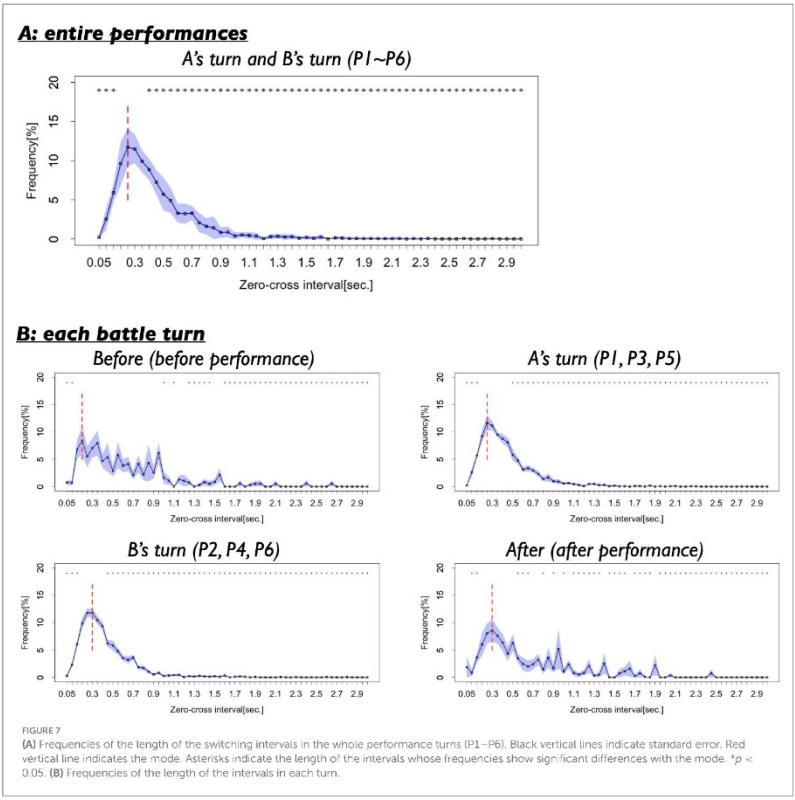


FIGURE 7
(A) Frequencies of the length of the switching intervals in the whole performance turns (P1–P6). Black vertical lines indicate standard error. Red vertical line indicates the mode. Asterisks indicate the length of the intervals whose frequencies show significant differences with the mode. *$p <$ 0.05. **(B)** Frequencies of the length of the intervals in each turn.

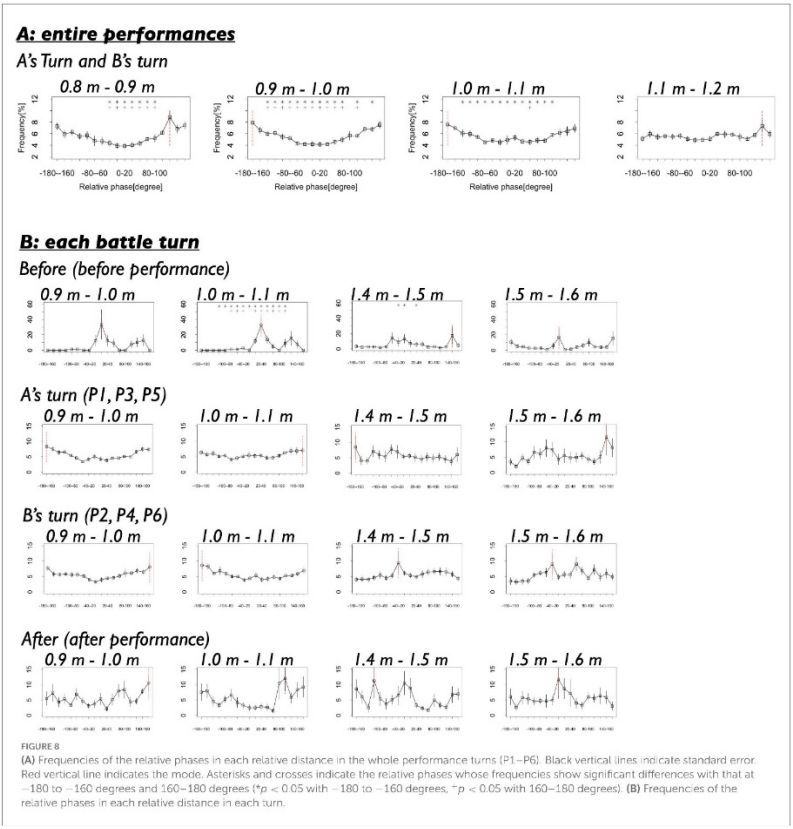


FIGURE 8

(A) Frequencies of the relative phases in each relative distance in the whole performance turns (P1–P6). Black vertical lines indicate standard error. Red vertical line indicates the mode. Asterisks and crosses indicate the relative phases whose frequencies show significant differences with that at −180 to −160 degrees and 160–180 degrees (*$p < 0.05$ with −180 to −160 degrees, ⁻$p < 0.05$ with 160–180 degrees). **(B)** Frequencies of the relative phases in each relative distance in each turn.

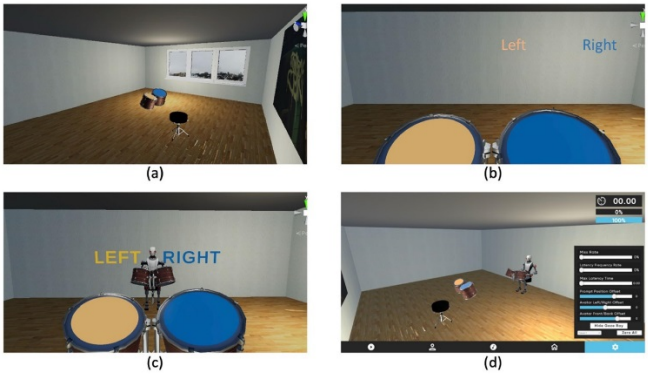


FIGURE 1
The virtual reality environment. **(a)** The initial virtual environment, **(b)** the participant's point of view in the environment. **(c)** The participants' point of view in the environment once an avatar has been loaded in. **(d)** The experimenter view, showing the adjustment panel for avatar positioning and synchrony adjustment.

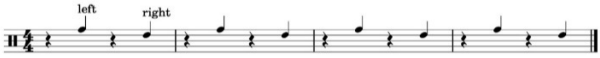


FIGURE 2
Rhythmic pattern of Billie Jean drumming beat.

FIGURE 3
Caucasian adult avatars. **(a)** Female, **(b)** male.

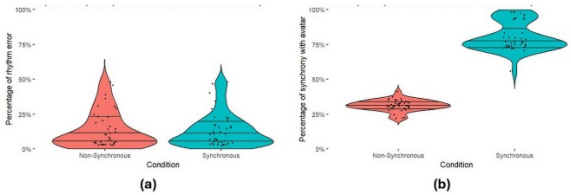
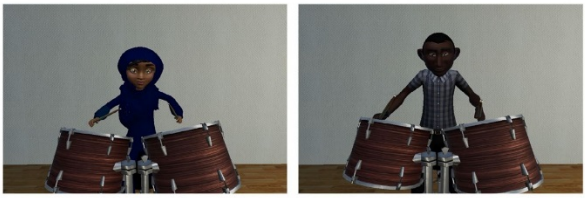


FIGURE 4
Participant drumming performance. Violin plots illustrate the distribution of **(a)** Error Rates (with beat) **(b)** Synchrony Rates (with the avatar). The width of the violins reflects the data density. Median lines and quantile markers (25th, 50th, and 75th percentiles) provide insights into central tendencies and variability.



(a) (b)

FIGURE 6
Middle eastern avatars. **(a)** Female middle eastern avatar, **(b)** male middle eastern avatar, used in Experiment 2.

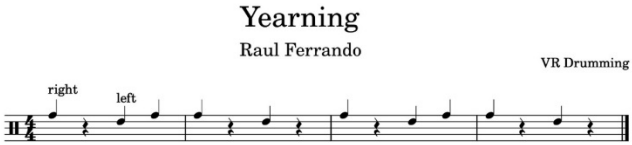


FIGURE 7
Rhythmic patterns of Yearning drumming beat.

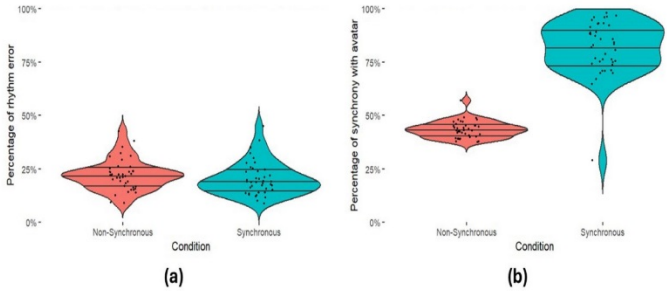


FIGURE 8
Participant drumming performance. Violin plots illustrate the distribution of **(a)** Error Rates (with beat) **(b)** Synchrony Rates (with the agent).

(a) (b)

FIGURE 11
Example of various environments available to be selected. Environment **(a)** is built to depict a typical sitting room in the UK, which could be used to match the Caucasian avatar. Environment **(b)** is built to depict a typical farm environment, which could be used to match with the non-human avatar.

(a) (b) (c) (d)

FIGURE 12
Child avatars, Caucasian male **(a)**, female **(b)** and middle eastern female **(c)** and male **(d)**.

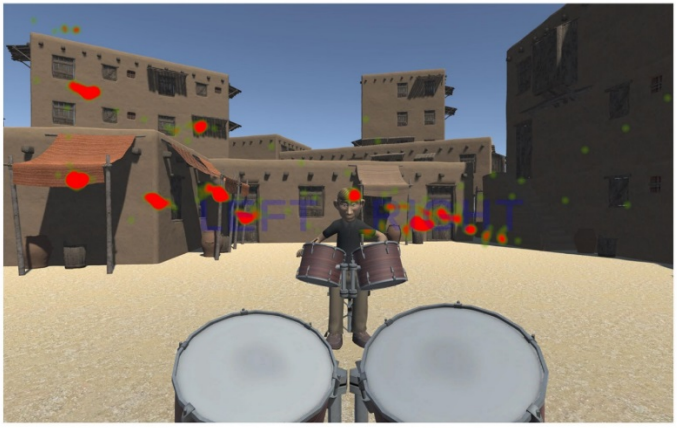


FIGURE 13
Example of 'Heatmap Viewer' application that allows the visualization of eye-tracking data, with green highlighting areas that were looked at briefly, and red showing areas that were looked at most frequently.

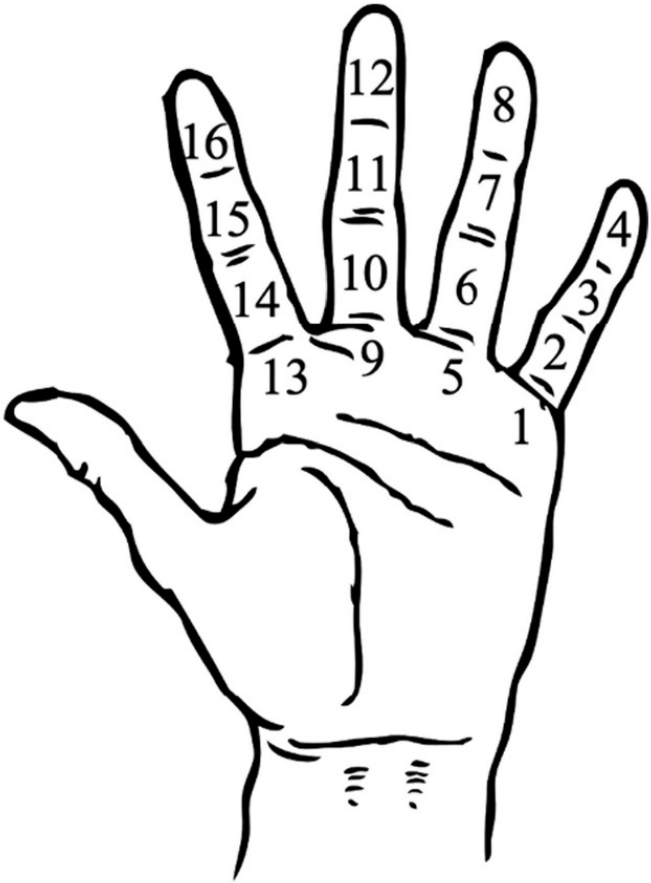


FIGURE 2
Diagram illustrating the areas of the left hand where each beat is signified with a tap from the left thumb.

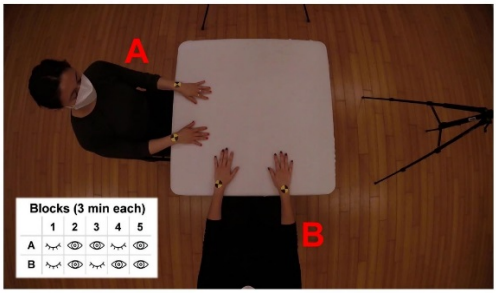


FIGURE 1
Experimental setup. The participants, labeled here with their respective referents **(A,B)** are seated perpendicular to one another at a square table. Markers (yellow and black stickers) are placed on their hands for post-experiment pose estimation using DeepLabCut (open-source pose estimation software). Improvisation task structure is included in bottom left.

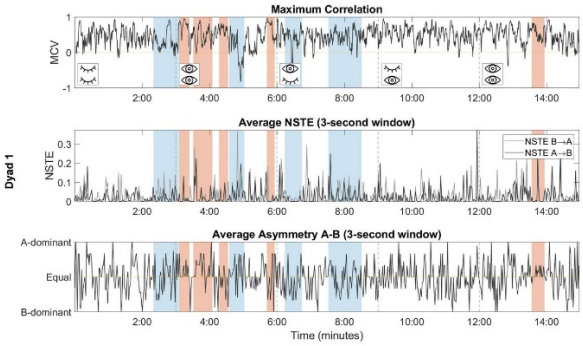


FIGURE 4
Overview of each coordination measure derived from a single session (dyad 1). Dotted lines delineate the boundaries of each perceptual condition. Moments of rated high coordination are denoted by red bars, while moments of rated low coordination are denoted by blue bars. To enhance signal clarity, the NSTE and asymmetry plots have been smoothed using non-overlapping 3 -s windows.

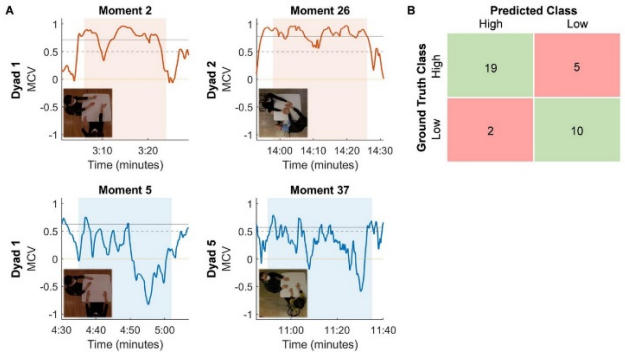


FIGURE 5
(A) Four representative moments illustrating true positive and true negative instances. For each moment, the maximum correlation vector is depicted alongside a vignette of the corresponding segment of interaction. High coordination moments are highlighted by orange panels and low coordination moments by blue panels. Solid grey lines denote the unique significance threshold for each moment while the dotted lines represent the classifier threshold $y = 0.5$. **(B)** Confusion matrix summarizing the results of classification.

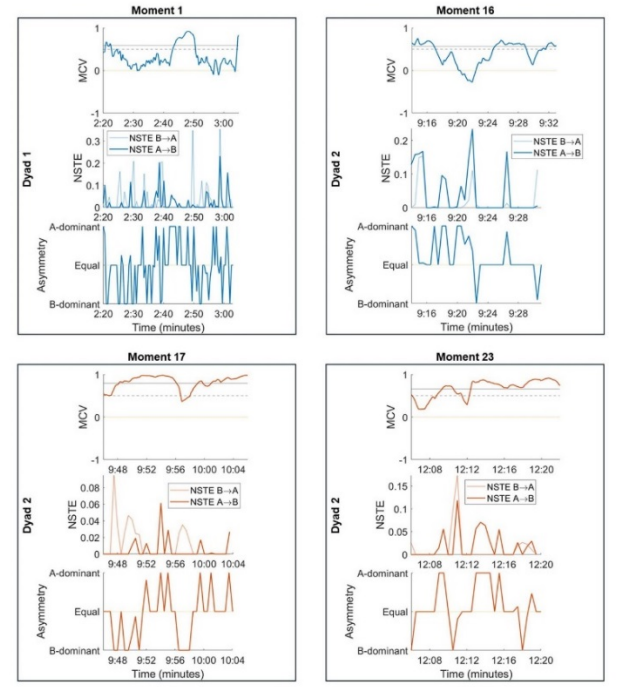


FIGURE 6
MCV, NSTE, and NSTE asymmetry from representative moments of high coordination (orange) and low coordination (blue). MCV significance threshold is indicated by the dotted line, while the classifier threshold is indicated by the solid line.

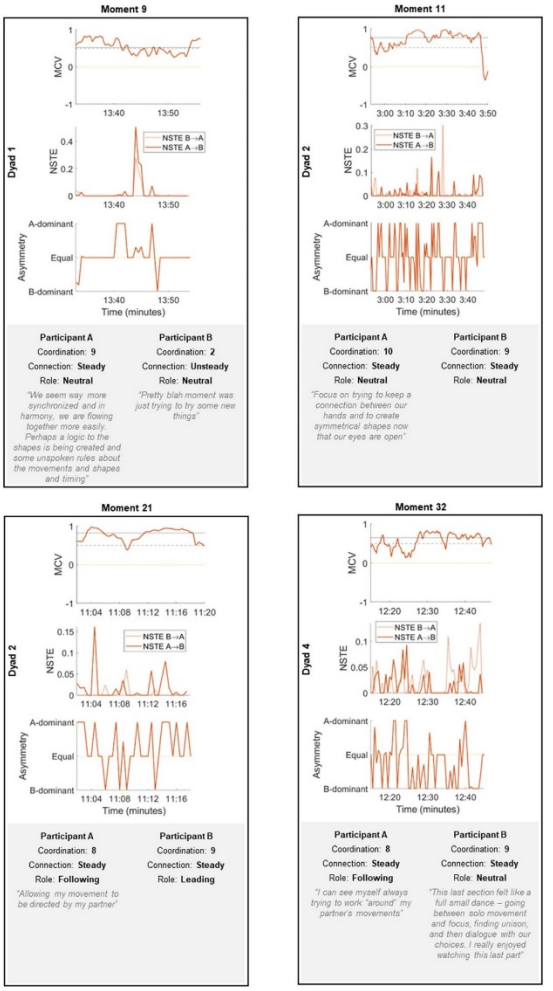


FIGURE 7
Cross-section of MCV, NSTE, and NSTE asymmetry from four moments of high coordination sufficiently overlapping with participants' segments, alongside commentary provided by participants.

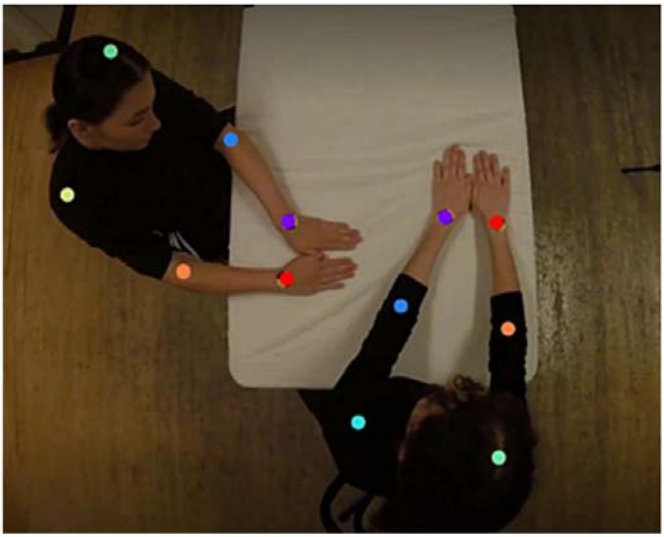


FIGURE 3
Demonstration of DeepLabCut pose estimation of user-defined body parts. Note that multiple body parts were labeled (as seen in this figure) to train a robust neural network, but only the hand data was used for analysis.

TABLE 1 Literature overview of Piano Learning Applications using Immersive Media Technologies.

Group →	Group 1			Group 2					Group 3					Group 4		
Characteristic/ paper	Chow et al. (2013)	Rigby et al. (2020)	Birhanu and Rank (2017)	Banquiero et al. (2023)	Rogers et al. (2014)	Molero et al. (2021)	Hackl and Anthes (2017)	Molloy et al. (2019)	Guo et al. (2021)	Das et al. (2017)	Sandnes and Eika (2019)	Xiao et al. (2016)	Labrou et al. (2023)	Stanbury et al. (2021)	Wang (2020)	Xiao and Ishii (2010)
Technology																
(VR, MR, Projection (P))	MR	MR	MR	MR	P	MR	MR	MR	MR	MR	P	P	MR	MR	VR	P
Piano roll notation	✓	x	✓	✓	✓	✓	✓	✓	x	✓	x	✓	x	x	x	x
Teach sight-reading	✓	✓	✓	✓	x	x	x	x	x	x	x	✓	✓	✓[a]	✓[a]	✓[a]
Teach improvisation	x	x	x	x	x	x	x	x	x	✓	✓	✓	x	✓[a]	✓[a]	✓[a]
Teach musical expression	x	x	x	x	x	x	x	x	x	x	x	✓	x	✓[a]	✓[a]	✓[a]
Teaching music theory	x	x	✓	x	x	x	x	x	x	x	✓	✓	x	✓[a]	✓[a]	✓[a]
Songs	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[a]	✓[a]	✓[a]
Remote lessons																
with piano teacher	x	x	x	x	x	x	x	x	x	x	x	x	x	✓	✓	✓
Automated real-time																
feedback on note accuracy	✓	✓	x	x	✓	✓	✓	✓	✓	x	x	x	x	x	x	x
Animated characters	x	x	x	x	x	x	x	✓	x	✓	x	✓	x	x	x	x
3D virtual hand animations	x	x	x	x	x	x	x	x	✓	✓	x	x	✓	x	x	x
Main focus on																
fingering/posture	x	x	x	x	x	x	x	x	✓	x	x	x	✓	x	x	x
Virtual piano overlay																
on physical keyboard	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	✓	x[b]	✓	✓

[a]The applications do not include specialized features for teaching sight-reading, improvisation, musical expression, or music theory. Nevertheless, these skills can be taught by a teacher to which the applications establish a connection.
[b]Instead, an Internet of Things device is attached to the students' piano.

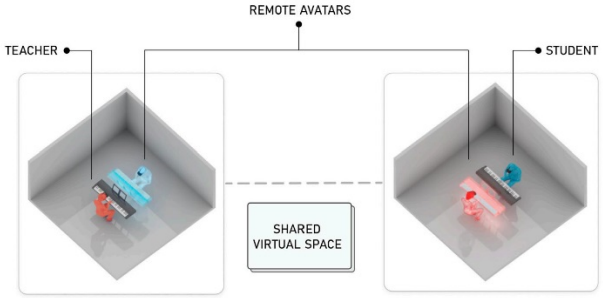


FIGURE 1
For remote piano lessons, the teacher and student connect to a shared virtual room using a digital piano and an HMD. The teacher/student is visible as a virtual avatar for the remote user.

FIGURE 2
(A) A participant of the user study on the music theory hub uses the application. The setup requires an HMD, a digital piano, and a cable to connect the HMD to the piano. **(B)** Within the Hand Coach component, users practice using the hand menu, triggered when the left-hand palm faces upward. This menu facilitates quick settings adjustments and enables teleportation throughout the virtual space. **(C)** To calibrate the virtual piano to the physical piano first the lowest and then the highest key of the physical piano need to be pressed. **(D)** The position of the virtual piano can be fine-tuned using the adjustment buttons.

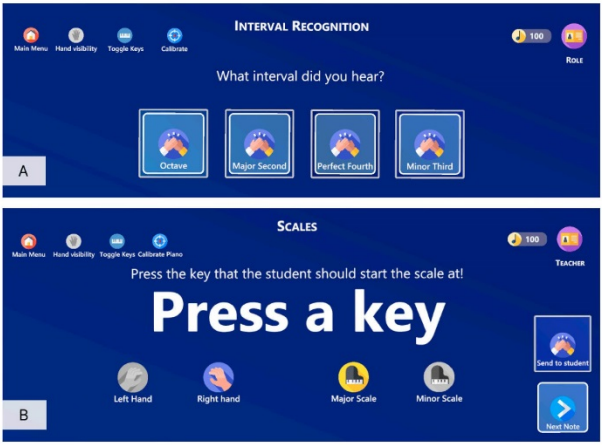


FIGURE 4
(A) The Interval Game prompts the student to identify intervals played by the teacher. **(B)** In the Scale Game, the teacher assigns a scale for the student to play, with feedback provided both automatically and by the teacher.

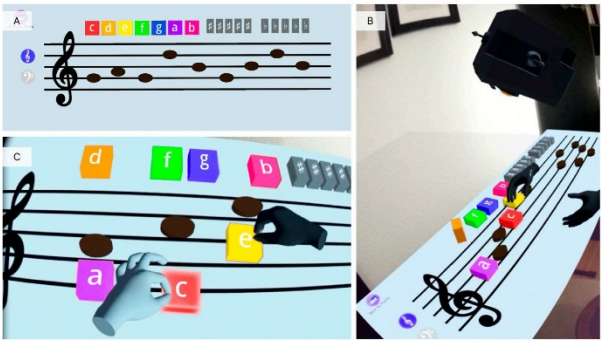


FIGURE 5
(A) The Theory Area can be used by the teacher for interactive music theory-related exercises and explanations. **(B, C)** Teachers and students can interact collaboratively with the objects.

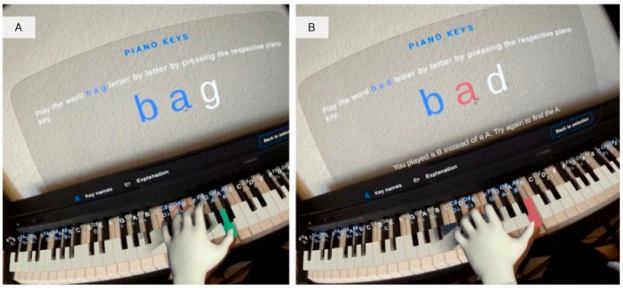


FIGURE 6
Within the Piano Words game of the Piano Theory Hub, users can practice recognizing the piano keys given by their note names. Optionally, the note names can be displayed directly over the virtual keyboard while practicing. **(A)** Correct key presses illuminate the key in green, accompanied by a positive sound effect. **(B)** Incorrect key presses result in red illumination on both the key and displayed note name, accompanied by a negative sound effect. Additionally, the screen provides feedback on the played note.

FIGURE 7
(A) In the interval exercise users play an interval given by its name. When hints are enabled, the distance in semitones between the two notes gets displayed on the screen and the keys. **(B)** In the scale exercise users play a scale given by its name. When hints are enabled, the next key to be pressed is highlighted in yellow and the correct fingering is displayed on the keys.

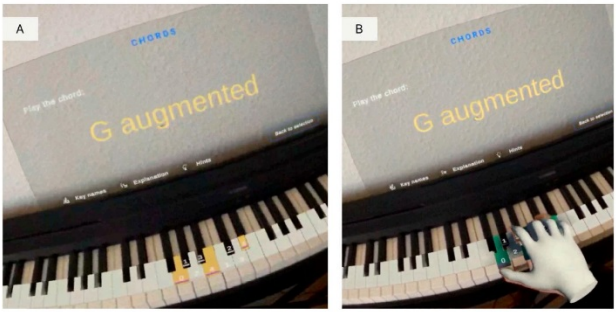


FIGURE 8
Chord Exercise. **(A)** The number of semitones between the notes of the chord is indicated on the keys to facilitate comprehension of how chord types follow specific patterns of semitone distance. **(B)** When a chord is played correctly the keys light up in green. Otherwise, the keys light up in red, and explanations of the chord structure are displayed on the screen.

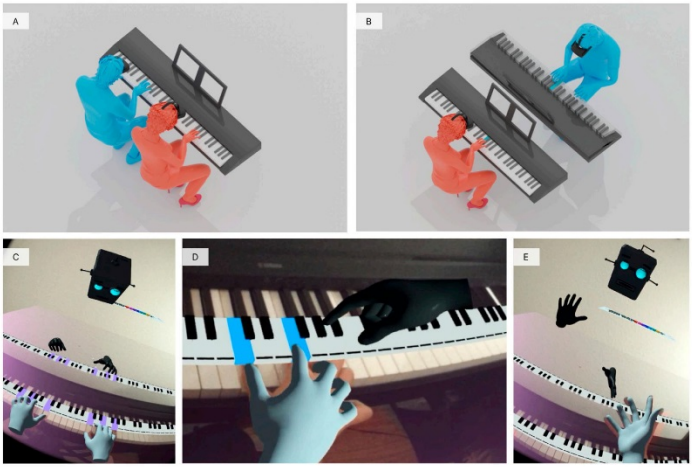


FIGURE 9
(A, D) The teacher is placed next to the student and can provide feedback, e.g., on hand positioning, fingering, and dynamics, while the student plays the piano.**(B, C)** The teacher is positioned opposite the student and plays a melody that the student tries to replicate by observing the highlighting of the keys. **(E)** The positioning opposite of each other facilitates conversation and allows for the use of non-verbal communication and gesture, e.g., to explain theoretical concepts.

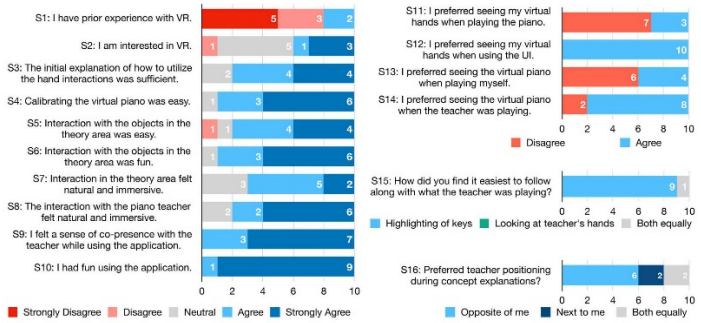


FIGURE 12
Results of 16 statements (S) included in the survey conducted for the user study on the remote piano lessons with a teacher.

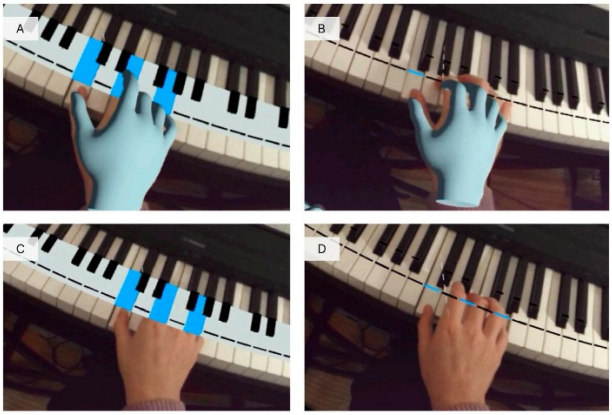


FIGURE 3
Users can toggle virtual hand and piano visibility based on their preferences. **(A)** Both virtual hands and the virtual piano are visible. **(B)** Only the virtual hands are displayed. **(C)** Only the virtual piano is displayed. **(D)** Neither the virtual hands nor the virtual piano is displayed.

Liberating the performer who dances with the pole

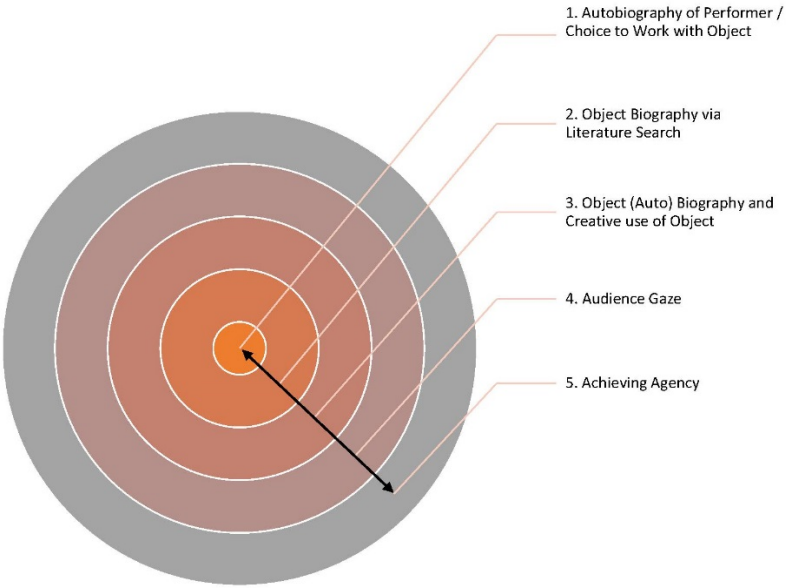


Figure 1. Originally titled "A creative and reflective model for navigating objects in solo performance to achieve agency".

Fig. 1. Traditional Dance of Tujia Baishou. Source: Xhina News Service (2021).

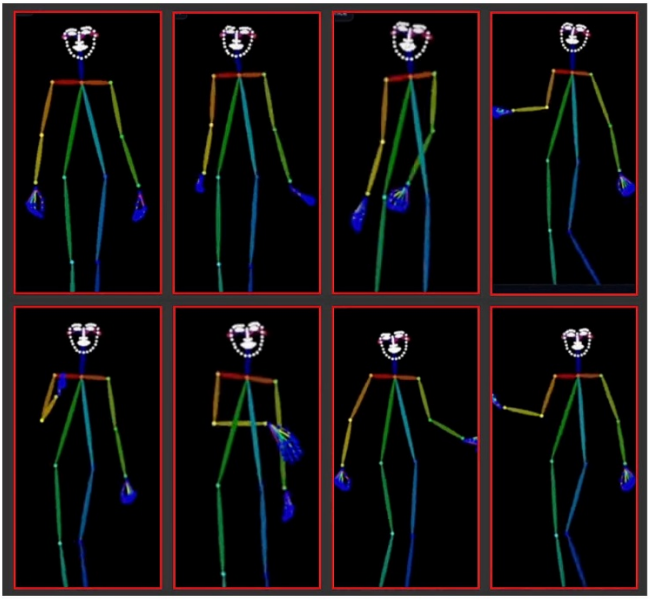


Fig. 2. Example sequence of human poses recognized from dance videos using OpenPose.
(Source: obtained by the author using open-source software OpenPose)

12.3. Examples of Scientific Article Formatting

Preparation of Articles for IEEE TRANSACTIONS and JOURNALS (2021)

First A. Author, *Fellow, IEEE*, Second B. Author, and Third C. Author, Jr., *Member, IEEE*

***Abstract*—This document provides a guide for preparing articles for IEEE Transactions, Journals, and Letters. Use this document as a template if you are using Microsoft *Word*. Otherwise, use this as an instruction set. The electronic file of your article will be formatted further at IEEE. Titles should be written in uppercase and lowercase letters, not all uppercase. Avoid writing long formulas with subscripts in the title; short formulas that identify the elements are fine (e.g., "Nd–Fe–B"). Do not write "(Invited)" in the title. Full names of authors are preferred in the author field but are not required. Put a space between authors' initials. ORCIDs can be provided here as well. In the title, all variables should appear lightface italic; numbers and units will remain bold. Abstracts must be a single paragraph. In order for an Abstract to be effective when displayed in IEEE *Xplore* as well as through indexing services such as Compendex, INSPEC, Medline, ProQuest, and Web of Science, it must be an accurate, stand-alone reflection of the contents of the article. They shall not contain displayed mathematical equations, numbered reference citations, nor footnotes. They should include three or four different keywords or phrases, as this will help readers to find it. It is important to avoid over-repetition of such phrases as this can result in a page being rejected by search engines. Ensure that your abstract reads well and is grammatically correct.**

***Index Terms*—Enter keywords or phrases in alphabetical order, separated by commas. For a list of suggested keywords, send a blank e-mail to keywords@ieee.org or visit http://www.ieee.org/organizations/pubs/ani_prod/keywrd98.txt**

I. INTRODUCTION

THIS document is a template for Microsoft *Word*. If you would prefer to use LaTeX, download IEEE's LaTeX style and sample files from https://template-selector.ieee.org/secure/templateSelector/publicationType. You can also use the Overleaf editor at https://www.overleaf.com/blog/278-how-to-use-overleaf-with-ieee-collabratec-your-quick-guide-to-getting-started#.Vp6tpPkrKM9.

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The *IEEE Editorial Style Manual for Authors* is available at https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/create-the-text-of-your-article/ieee-editorial-style-manual/. This contains a formal set of editorial guidelines for IEEE Transactions, Journals, and Letters, including:

- punctuation;
- capitalization;
- abbreviations;
- section headings;
- numbers, equations;
- footnotes;
- biographies;
- some common mistakes;
- units of measurement.

Communicate your work clearly. If you are not fully proficient in English, consider using an English language editing service before submitting your article. An expert editing service can help you refine the use of English in your article, so you can communicate your work more effectively.

The use of an editing service is paid for by the author. It does not guarantee acceptance in an IEEE publication. For more information, visit the IEEE Author Center at https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/create-the-text-of-your-article/structure-your-article/#editing-service.

II. GUIDELINES FOR MANUSCRIPT PREPARATION

When you open the template, select "Page Layout" from the "View" menu in the menu bar (View | Page Layout), (these instructions assume Microsoft *Word*. Some versions may have

This paragraph of the first footnote will contain the date on which you submitted your paper for review, which is populated by IEEE. It is IEEE style to display support information, including sponsor and financial support acknowledgment, here and not in an acknowledgment section at the end of the article. For example, "This work was supported in part by the U.S. Department of Commerce under Grant BS123456." The name of the corresponding author appears after the financial information, e.g. *(Corresponding author: M. Smith)*. Here you may also indicate if authors contributed equally or if there are co-first authors.

The next few paragraphs should contain the authors' current affiliations, including current address and e-mail. For example, First A. Author is with the National Institute of Standards and Technology, Boulder, CO 80305 USA (e-mail: author@ boulder.nist.gov).

Second B. Author, Jr., was with Rice University, Houston, TX 77005 USA. He is now with the Department of Physics, Colorado State University, Fort Collins, CO 80523 USA (e-mail: author@lamar.colostate.edu).

Third C. Author is with the Electrical Engineering Department, University of Colorado, Boulder, CO 80309 USA, on leave from the National Research Institute for Metals, Tsukuba 305-0047, Japan (e-mail: author@nrim.go.jp).

Mentions of supplemental materials and animal/human rights statements can be included here.

Color versions of one or more of the figures in this article are available online at http://ieeexplore.ieee.org

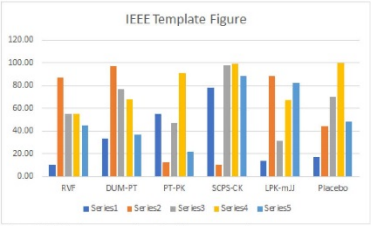

Fig. 1. This is a sample of a figure caption.

alternate ways to access the same functionalities noted here). Then, type over sections of the template or cut and paste from another document and use markup styles. The pull-down style menu is in the Formatting Toolbar at the top of your *Word* window (e.g., the style at this point in the document is "Text"). Highlight a section that you want to designate with a certain style, and then select the appropriate name on the style menu. The style will adjust your fonts and line spacing. Do not change the font sizes or line spacing to squeeze more text into a limited number of pages. Use *italics* for emphasis; do not underline.

IEEE will do the final formatting of your article. If your article is intended for a conference, please observe the conference page limits.

This is intended as an authoring template, not a final production template. It is not intended to match the final published format. Differences in final formatting are likely in the final IEEE files. Page count in the template is an estimate. Do not adjust line and character spacing to fit your paper to a specific length.

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have already been defined in the abstract. Abbreviations such as IEEE, SI, ac, and dc do not have to be defined. Abbreviations that incorporate periods should not have spaces: write "C.N.R.S.," not "C. N. R. S." Do not use abbreviations in the title unless they are unavoidable (for example, "IEEE" in the title of this article).

III. Math

Use either the Microsoft Equation Editor or the MathType plugin, which can be obtained from https://store.wiris.com/en/products/mathtype/download. For help with formatting and placing equations, refer to the *IEEE Editing Math Guide* at http://journals.ieeeauthorcenter.ieee.org/wp-content/uploads/sites/7/Editing-Mathematics.pdf and the *IEEE MathType Tutorial for Microsoft Word Users* at http://journals.ieeeauthorcenter.ieee.org/wp-content/uploads/sites/7/IEEE-Math-Typesetting-Guide-for-MS-Word-Users.pdf.

TABLE I
THIS IS A SAMPLE OF A TABLE TITLE

Name	#1	#2	#3	#4	#5
RVF	10	87	55	55	45
DUM-PT	33	97	77	68	37
PT-PK	55	12	47	91	22
SCPS-CK	78	10	98	99	88
LPK-mJJ	14	88	31	67	82
Placebo	17	44	70	100	48

A. Equations

Number equations consecutively with equation numbers in parentheses flush with the right margin of the column, as in (1). First use the equation editor to create the equation. Then select the "Equation" markup style. Press the tab key and write the equation number in parentheses. To make your equations more compact, you may use the solidus (/), the exp function, or appropriate exponents. Use parentheses to avoid ambiguities in denominators. Punctuate equations when they are part of a sentence, as in

$$B_p + H_2 = 40. \quad (1)$$

Be sure that the symbols in your equation have been defined before the equation appears or immediately following. Italicize symbols (*T* might refer to temperature, but T is the unit tesla). When referring to an equation or formula, use simply "(1)," not "Eq. (1)" or "equation (1)," except at the beginning of a sentence: "Equation (1) is ... ."

IV. Guidelines for Graphics Preparation and Submission

A. Types of Graphics

The following list outlines the different types of graphics published in IEEE journals. They are categorized based on their construction, and use of color / shades of gray:

1) **Color/Grayscale Figures**
   Figures that are meant to appear in color, or shades of black/gray. Such figures may include photographs, illustrations, multicolor graphs, and flowcharts.
2) **Line Art Figures**
   Figures that are composed of only black lines and shapes. These figures should have no shades or half-tones of gray, only black and white.
3) **Tables**
   Data charts which are typically black and white, but sometimes include color.

B. Multipart Figures

These are figures compiled of more than one sub-figure presented side-by-side or stacked. If a multipart figure is made up of multiple figure types (one part is line art, and another is grayscale or color), the figure should meet the stricter guidelines.

C. File Formats for Graphics

Format and save your graphics using a suitable graphics processing program that will allow you to create the images as PostScript (PS), Encapsulated PostScript (.EPS), Tagged Image File Format (.TIFF), Portable Document Format (.PDF), JPEG, or Portable Network Graphics (.PNG). These programs can re-size them and adjust the resolution settings. If you created your source files in one of the following programs you will be able to submit the graphics without converting to a PS, EPS, TIFF, PDF, or PNG file: Microsoft Word, Microsoft PowerPoint, or Microsoft Excel. Though it is not required, it is strongly recommended that these files be saved in PDF format rather than DOC, XLS, or PPT. Doing so will protect your figures from common font and arrow stroke issues that occur when working on the files across multiple platforms. When submitting your final files, your graphics should all be submitted individually in one of these formats along with the manuscript.

D. Sizing of Graphics

Most charts, graphs, and tables are one column wide (3.5 inches / 88 mm / 21 picas) or page wide (7.16 inches / 181 millimeters / 43 picas). The maximum depth a graphic can be is 8.5 inches (216 millimeters / 54 picas). When choosing the depth of a graphic, please allow space for a caption. Figures can be sized between column and page widths if the author chooses, however, it is recommended that figures not be sized less than column width unless when necessary.

The final printed size of author photographs is exactly 1 in wide by 1.25 in tall (25.4 mm x 31.75 mm / 6 picas x 7.5 picas). Author photos printed in editorials measure 1.59 in wide by 2 in tall (40 mm x 50 mm / 9.5 picas x 12 picas).

E. Resolution

The proper resolution of your figures will depend on the type of figure it is as defined in the "Types of Figures" section. Author photographs, color, and grayscale figures should be at least 300dpi. Line art, including tables should be a minimum of 600dpi.

F. Vector Art

In order to preserve the figures' integrity across multiple computer platforms, we accept files in the following formats: .EPS/.PDF/.PS. All fonts must be embedded or text converted to outlines in order to achieve the best-quality results.

G. Color Space

The term "color space" refers to the entire sum of colors that can be represented within the said medium. For our purposes, the three main color spaces are grayscale, RGB (red/green/blue), and CMYK (cyan/magenta/yellow/black). RGB is generally used with on-screen graphics, whereas CMYK is used for printing purposes.

All color figures should be generated in RGB or CMYK color space. Grayscale images should be submitted in grayscale color space. Line art may be provided in grayscale OR bitmap colorspace. Note that "bitmap colorspace" and "bitmap file format" are not the same thing. When bitmap color space is selected, .TIF/.TIFF/.PNG are the recommended file formats.

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When preparing your graphics, IEEE suggests that you use one of the following Open Type fonts: Times New Roman, Helvetica, Arial, Cambria, or Symbol. If you are supplying EPS, PS, or PDF files, all fonts must be embedded. Some fonts may only be native to your operating system; without the fonts embedded, parts of the graphic may be distorted or missing.

A safe option when finalizing your figures is to strip out the fonts before you save the files, creating "outline" type. This converts fonts to artwork which will appear uniformly on any screen.

I. Using Labels Within Figures

1) **Figure Axis Labels**
   a) Figure axis labels are often a source of confusion. Use words rather than symbols. As an example, write the quantity "Magnetization" or "Magnetization M," not just "M." Put units in parentheses. Do not label axes only with units. For example, write "Magnetization (A/m)" or "Magnetization (A · m^{-1})," not just "A/m." Do not label axes with a ratio of quantities and units. For example, write "Temperature (K)," not "Temperature/K."
   b) Multipliers can be especially confusing. Write "Magnetization (kA/m)" or "Magnetization (10^3 A/m)." Do not write "Magnetization (A/m) × 1000" because the reader would not know whether the top axis label means 16000 A/m or 0.016 A/m. Figure labels should be legible, approximately 8- to 10-point type.

2) **Subfigure Labels in Multipart Figures and Tables**
   Multipart figures should be combined and labeled before final submission. Labels should appear centered below each subfigure in 8-point Times New Roman font in the format of (a) (b) (c).

J. Referencing a Figure or Table Within Your Article

When referencing your figures and tables within your article, use the abbreviation "Fig." even at the beginning of a sentence. Do not abbreviate "Table." Tables should be numbered with Roman numerals.

K. Submitting Your Graphics

Because IEEE will do the final formatting of your article, all figures, figure captions, and tables can be placed at the end of your article. However, if you do place your figures within the article, they should be placed at the top of the page, closest to the first mention in the text. Figures should be submitted as individual files, separate from the manuscript in one of the file formats listed above. Place figure captions below the figures;

place table headings above the tables. Do not include captions as part of the figures, or put them in "text boxes" linked to the figures. Also, do not place borders around the outside of your figures.

L. Color Processing / Printing in IEEE Transactions, Journals, and Letters

All IEEE Transactions, Journals, and Letters allow an author to publish color figures on IEEE *Xplore* at no charge, and automatically convert them to grayscale for print versions. In most journals, figures and tables may alternatively be printed in color if an author chooses to do so. Please note that this service comes at an extra expense to the author. If you intend to have print color graphics, you will have the opportunity to indicate this in the Author Gateway and will be contacted by PubOps to confirm the charges.

V. Conclusion

A conclusion section is not required. Although a conclusion may review the main points of the article, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

Appendix

Appendixes, if needed, appear before the acknowledgment.

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The preferred spelling of the word "acknowledgment" in American English is without an "e" after the "g." Use the singular heading even if you have many acknowledgments. Avoid expressions such as "One of us (S.B.A.) would like to thank ... ." Instead, write "F. A. Author thanks ... ." In most cases, sponsor and financial support acknowledgments are placed in the unnumbered footnote on the first page, not here.

References and Footnotes

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References need not be cited in text. When they are, they appear on the line, in square brackets, inside the punctuation. Multiple references are each numbered with separate brackets. When citing a section in a book, please give the relevant page numbers. In text, refer simply to the reference number. Do not use "Ref." or "reference" except at the beginning of a sentence: "Reference [3] shows ... ." Please do not use automatic endnotes in *Word*, rather, type the reference list at the end of the paper using the "References" style.

Reference numbers are set flush left and form a column of their own, hanging out beyond the body of the reference. The reference numbers are on the line, enclosed in square brackets. In all references, the given name of the author or editor is abbreviated to the initial only and precedes the last name. Use them all; use *et al.* only if names are not given or if there are more than 6 authors. Use commas around Jr., Sr., and III in names. Abbreviate conference titles. When citing IEEE Transactions, provide the issue number, page range, volume number, month if available, and year. When referencing a patent, provide the day and the month of issue, or application. References may not include all information; please obtain and include relevant information. Do not combine references. There must be only one reference with each number. If there is a URL included with the reference, it can be included at the end of the reference.

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REFERENCES

Basic format for periodicals:

J. K. Author, "Name of paper," *Abbrev. Title of Periodical*, vol. x, no. x, pp. xxx-xxx, Abbrev. Month, year, doi: 10.1109.XXX.1234567.

Periodicals using article numbers:

J. K. Author, "Name of paper," *Abbrev. Title of Periodical*, vol. x, no. x, Abbrev. Month, year, Art. no. xxxxx, doi: 10.1109.XXX.1234567.

Examples:

[1] J. U. Duncombe, "Infrared navigation Part I: An assessment of feasibility," *IEEE Trans. Electron Devices*, vol. ED-11, no. 1, pp. 34–39, Jan. 1959, doi: 10.1109/TED.2016.2628402.

[2] E. P. Wigner, "Theory of traveling-wave optical laser," *Phys. Rev.*, vol. 134, pp. A635–A646, Dec. 1965.

[3] P. Kopyt *et al.*, "Electric properties of graphene-based conductive layers from DC up to terahertz range," *IEEE THz Sci. Technol.*, to be published, doi: 10.1109/TTHZ.2016.2544142. *(Note: If a paper is still to be published, but is available in early access, please follow ref [5].)*

[4] R. Fardel, M. Nagel, F. Nuesch, T. Lippert, and A. Wokaun, "Fabrication of organic light emitting diode pixels by laser-assisted forward transfer," *Appl. Phys. Lett.*, vol. 91, no. 6, Aug. 2007, Art. no. 061103.

[5] D. Comite and N. Pierdicca, "Decorrelation of the near-specular land scattering in bistatic radar systems," *IEEE Trans. Geosci. Remote Sens.*, early access, doi: 10.1109/TGRS.2021.3072864. *(Note: This format is used for articles in early access. The doi must be included.)*

[6] H. V. Habi and H. Messer, "Recurrent neural network for rain estimation using commercial microwave links," *IEEE Trans. Geosci. Remote Sens.*, vol. 59, no. 5, pp. 3672-3681, May 2021. [Online]. Available: https://ieeexplore.ieee.org/document/9153027

Basic format for books:

J. K. Author, "Title of chapter in the book," in *Title of Published Book*, xth ed. City of Publisher, (only U.S. State), Country: Abbrev. of Publisher, year, ch. x, sec. *x*, pp. xxx–xxx.

Examples:

[7] G. O. Young, "Synthetic structure of industrial plastics," in *Plastics*, 2nd ed., vol. 3, J. Peters, Ed. New York, NY, USA: McGraw-Hill, 1964, pp. 15–64.

[8] W.-K. Chen, *Linear Networks and Systems*. Belmont, CA, USA: Wadsworth, 1993, pp. 123–135.

[9] Philip B. Kurland and Ralph Lerner, eds., *The Founders' Constitution*. Chicago, IL, USA: Univ. of Chicago Press, 1987. Accessed on: Feb. 28, 2010, [Online]. Available: http://press-pubs.uchicago.edu/founders/

Basic format for handbooks:

Name of Manual/Handbook, x ed., Abbrev. Name of Co., City of Co., Abbrev. State, Country, year, pp. xxx-xxx.

Examples:

[10] *Transmission Systems for Communications*, 3rd ed., Western Electric Co., Winston-Salem, NC, USA, 1985, pp. 44–60.

[11] *Motorola Semiconductor Data Manual*, Motorola Semiconductor Products Inc., Phoenix, AZ, USA, 1989.

[12] R. J. Hijmans and J. van Etten, "Raster: Geographic analysis and modeling with raster data," R Package Version 2.0-12, Jan. 12, 2012. [Online]. Available: http://CRAN.R-project.org/package=raster

Basic format for reports:

J. K. Author, "Title of report," Abbrev. Name of Co., City of Co., Abbrev. State, Country, Rep. xxx, year.

Example:

[13] E. E. Reber, R. L. Michell, and C. J. Carter, "Oxygen absorption in the earth's atmosphere," Aerospace Corp., Los Angeles, CA, USA, Tech. Rep. TR-0200 (4230-46)-3, Nov. 1988.

Basic format for conference proceedings:

J. K. Author, "Title of paper," in *Abbreviated Name of Conf.*, City of Conf., Abbrev. State (if given), Country, year, pp. xxxxxx.

Examples:

[14] D. B. Payne and J. R. Stern, "Wavelength-switched passively coupled single-mode optical network," in *Proc. IOOC-ECOC*, Boston, MA, USA, 1985, pp. 585–590.

[15] D. Ebehard and E. Voges, "Digital single sideband detection for interferometric sensors," presented at the 2nd Int. Conf. Optical Fiber Sensors, Stuttgart, Germany, Jan. 2-5, 1984.
[16] PROCESS Corporation, Boston, MA, USA. Intranets: Internet technologies deployed behind the firewall for corporate productivity. Presented at INET96 Annual Meeting. [Online]. Available: http://home.process.com/Intranets/wp2.htp

Basic format for electronic documents (when available online):
Issuing Organization. (year, month day). *Title*. [Type of medium]. Available: site/path/file

Example:
[17] U.S. House. 102nd Congress, 1st Session. (1991, Jan. 11). *H. Con. Res. 1, Sense of the Congress on Approval of Military Action*. [Online]. Available: LEXIS Library: GENFED File: BILLS

Basic format for patents:
J. K. Author, "Title of patent," U.S. Patent *x xxx xxx*, Abbrev. Month, day, year.

Example:
[18] G. Brandli and M. Dick, "Alternating current fed power supply," U.S. Patent 4 084 217, Nov. 4, 1978.

Basic format for theses (M.S.) and dissertations (Ph.D.):
J. K. Author, "Title of thesis," M.S. thesis, Abbrev. Dept., Abbrev. Univ., City of Univ., Abbrev. State, year.
J. K. Author, "Title of dissertation," Ph.D. dissertation, Abbrev. Dept., Abbrev. Univ., City of Univ., Abbrev. State, year.

Examples:
[19] J. O. Williams, "Narrow-band analyzer," Ph.D. dissertation, Dept. Elect. Eng., Harvard Univ., Cambridge, MA, USA, 1993.
[20] N. Kawasaki, "Parametric study of thermal and chemical nonequilibrium nozzle flow," M.S. thesis, Dept. Electron. Eng., Osaka Univ., Osaka, Japan, 1993.

Basic format for the most common types of unpublished references:
J. K. Author, private communication, Abbrev. Month, year.
J. K. Author, "Title of paper," unpublished.
J. K. Author, "Title of paper," to be published.

Examples:
[21] A. Harrison, private communication, May 1995.
[22] B. Smith, "An approach to graphs of linear forms," 2014, *arXiv:2105.02824*.
[23] A. Brahms, "Representation error for real numbers in binary computer arithmetic," IEEE Computer Group Repository, Paper R-67-85.

Basic formats for standards:
a) *Title of Standard*, Standard number, date.
b) *Title of Standard*, Standard number, Corporate author, location, date.

Examples:
[24] IEEE Criteria for Class IE Electric Systems, IEEE Standard 308, 1969.
[25] Letter Symbols for Quantities, ANSI Standard Y10.5-1968.

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Numbering and a description of figures is performed below the figures, e.g., *Times New Roman, 9 pt., Italic, centre.*

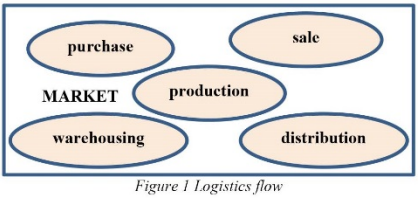

Figure 1 Logistics flow

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Table 1 Matrix of length

	A	B	C	D	E	F
A	**0**	**2**	**5**	**8**	**6**	**5**
B	**9**	**0**	**3**	**6**	**4**	**1**
C	**6**	**2**	**0**	**5**	**2**	**1**
D	**32**	**4**	**6**	**0**	**1**	**0**
E	**4**	**7**	**1**	**2**	**0**	**3**
F	**5**	**3**	**4**	**1**	**1**	**0**
G	56	18	19	22	14	10

Text in equation form must be readable, *Cambria Math, font size 10, italic, right aligned*. All equations must be numbered in the order in which they appear in the paper (e.g. (1), (2)). Numbering of equations is performed beside the equation [2-4,13-19].

$$(x+a)^n = \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k} \tag{1}$$

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Manuscripts may be rejected by the editorial office if it is felt that the work was not carried out within an ethical framework. Plagiarism in any form constitutes a serious violation of the most basic principles of education, research and scholarship and cannot be tolerated. This policy details the responsibilities of all authors, editors and reviewers working with and for Acta logistica journal as well as our own ethical responsibilities. This includes, but is not limited to, plagiarism, data falsification, misuse of third-party material, fabrication of results and fraudulent authorship [20].

2 Methodology

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- Language of manuscript is clear and understandable.
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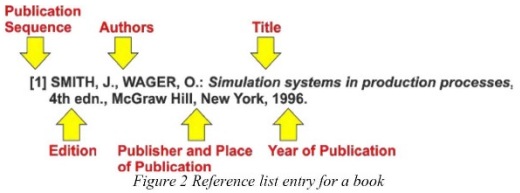
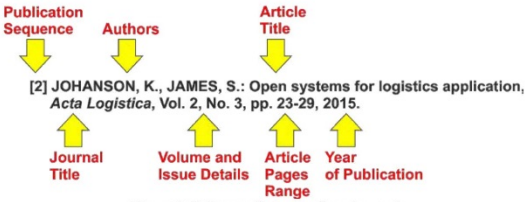


Figure 2 Reference list entry for a book



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Book with two authors

[2] MCCARTHY, P., HATCHER, C.: *Speaking persuasively, Making the most of your presentations*, Sydney, Allen and Unwin, 1996.

Book with three or more authors

[3] FISHER, R., URY, W., PATTON, B.: *Getting to yes, negotiating an agreement without giving in*, 2nd ed., London, Century Business, 1991. doi:10555/al/article….

Book – second or later edition

[4] BARNES, R.: *Successful study for degrees*, 2nd ed., London, Routledge, 1995.

Book with an editor

[5] DANAHER, P.: (ed.) *Beyond the ferris wheel*, Rockhampton, CQU Press, 1999.

If you have used a chapter in a book written by someone other than the editor

[6] BYRNE, J.: *'Disabilities in tertiary education'*, in ROWAN, L. AND MCNAMEE, J. (ed.) *Voices of a Margin*, Rockhampton, CQU Press, 1994.

Books with an anonymous or unknown author

[7] The University Encyclopedia, London: Roydon, Sentences, 1992.

Written course material, distance learning unit material

[8] DHANN, S.: CAE0001LWR Unit 5, Note taking skills from lectures and readings, Exeter, Department of Lifelong Learning, 2001.

If the author is unknown

[9] Department of Lifelong Learning, CAE0001LWR Unit 5, Note taking skills from lectures and readings, Exeter, Lecturer, 1999.

Government publications

[10] Department for Education and Employment (DfEE), Skills for life, the national strategy for improving adult literacy and numeracy skills, Nottingham, AfRR Publications, 2001.

Conference papers, Proceedings

[11] HART, G., ALBRECHT, M., BULL, R., MARSHALL, L.: *'Peer consultation: A professional development opportunity for nurses employed in rural settings'*, Infront Outback – Conference Proceedings, Australian Rural Health Conference, Toowoomba, pp. 203-215, 2010. doi:10555/al/article….

Newspaper articles

[12] CUMMING, F.: *'Tax-free savings push'*, Sunday Mail, 4 April, p. 1, 2005.

If the author is unknown

[13] *'Tax-free savings push'*, Sunday Mail, 4 April, p. 3, 2001.

Journal article

[14] TREBUNA, P., PETRIKOVÁ, A., PEKARČÍKOVÁ, M.: Influence of physical factors of working environment on worker's performance from ergonomic point of view, *Acta Simulatio*, Vol. 3, No. 3, pp. 1-9, 2017. doi:10555/al/article

Journal article from CD-ROM, electronic database, or journal

[15] SKARGREN, E.I., OBERG, B.: Predictive factors for 1-year outcome of low-back and neck pain in patients treated in primary care, Comparison between the treatment strategies chiropractic and physiotherapy, *Pain* [Electronic], Vol. 77, No. 2, pp. 201-208, Available: Elsevier/ScienceDirect/ O304-3959(98)00101-8, [10 March 1999].

Electronic mail (e-mail)

[16] JOHNSTON, R.: Access courses for women, e-mail to NIACE Lifelong Learning Mailing List (lifelong-learning@niace.org.uk), 22 Aug. [24 Aug 2001], 2001.

[17] ROBINSON, T.: Re: Information on course structure, e-mail to S. Dhann (s.dhann@exeter.ac.uk), 12 Jul. [13 Jul 2001], 2001.

Discussion list

[18] BERKOWITZ, P.: *Sussy's gravestone*, 1993, Mark Twain Forum [Online], 3 Apr, Available e-mail: TWAIN-L@yorkvm2.bitnet [3 Apr 1995].

World Wide Web page

[19] YOUNG, C.: English Heritage position statement on the Valletta Convention, [Online], Available: http://www.archaeol.freeuk.com/EHPostionStatement.htm [24 Aug 2001], 2001.

[20] Acta logistica, www.actalogistica.eu: Instructions for authors, [Online], Available: http://www.actalogistica.eu/index.php?stranka=forauthors [06 Feb 2018], 2014.

4 Conclusions

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References

[1] ADAIR, J.: *Effective time management, how to save time and spend it wisely*, London, Pan Books, 1998. doi:10555/al/article….

[2] MCCARTHY, P., HATCHER, C.: *Speaking persuasively, Making the most of your presentations*, Sydney, Allen and Unwin, 1996.

[3] FISHER, R., URY, W., PATTON, B.: *Getting to yes, negotiating an agreement without giving in*, 2nd ed., London, Century Business, 1991. doi:10555/al/article….

[4] BARNES, R.: *Successful study for degrees*, 2nd ed., London, Routledge, 1995.

[5] DANAHER, P.: (ed.) *Beyond the ferries wheel*, Rockhampton, CQU Press, 1999.

[6] BYRNE, J.: *'Disabilities in tertiary education'*, in ROWAN, L. AND MCNAMEE, J. (ed.) *Voices of a Margin*, Rockhampton, CQU Press, 1994.

[7] The University Encyclopedia, London: Roydon, Sentences, 1992.

[8] DHANN, S.: CAE0001LWR Unit 5, Note taking skills from lectures and readings, Exeter, Department of Lifelong Learning, 2001.

[9] Department of Lifelong Learning, CAE0001LWR Unit 5, Note taking skills from lectures and readings, Exeter, Lecturer, 1999.

[10] Department for Education and Employment (DfEE), Skills for life, the national strategy for improving adult literacy and numeracy skills, Nottingham, AfRR Publications, 2001.

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1. Make a new paragraph
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6. Apply *equation* style

$$(x+a)^n = \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k} \quad (1)$$

$$A = \pi r^2 \quad (2)$$

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Fig. 1. The header image of online-journals.org

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Item1	Item2	Item3	Item4	Item5
Test1*	.001	.004	.341	.01
Test2**	4.5	3.4	12	21
Test3	28	30	41	65

* Table footnote
** Table footnote

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    <last_name></last_name>
  </name>
</dataset>
```

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4 References

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[1] M. Kalogiannakis, S. Papadakis and A. Zourmpakis. (2021). Gamification in Science Education. A Systematic Review of the Literature. Education Sciences, 11(1), 22. https://doi.org/10.3390/educsci11010022

[2] S. Papadakis. (2020d). Apps to Promote Computational Thinking Concepts and Coding Skills in Children of Preschool and Pre-Primary School Age. In Mobile Learning Applications in Early Childhood Education, 101–121. IGI Global. https://doi.org/10.4018/978-1-7998-1486-3.ch006

[3] S. Aleanzi. (2021). Distance learning as a strategic option in Finland in confronting Covid19 crisis and its possibility to benefit from it in the state of Kuwait: a comparative study. Journal of Educational Studies and Research, 1(1), 252–276.
[4] P. Salovey. (2020a). COVID-19 – Moving courses online and other significant updates. [Community Update]. Yale University. https://covid19.yale.edu/university-announcements-about-covid-19/covid-19-moving-courses-online-andother-significant-updates.
[5] T. Nguyen. (2021). Boosting Motivation to Help Students to Overcome Online Learning Barriers in Covid-19 Pandemic: A Case study. International Journal of Interactive Mobile Technologies, 15(10), 4–20. https://doi.org/10.3991/ijim.v15i10.20319

5 Authors

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Article submitted 2020-10-19. Resubmitted 2021-11-18. Final acceptance 2020-11-27. Final version published as submitted by the authors.

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[2]Laboratory X, Institute X, Department X, Organization X, City X, State XX (only USA, Canada and Australia), Country

*** Correspondence:**
Corresponding Author
email@uni.edu

Keywords: keyword$_1$, keyword$_2$, keyword$_3$, keyword$_4$, keyword$_5$. (Min.5-Max. 8)

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[1] Department, Institute, City ZIP/Post code, Country.
[2] Department, Institute, City ZIP/Post code, Country.

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Abstract

The abstract should be a single, self-contained paragraph which summarises the manuscript. Ideally it will provide a brief context for the study, before describing the scientific approach and some key results in a qualitative manner. It should finish with a sentence to describe the implications for the field. The abstract must not include references, figures or tables.

Introduction

The introduction should be succinct, with no subheadings. Limited figures may be included only if they are truly introductory, and contain no new results.

Materials and Methods

The materials and methods section should contain sufficient detail so that all procedures can be repeated. It may be divided into headed subsections if several methods are described.

Results and Discussion

Subheadings

The results and discussion may be presented separately, or in one combined section, and may optionally be divided into headed subsections.

Advice on Equations

Equations should be provided in a text format, rather than as an image. Microsoft Word's equation tool is acceptable. Equations should be numbered consecutively, in round brackets, on the right-hand side of the page. They should be referred to as Equation 1, etc. in the main text.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \tag{1}$$

Advice on Figures

At the point of submission, authors may provide all figures embedded within the manuscript at a convenient break near to where they are first referenced or, alternatively, they may be provided as separate files. All figures should be cited in the paper in a consecutive order. Where possible, figures should be displayed on a white background. When preparing figures, consider that they can occupy either a single column (half page width) or two columns (full page width), and should be sized accordingly. All figures must have an accompanying caption which includes a title and, preferably, a brief description (see Figure 1).

Figure 1: Basic rocket ship design. The rocket ship is propelled with three thrusters and features a single viewing window. The nose cone is detachable upon impact.

The caption can also be used to explain any acronyms used in the figure, as well as providing information on scale bar sizes or other information that cannot be included in the figure itself. Plots that show error bars should include in the caption a description of how the error was calculated and the sample size (see Figure 2).

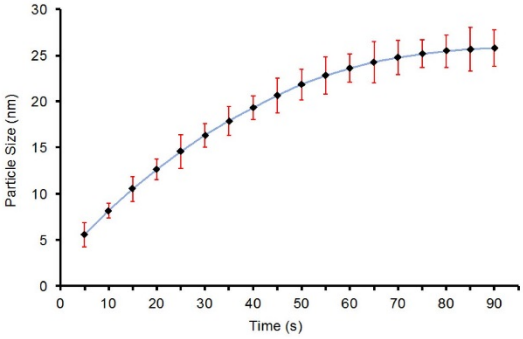

Figure 2: Plot of nanoparticle size with respect to time, recorded over a 90 s period. The error bars represent the standard deviation of measurements for 20 particles in five separate sample runs (n = 100).

If a figure consists of multiple panels, they should be ordered logically and labelled with lower case roman letters (i.e., a, b, c, etc.). If it is necessary to mark individual features within a panel (e.g., in Figure 3a), this may be done with lowercase Roman numerals, i, ii, iii, iv, etc. All labels should be explained in the caption. Panels should not be contained within boxes unless strictly necessary.

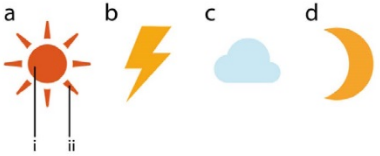

Figure 3: Representations of some common weather symbols. (a) The sun with (i) core, and (ii) rays. (b) Thunder bolt. (c) Cloud. (d) Moon.

Upon acceptance, authors will be asked to provide the figures as separate electronic files. At that stage, figures should be supplied in either vector art formats (Illustrator, EPS, WMF, FreeHand, CorelDraw, PowerPoint, Excel, etc.) or bitmap formats (Photoshop, TIFF, GIF, JPEG, etc.). Bitmap images should be of at least 300 dpi resolution, unless due to the limited resolution of a scientific instrument. If a bitmap image has labels, the image and labels should be embedded in separate layers.

Advice on Tables

Every table must have a descriptive title and, if numerical measurements are given, the units should be included in the column heading. Vertical rules should not be used (see Table 1). Tables should be cited consecutively in the text.

Table 1: Temperature and wildlife count in the three areas covered by the study.

Location	T [° C]	Turtles	Sharks	Octopuses	Starfish
Blue Lagoon	21.2	5	3	4	543
Regent's Canal	5.2	8	0	24	312
Shark Bay	12.8	4	7	9	122

Conclusions

The Conclusions section should clearly explain the main findings and implications of the work, highlighting its importance and relevance.

Data Availability

A data availability statement is compulsory for research articles and clinical trials. Here, authors must describe how readers can access the data underlying the findings of the study, giving links to online repositories and providing deposition codes where applicable. For more information on how to compose a data availability statement, including template examples, please visit: https://www.hindawi.com/research.data/#statement.

Conflicts of Interest

This section is compulsory. A competing interest exists when professional judgment concerning the validity of research is influenced by a secondary interest, such as financial gain. We require that our authors reveal any possible conflict of interest in their submitted manuscripts. If there is no conflict of interest, authors should state that "The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper."

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Funding Statement

Authors should state how the research and publication of their article was funded, by naming financially supporting bodies followed by any associated grant numbers in square brackets.

Acknowledgments

An Acknowledgements section is optional and may recognise those individuals who provided help during the research and preparation of the manuscript.

Supplementary Materials

If Supplementary Materials are provided (e.g., audio files, video clips or datasets) they should be described here. Note that authors are responsible for providing the final Supplementary Materials files that will be published along with the article, which are not modified by our production team. You should remember to reference the Supplementary Materials' contents at appropriate points within the manuscript. We recommend citing specific items, rather than referring to the Supplementary Materials in general, for example: "See Figures S1-S10 in the Supplementary Material for comprehensive image analysis."

References

References will be reformatted in house, there is no need to adhere to a specific style at the point of submission. Authors are responsible for ensuring that the information in each reference is complete and accurate. All citations in the text must be numbered consecutively in square brackets, before any punctuation, for example, "as discussed by Smith [1]," and "as discussed elsewhere [2,3]." All uncited references will be automatically removed. The references should not contain footnotes. For your information, our citation style is:

[x] Author initials and surname, "Title in sentence style," Journal title, vol. (volume number), no. (issue number), pp. (page numbers separated by an en-dash), Year.

For example:

[1] J. D. Watson and F. H. C. Crick, "A structure for deoxyribose nucleic acid," *Nature*, vol. 171, no. 4356, pp. 737–738, 1953.

12.4. Subject Areas of the Scopus Database

1	Accounting	Учет
2	Acoustics and Ultrasonics	Акустика и ультразвуки
3	Advanced and Specialized Nursing	Расширенный и специализированный уход
4	Aerospace Engineering	Аэрокосмическая промышленность
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8	Algebra and Number Theory	Алгебра и теория чисел
9	Analysis	Анализ
10	Analytical Chemistry	Аналитическая химия
11	Anatomy	Анатомия
12	and Optics	Оптика
13	Anesthesiology and Pain Medicine	Анестезиология и болевая медицина
14	Animal Science and Zoology	Наука о животных и зоология
15	Anthropology	Антропология
16	Applied Mathematics	Прикладная математика
17	Applied Microbiology and Biotechnology	Прикладная микробиология и биотехнология
18	Applied Psychology	Практическая психология
19	Aquatic Science	Водная наука
20	Archeology	Археология
21	Archeology (arts and humanities)	Археология (искусство и гуманитарные науки)
22	Architecture	Архитектура
23	Artificial Intelligence	Искусственный интеллект
24	Arts and Humanities (miscellaneous)	Искусство и гуманитарные науки (разное)

25	Assessment and Diagnosis	Оценка и диагностика
26	Astronomy and Astrophysics	Астрономия и астрофизика
27	Atmospheric Science	Наука об атмосфере
28	Atomic and Molecular Physics	Атомная и молекулярная физика
29	Automotive Engineering	Автомобильный инжиниринг
30	Behavior and Systematics	Поведение и систематика
31	Behavioral Neuroscience	Биологическая психология
32	Biochemistry	Биохимия
33	Biochemistry (medical)	Биохимия (медицинские)
34	Bioengineering	Биоинженерия
35	Biological Psychiatry	Биологическая психиатрия
36	Biomaterials	Биоматериалы
37	Biomedical Engineering	Биомедицинская инженерия
38	Biophysics	Биофизика
39	Biotechnology	Биотехнология
40	Building and Construction	Строительство
41	Business	Бизнес
42	Business and International Management	Бизнес и менеджмент внешнеэкономической деятельности
43	Cancer Research	Исследования рака
44	Cardiology and Cardiovascular Medicine	Кардиология и сердечно-сосудистая медицина
45	Care Planning	Планирование медицинского ухода
46	Catalysis	Катализ
47	Cell Biology	Цитология
48	Cellular and Molecular Neuroscience	Клеточная и молекулярная неврология
49	Ceramics and Composites	Керамика и композиционные материалы

50	Chemical Engineering (miscellaneous)	Химические технологии (разное)
51	Chemical Health and Safety	Химия, здоровье и безопасность
52	Chemistry (miscellaneous)	Химия (разное)
53	Chiropractics	Хиропрактика (медицина)
54	Civil and Structural Engineering	Гражданская и строительная техника
55	Classics	Классика
56	Clinical Biochemistry	Клиническая биохимия
57	Clinical Psychology	Клиническая психология
58	Coatings and Films	Покрытия и пленки
59	Cognitive Neuroscience	Когнитивная нейронаука
60	Colloid and Surface Chemistry	Коллоидная химия и химия поверхности
61	Communication	Связи
62	Community and Home Care	Объединение и домашний уход
63	Complementary and Alternative Medicine	Комплементарная и альтернативная медицина
64	Complementary and Manual Therapy	Дополнительная и мануальная терапия
65	Computational Mathematics	Вычислительная математика
66	Computational Mechanics	Вычислительная механика
67	Computational Theory and Mathematics	Теория вычислений и математика
68	Computer Graphics and Computer-Aided Design	Компьютерная графика и системы автоматизированного проектирования
69	Computer Networks and Communications	Компьютерные сети и коммуникации
70	Computer Science (miscellaneous)	Компьютерные науки (разное)
71	Computer Science Applications	Компьютерная наука

72	Computer Vision and Pattern Recognition	Компьютерное зрение и распознавание образов
73	Computers in Earth Sciences	Компьютеры в науке о земле
74	Condensed Matter Physics	Физика конденсированных сред
75	Conservation	Охрана окружающей среды
76	Control and Optimization	Контроль и оптимизация
77	Control and Systems Engineering	Системы управления и инженерия
78	Critical Care and Intensive Care Medicine	Интенсивный и критический медицинский уход
79	Critical Care Nursing	Критический уход за больными
80	Cultural Studies	Культурология
81	Decision Sciences (miscellaneous)	Принятие решений (разное)
82	Demography	Демография
83	Dental Assisting	Стоматологическая помощь
84	Dental Hygiene	Гигиена полости рта
85	Dentistry (miscellaneous)	Стоматология (разное)
86	Dermatology	Дерматология
87	Development	Развитие
88	Developmental and Educational Psychology	Возрастная и педагогическая психология
89	Developmental Biology	Биология развития
90	Developmental Neuroscience	Развитие неврологии
91	Diabetes and Metabolism	Диабет и метаболизм
92	Discrete Mathematics and Combinatorics	Дискретная математика и комбинаторика
93	Drug Discovery	Медицинские открытия
94	Drug Guides	Гид по наркотикам
95	Earth and Planetary Sciences (miscellaneous)	Земля и планеты (разное)

96	Earth-Surface Processes	Поверхность земли и процессы
97	Ecological Modeling	Экологическое моделирование
98	Ecology	Экология
99	Econometrics and Finance (miscellaneous)	Эконометрика и финансы (разное)
100	Economic Geology	Экономическая геология
101	Economics	Экономика
102	Economics and Econometrics	Экономика и эконометрика
103	Education	Образование
104	Electrical and Electronic Engineering	Электротехника и электроника
105	Electrochemistry	Электрохимия
106	Electronic	Электроника
107	Embryology	Эмбриология
108	Emergency Medical Services	Неотложная медицинская помощь
109	Emergency Medicine	Реанимация
110	Emergency Nursing	Медицинский уход
111	Endocrine and Autonomic Systems	Эндокринные и автономные системы
112	Endocrinology	Эндокринология
113	Energy (miscellaneous)	Энергия (разное)
114	Energy Engineering and Power Technology	Энергетическое машиностроение и мощные технологии
115	Engineering (miscellaneous)	Инженерное дело (разное)
116	Environmental and Occupational Health	Экология и гигиена
117	Environmental Chemistry	Химия окружающей среды
118	Environmental Engineering	Инженерная защита окружающей среды
119	Environmental Science (miscellaneous)	Наука об окружающей среде (разное)

120	Epidemiology	Эпидемиология
121	Equine	Лошади
122	Ethics and Legal Aspects	Этика и правовые аспекты
123	Evolution	Эволюция
124	Experimental and Cognitive Psychology	Экспериментальная и когнитивная психология
125	Family Practice	Семейная практика
126	Filtration and Separation	Фильтрация и сепарация
127	Finance	Финансы
128	Fluid Flow and Transfer Processes	Поток жидкости и процессы переноса
129	Food Animals	Животные и их питание
130	Food Science	Наука о питании
131	Forestry	Лесное хозяйство
132	Fuel Technology	Технология топлива
133	Fundamentals and Skills	Основы и навыки
134	Gastroenterology	Гастроэнтерология
135	Gender Studies	Гендерные исследования
136	Genetics	Генетика
137	Genetics (clinical)	Генетика (клиническая)
138	Genetics and Molecular Biology (miscellaneous)	Генетика и молекулярная биология (разное)
139	Geochemistry and Petrology	Геохимия и петрология
140	Geography	География
141	Geology	Геология
142	Geometry and Topology	Геометрия и топология
143	Geophysics	Геофизика
144	Geotechnical Engineering and Engineering Geology	Инженерно-геологическая и инженерная геология
145	Geriatrics and Gerontology	Гериатрия и геронтология
146	Gerontology	Геронтология

147	Global and Planetary Change	Глобальные и планетарные изменения
148	Hardware and Architecture	Оборудование и архитектура
149	Health	Здравоохранение
150	Health (social science)	Здоровье (социальные науки)
151	Health Informatics	Информатика здоровья
152	Health Information Management	Управление медицинской информацией
153	Health Policy	Политика в области здравоохранения
154	Health Professions (miscellaneous)	Медицинские профессии (разное)
155	Hematology	Гематология
156	Hepatology	Гепатология
157	Histology	Гистология
158	History	История
159	History and Philosophy of Science	История и философия науки
160	Horticulture	Садоводство
161	Human Factors and Ergonomics	Человеческий фактор и эргономика
162	Human-Computer Interaction	Взаимодействие человека и машины
163	Immunology	Иммунология
164	Immunology and Allergy	Иммунология и аллергия
165	Immunology and Microbiology (miscellaneous)	Иммунология и микробиология (разное)
166	Industrial and Manufacturing Engineering	Промышленные и машиностроительные технологии
167	Industrial Relations	Трудовые отношения
168	Infectious Diseases	Инфекционные болезни
169	Information Systems	Информационные системы

170	Information Systems and Management	Информационные системы и управление
171	Inorganic Chemistry	Неорганическая химия
172	Insect Science	Наука о насекомых
173	Instrumentation	Измерительные приборы
174	Internal Medicine	Терапия
175	Issues	Проблемные вопросы
176	Language and Linguistics	Языкознание и лингвистика
177	Law	Закон, право, юридические науки
178	Leadership and Management	Лидерство и менеджмент
179	Leisure and Hospitality Management	Отдых и гостиничный менеджмент
180	Library and Information Sciences	Библиотека и информационные науки
181	Life-span and Life-course Studies	Продолжительность жизни и жизненного цикла
182	Linguistics and Language	Лингвистика и языкознание
183	Literature and Literary Theory	Литература и литературоведение
184	Logic	Логика
185	LPN and LVN	Лицензирование медицинских работников
186	Management	Управление
187	Management and Accounting (miscellaneous)	Управление и учет (разное)
188	Management Information Systems	Информационные системы управления
189	Management of Technology and Innovation	Управление технологиями и инновациями
190	Management Science and Operations Research	Наука управления и исследование операций
191	Marketing	Маркетинг
192	Materials Chemistry	Химические материалы
193	Materials Science (miscellaneous)	Материаловедение (разное)

194	Maternity and Midwifery	Материнство и акушерство
195	Mathematical Physics	Математическая физика
196	Mathematics (miscellaneous)	Математика (разное)
197	Mechanical Engineering	Машиностроение
198	Mechanics of Materials	Механика материалов
199	Media Technology	Технология медиа
200	Medical and Surgical Nursing	Медико-хирургический уход
201	Medical Assisting and Transcription	Медицинская помощь
202	Medical Laboratory Technology	Медицинская, лабораторная техника
203	Medicine (miscellaneous)	Медицина (разное)
204	Metals and Alloys	Металлы и сплавы
205	Microbiology	Микробиология
206	Microbiology (medical)	Микробиология (медицинская)
207	Modeling and Simulation	Моделирование и симуляция
208	Molecular Biology	Молекулярная биология
209	Molecular Medicine	Молекулярная медицина
210	Monitoring	Мониторинг
211	Multidisciplinary	Многопрофильный
212	Museology	Музейное дело
213	Music	Музыка
214	Nanoscience and Nanotechnology	Нанонаука и нанотехнологии
215	Nature and Landscape Conservation	Сохранение природы и ландшафта
216	Nephrology	Нефрология
217	Neurology	Неврология
218	Neurology (clinical)	Неврология (клиническая)
219	Neuropsychology and Physiological Psychology	Нейропсихология и физиологическая психология

220	Neuroscience (miscellaneous)	Неврология (разное)
221	Nuclear and High Energy Physics	Ядерная физика и физика высоких энергий
222	Nuclear Energy and Engineering	Атомная энергетика и техника
223	Nuclear Medicine and Imaging	Ядерная медицина
224	Numerical Analysis	Численный анализ
225	Nurse Assisting	Медсестринская помощь
226	Nursing (miscellaneous)	Уход (разное)
227	Nutrition and Dietetics	Питание и диетология
228	Obstetrics and Gynecology	Акушерство и гинекология
229	Occupational Therapy	Трудотерапия
230	Ocean Engineering	Подводная техника
231	Oceanography	Океанография
232	Oncology	Онкология
233	Oncology (nursing)	Онкология (уход)
234	Ophthalmology	Офтальмология
235	Optical and Magnetic Materials	Оптические и магнитные материалы
236	Optometry	Оптометрия
237	Oral Surgery	Челюстно-лицевая хирургия
238	Organic Chemistry	Органическая химия
239	Organizational Behavior and Human Resource Management	Организационное поведение и управление человеческими ресурсами
240	Orthodontics	Ортодонтия
241	Orthopedics and Sports Medicine	Ортопедия и спортивная медицина
242	Otorhinolaryngology	Оториноларингология
243	Paleontology	Палеонтология
244	Parasitology	Паразитология
245	Pathology and Forensic Medicine	Патология и судебная медицина

246	Pediatrics	Педиатрия
247	Perinatology and Child Health	Перинатология и здоровье детей
248	Periodontics	Пародонтология
249	Pharmaceutical Science	Фармацевтическая наука
250	Pharmacology	Фармакология
251	Pharmacology (medical)	Фармакология (медицинская)
252	Pharmacology (nursing)	Фармакология (уход)
253	Pharmacy	Аптека
254	Philosophy	Философия
255	Physical and Theoretical Chemistry	Физическая и теоретическая химия
256	Physical Therapy	Физиотерапия
257	Physics and Astronomy (miscellaneous)	Физика и астрономия (разное)
258	Physiology	Физиология
259	Physiology (medical)	Физиология (медицинская)
260	Planning and Development	Планирование и развитие
261	Plant Science	Наука о заводах
262	Podiatry	Заболевания стопы, лодыжки и нижних конечностей
263	Policy and Law	Политика и право
264	Political Science and International Relations	Политология и международные отношения
265	Pollution	Загрязнение
266	Polymers and Plastics	Полимеры и пластмассы
267	Probability and Uncertainty	Вероятность и неопределенность
268	Process Chemistry and Technology	Химические процессы и технологии
269	Psychiatric Mental Health	Психиатрия психического здоровья

270	Psychiatry and Mental Health	Психиатрия и психическое здоровье
271	Psychology (miscellaneous)	Психология (разное)
272	Public Administration	Государственное управление
273	Public Health	Здравоохранение
274	Pulmonary and Respiratory Medicine	Легочная и респираторная медицина
275	Radiation	Излучение
276	Radiological and Ultrasound Technology	Радиологические и ультразвуковые технологии
277	Radiology	Радиология
278	Rehabilitation	Реабилитация
279	Reliability and Quality	Надежность и качество
280	Religious Studies	Религиоведение
281	Renewable Energy	Возобновляемые источники энергии
282	Reproductive Medicine	Репродуктивная медицина
283	Research and Theory	Исследования и теория
284	Review and Exam Preparation	Обзор и подготовка к экзаменам
285	Reviews and References (medical)	Отзывы и ссылки (медицина)
286	Rheumatology	Ревматология
287	Risk	Риск
288	Safety	Безопасность
289	Safety Research	Исследование безопасности
290	Sensory Systems	Сенсорные системы
291	Signal Processing	Обработка сигнала
292	Small Animals	Маленькие животные
293	Social Psychology	Социальная психология
294	Social Sciences (miscellaneous)	Социальные науки (разное)
295	Social Work	Социальная работа

296	Sociology and Political Science	Социология и политология
297	Software	Программное обеспечение
298	Soil Science	Почвоведение
299	Space and Planetary Science	Пространство и планетарные науки
300	Spectroscopy	Спектроскопия
301	Speech and Hearing	Слух и речь
302	Sports Science	Спортивная наука
303	Sports Therapy and Rehabilitation	Спортивная терапия и реабилитация
304	Statistical and Nonlinear Physics	Статистика и нелинейная физика
305	Statistics	Статистика
306	Statistics and Probability	Статистика и теория вероятности
307	Strategy and Management	Стратегия и управление
308	Stratigraphy	Стратиграфия
309	Structural Biology	Структурная биология
310	Surfaces	Поверхности
311	Surfaces and Interfaces	Наружные и внутренние поверхности
312	Surgery	Хирургия
313	Sustainability and the Environment	Устойчивость и окружающая среда
314	Theoretical Computer Science	Теоретическая информатика
315	Tourism	Туризм
316	Toxicology	Токсикология
317	Toxicology and Mutagenesis	Токсикология и мутагенез
318	Toxicology and Pharmaceutics (miscellaneous)	Токсикология и фармацевтика (разное)
319	Transplantation	Трансплантация
320	Transportation	Транспорт

321	Urban Studies	Городские исследования
322	Urology	Урология
323	Veterinary (miscellaneous)	Ветеринария (разное)
324	Virology	Вирусология
325	Visual Arts and Performing Arts	Изобразительное искусство и исполнительное искусство
326	Waste Management and Disposal	Управление отходами и утилизация
327	Water Science and Technology	Наука о воде и техника

12.5. Subject Areas of the Web of Science Database

1	Accounting & finance	Бухгалтерский учет и финансы
2	Acoustics	Акустика
3	Aerospace engineering	Аэрокосмическая техника
4	Agricultural chemistry	Агрохимия
5	Agricultural economics & policy	Экономика сельского хозяйства и политика
6	Agricultural engineering	Агротехника
7	Agriculture, dairy & animal science	Сельское хозяйство, молочные продукты и зоотехния
8	Agriculture, multidisciplinary	Сельское хозяйство, междисциплинарный
9	Agriculture/agronomy	Сельское хозяйство, агрономия
10	Agronomy	Агрономия
11	Ai, robotics & automatic control	Искусственный интеллект, робототехника и автоматическое управление
12	Allergy	Аллергия
13	Anatomy & morphology	Анатомия и морфология
14	Andrology	Андрология
15	Anesthesia & intensive care	Анестезия и интенсивная терапия
16	Anesthesiology	Анестезиология
17	Animal & plant science	Животные и растения
18	Animal sciences	Наука о животных
19	Anthropology	Антропология
20	Applied physics/condensed matter/materials science	Прикладная физика, конденсированные среды, материаловедение
21	Aquatic sciences	Водные науки
22	Archaeology	Археология
23	Architecture	Архитектура

24	Area studies	Страноведение
25	Art	Искусство
26	Art & architecture	Искусство и архитектура
27	Asian studies	Азиатские исследования
28	Astronomy & astrophysics	Астрономия и астрофизика
29	Audiology & speech-language pathology	Аудиология и логопедия
30	Automation & control systems	Системы автоматизации и управления
31	Behavioral sciences	Поведенческие науки
32	Biochemical research methods	Биохимические методы исследования
33	Biochemistry & biophysics	Биохимия и биофизика
34	Biochemistry & molecular biology	Биохимия и молекулярная биология
35	Biodiversity conservation	Сохранение биоразнообразия
36	Biology	Биология
37	Biophysics	Биофизика
38	Biotechnology & applied microbiology	Биотехнологии и прикладная микробиология
39	Business	Бизнес
40	Business & economics	Бизнес и экономика
41	Business law & reviews	Предпринимательское право
42	Business, finance	Бизнес, финансы
43	Cardiac & cardiovascular systems	Сердечная и сердечно-сосудистая система
44	Cardiovascular & hematology research	Сердечно-сосудистая система и гематология
45	Cardiovascular & respiratory systems	Сердечно-сосудистая и дыхательная система
46	Cell & developmental biology	Клетки и биология развития
47	Cell & tissue engineering	Клетки и тканевая инженерия
48	Cell biology	Цитология

49	Chemical engineering	Химическое машиностроение
50	Chemistry	Химия
51	Chemistry & analysis	Химия и анализ
52	Chemistry & physics, pure & applied	Химия и физика, теория и применение
53	Chemistry, analytical	Химия, аналитическая
54	Chemistry, applied	Химия, прикладная
55	Chemistry, inorganic & nuclear	Химия, неорганическая и ядерная
56	Chemistry, medicinal	Химия, лекарственная
57	Chemistry, multidisciplinary	Химия, междисциплинарная
58	Chemistry, organic	Химия, органическая
59	Chemistry, physical	Химия, физическая
60	Civil engineering	Гражданское строительство
61	Classical studies	Классические исследования
62	Classics	Классика
63	Clinical immunology & infectious disease	Клиническая иммунология и инфекционные заболевания
64	Clinical neurology	Клиническая неврология
65	Clinical psychology & psychiatry	Клиническая психология и психиатрия
66	Communication	Связи
67	Computer science & engineering	Информатика и инжиниринг
68	Computer science, artificial intelligence	Компьютерные науки, искусственный интеллект
69	Computer science, cybernetics	Информатика, кибернетика
70	Computer science, hardware & architecture	Информатика, аппаратные средства и архитектура
71	Computer science, information systems	Информатика, информационные системы
72	Computer science, interdisciplinary applications	Информатика, междисциплинарные приложения

73	Computer science, software engineering	Информатика, программная инженерия
74	Computer science, technology & applications	Информатика, технология и приложения
75	Computer science, theory & methods	Информатика, теория и методы
76	Computer technology & information systems	Компьютерные технологии и информационные системы
77	Construction & building technology	Строительство и строительная техника
78	Criminology & penology	Криминология и пенология
79	Critical care medicine	Реаниматология
80	Crystallography	Кристаллография
81	Cultural studies	Культура, исследования
82	Dance	Танец
83	Demography	Демография
84	Dentistry, oral surgery & medicine	Стоматология, челюстно-лицевая хирургия и медицина
85	Dentistry/oral surgery & medicine	Стоматология, хирургическая стоматология и медицина
86	Dermatology	Дерматология
87	Developmental biology	Биология развития
88	Earth sciences	Наука о Земле
89	Ecology	Экология
90	Economics	Экономика
91	Education	Образование
92	Education & educational research	Образование и исследования в области образования
93	Education, scientific disciplines	Образование, научные дисциплины
94	Education, special	Образование, специальное
95	Electrical and electronics engineering	Электрика и электроника
96	Electrochemistry	Электрохимия

97	Electronics & electrical engineering	Электроника и электротехника
98	Emergency medicine	Неотложная медицинская помощь
99	Employee relations & human resources	Трудовые отношения и человеческие ресурсы
100	Endocrinology & metabolism	Эндокринология и метаболизм
101	Endocrinology, metabolism & nutrition	Эндокринология, метаболизм и питание
102	Endocrinology, nutrition & metabolism	Эндокринология, питание и обмен веществ
103	Energy & fuels	Энергия и топливо
104	Engineering management/general	Управление проектированием, общее
105	Engineering mathematics	Инженерная математика
106	Engineering, aerospace	Машиностроение, аэрокосмическое
107	Engineering, biomedical	Машиностроение, биомедицинское
108	Engineering, chemical	Машиностроение, химическое
109	Engineering, civil	Машиностроение, гражданское
110	Engineering, electrical & electronic	Техника, электротехника и электроника
111	Engineering, environmental	Машиностроение, окружающая среда
112	Engineering, geological	Инженерно-геологические
113	Engineering, industrial	Инженерные, промышленные
114	Engineering, manufacturing	Проектирование, изготовление
115	Engineering, marine	Машиностроение, морское
116	Engineering, mechanical	Машиностроение, механическое
117	Engineering, multidisciplinary	Машиностроение, междисциплинарное
118	Engineering, ocean	Машиностроение, океан

119	Engineering, petroleum	Машиностроение, нефть
120	Entomology	Энтомология
121	Entomology/pest control	Энтомология, борьба с вредителями
122	Environment/ecology	Окружающая среда, экология
123	Environmental engineering & energy	Инженерная защита окружающей среды и энергии
124	Environmental medicine & public health	Экологическая медицина и здравоохранение
125	Environmental sciences	Наука об окружающей среде
126	Environmental studies	Экологические исследования
127	Environmental studies, geography & development	Экологические исследования, география и развитие
128	Ergonomics	Эргономика
129	Ethics	Этика
130	Ethnic studies	Этнические исследования
131	Evolutionary biology	Эволюционная биология
132	Experimental biology	Экспериментальная биология
133	Family studies	Исследования семьи
134	Film, radio, television	Кино, радио, телевидение
135	Fisheries	Рыболовство
136	Folklore	Фольклор
137	Food science & technology	Пищевые науки и технологии
138	Food science/nutrition	Пищевые науки, питание
139	Forestry	Лесное хозяйство
140	Gastroenterology & hepatology	Гастроэнтерология и гепатология
141	General	Генеральный
142	General & internal medicine	Общая и внутренняя медицина

143	Genetics & heredity	Генетика и наследственность
144	Geochemistry & geophysics	Геохимия и геофизика
145	Geography	География
146	Geography, physical	География, физическая
147	Geological, petroleum & mining engineering	Геологическая, нефтяная и горная техника
148	Geology	Геология
149	Geosciences, multidisciplinary	Наука о Земле, междисциплинарный
150	Geriatrics & gerontology	Гериатрия и геронтология
151	Gerontology	Геронтология
152	Health care sciences & services	Здравоохранение, наука и услуги
153	Health policy & services	Политика и услуги здравоохранения
154	Hematology	Гематология
155	History	История
156	History & philosophy of science	История и философия науки
157	History of social sciences	История социальных наук
158	Horticulture	Садоводство
159	Hospitality, leisure, sport & tourism	Гостеприимство, отдых, спорт и туризм
160	Humanities, multidisciplinary	Гуманитарные, многопрофильный
161	Imaging science & photographic technology	Наука о изображениях и фотографические технологии
162	Immunology	Иммунология
163	Industrial relations & labor	Производственные отношения и труд
164	Infectious diseases	Инфекционные заболевания
165	Information science & library science	Информатика и научная библиотека

166	Information technology & communications systems	Системы связи информационных технологий
167	Inorganic & nuclear chemistry	Неорганическая и ядерная химия
168	Instrumentation & measurement	Приборы и измерения
169	Instruments & instrumentation	Инструменты и приборы
170	Integrative & complementary medicine	Интегративная и комплементарная медицина
171	International relations	Международные связи
172	Language & linguistics	Язык и лингвистика
173	Law	Право и закон
174	Library & information sciences	Библиотека и информационные науки
175	Limnology	Лимнология
176	Linguistics	Лингвистика
177	Literary reviews	Литературные обзоры
178	Literary theory & criticism	Литературная теория и критика
179	Literature	Литература
180	Literature, african, australian, canadian	Литература, африканская, австралийская, канадская
181	Literature, american	Литература, американская
182	Literature, british isles	Литература, Британские острова
183	Literature, german, dutch, scandinavian	Литература, немецкая, голландская, скандинавская
184	Literature, romance	Литература, роман
185	Literature, slavic	Литература, славянская
186	Logic	Логика
187	Management	Управление
188	Management & organization	Управление и организация
189	Marine & freshwater biology	Биология морской и пресной воды

190	Marketing & business communication	Маркетинг и деловое общение
191	Materials science & engineering	Материаловедение и инженерия
192	Materials science, biomaterials	Материаловедение, биоматериалы
193	Materials science, ceramics	Материаловедения, керамика
194	Materials science, characterization & testing	Материаловедение, характеристики и тестирование
195	Materials science, coatings & films	Материаловедение, покрытия и записи
196	Materials science, composites	Материаловедение, композиты
197	Materials science, multidisciplinary	Материаловедение, междисциплинарный
198	Materials science, paper & wood	Материаловедение, бумага и дерево
199	Materials science, textiles	Материаловедения, текстиль
200	Mathematical & computational biology	Математическая и вычислительная биология
201	Mathematics	Математика
202	Mathematics, applied	Математика, прикладная
203	Mathematics, interdisciplinary applications	Математика, междисциплинарные приложения
204	Mechanical engineering	Машиностроение
205	Mechanics	Механика
206	Medical ethics	Медицинская этика
207	Medical informatics	Медицинская информатика
208	Medical laboratory technology	Медицинская лаборатория, технологии
209	Medical research, diagnosis & treatment	Медицинские исследования, диагностика и лечение
210	Medical research, general topics	Медицинские исследования, общие темы
211	Medical research, organs & systems	Медицинские исследования, органы и системы

212	Medicine, general & internal	Медицина, общая и внутренняя
213	Medicine, legal	Медицина, юридическая
214	Medicine, research & experimental	Медицина, научные и экспериментальные исследования
215	Medieval & renaissance studies	Средневековые и ренессансные исследования
216	Metallurgy	Металлургия
217	Metallurgy & metallurgical engineering	Металлургия и инженерия
218	Meteorology & atmospheric sciences	Метеорология и наука об атмосфере
219	Microbiology	Микробиология
220	Microscopy	Микроскопия
221	Mineralogy	Минералогия
222	Mining & mineral processing	Добыча и обогащение полезных ископаемых
223	Molecular biology & genetics	Молекулярная биология и генетика
224	Multidisciplinary	Многопрофильные
225	Multidisciplinary sciences	Многопрофильные науки
226	Music	Музыка
227	Mycology	Микология
228	Nanoscience & nanotechnology	Нанонауки и нанотехнологии
229	Neuroimaging	Нейровизуализация
230	Neurology	Неврология
231	Neurosciences	Нейронауки
232	Neurosciences & behavior	Нейронауки и поведение
233	Nuclear engineering	Ядерная техника
234	Nuclear science & technology	Ядерная наука и технологии
235	Nursing	Уход
236	Nutrition & dietetics	Питание и диетология
237	Obstetrics & gynecology	Акушерство и гинекология

238	Oceanography	Океанография
239	Oncogenesis & cancer research	Онкогенез и раковые исследования
240	Oncology	Онкология
241	Operations research & management science	Исследование операций и менеджмент
242	Ophthalmology	Офтальмология
243	Optics	Оптика
244	Optics & acoustics	Оптика и акустика
245	Optics & laser research & technology	Оптика, лазерные исследования и технологии
246	Organic chemistry/polymer science	Органическая химия, полимеры
247	Ornithology	Орнитология
248	Orthopedics	Ортопедия
249	Orthopedics, rehabilitation & sports medicine	Ортопедия, реабилитация и спортивная медицина
250	Otolaryngology	Отоларингология
251	Otorhinolaryngology	Оториноларингология
252	Paleontology	Палеонтология
253	Parasitology	Паразитология
254	Pathology	Патология
255	Pediatrics	Педиатрия
256	Performing arts	Исполнительские виды искусства
257	Peripheral vascular disease	Заболевания периферических сосудов
258	Pharmacology & pharmacy	Фармакология и фармация
259	Pharmacology & toxicology	Фармакология и токсикология
260	Pharmacology/toxicology	Фармакология, токсикология
261	Philosophy	Философия
262	Physical chemistry/chemical physics	Физическая химия, химическая физика
263	Physics	Физика

264	Physics, applied	Физика, прикладная
265	Physics, atomic, molecular & chemical	Физика, атомная, молекулярная и химическая
266	Physics, condensed matter	Физика, конденсированное вещество
267	Physics, fluids & plasmas	Физика, жидкости и плазмы
268	Physics, mathematical	Физика, математическая
269	Physics, multidisciplinary	Физика, междисциплинарная
270	Physics, nuclear	Физика, ядерная
271	Physics, particles & fields	Физика, частицы и поля
272	Physiology	Физиология
273	Planning & development	Планирование и развитие
274	Plant sciences	Наука о растениях
275	Poetry	Поэзия
276	Political science	Политология
277	Political science & public administration	Политология и государственное управление
278	Political science, public admin & development	Политология, государственное администрирование и развитие
279	Polymer science	Наука о полимерах
280	Primary health care	Первая медицинская помощь
281	Psychiatry	Психиатрия
282	Psychology	Психология
283	Psychology, applied	Психология, прикладная
284	Psychology, biological	Психология, биологическая
285	Psychology, clinical	Психология, клиническая
286	Psychology, developmental	Психология, развития
287	Psychology, educational	Психология, образовательная
288	Psychology, experimental	Психология, экспериментальная

289	Psychology, mathematical	Психология, математическая
290	Psychology, multidisciplinary	Психология, междисциплинарная
291	Psychology, psychoanalysis	Психология, психоанализ
292	Psychology, social	Психология, социальная
293	Public administration	Государственное управление
294	Public health & health care science	Общественное здравоохранение и медико-санитарная помощь
295	Public, environmental & occupational health	Общество, окружающая среда и охрана здоровья
296	Radiology, nuclear medicine & imaging	Радиология, ядерная медицина и томография
297	Radiology, nuclear medicine & medical imaging	Радиология, ядерная медицина и медицинская томография
298	Rehabilitation	Реабилитация
299	Religion	Религия
300	Religion & theology	Религия и теология
301	Remote sensing	Дистанционное зондирование
302	Reproductive biology	Репродуктивная биология
303	Reproductive medicine	Репродуктивная медицина
304	Research/laboratory medicine & medical technology	Лабораторная медицина и медицинская техника, исследования
305	Respiratory system	Дыхательная система
306	Rheumatology	Ревматология
307	Robotics	Робототехника
308	Semiconductors & solid state materials technology	Полупроводники и полупроводниковые технологии материалов
309	Signal processing/circuits & systems	Обработки сигналов, схемы и системы
310	Social issues	Социальные вопросы

311	Social sciences, biomedical	Социальные науки, биомедицинские
312	Social sciences, interdisciplinary	Общественные науки, междисциплинарный
313	Social sciences, mathematical methods	Социальные науки, математические методы
314	Social work	Социальная работа
315	Social work & social policy	Социальная работа и социальная политика
316	Sociology	Социология
317	Sociology & social sciences	Социология и социальные науки
318	Soil science	Почвоведение
319	Space science	Космическая наука
320	Spectroscopy	Спектроскопия
321	Spectroscopy/instrumentation/ analytical sciences	Спектроскопия, приборы, аналитические науки
322	Sport sciences	Спортивные науки
323	Statistics & probability	Статистика и вероятность
324	Substance abuse	Злоупотребление алкоголем или наркотиками
325	Surgery	Хирургия
326	Technology r & d/management	Технология исследований и разработки, управление
327	Telecommunications	Связь
328	Telecommunications technology	Телекоммуникационные технологии
329	Theater	Театр
330	Thermodynamics	Термодинамика
331	Toxicology	Токсикология
332	Transplantation	Трансплантация
333	Transportation	Транспорт
334	Transportation science & technology	Транспорт, наука и технология
335	Tropical medicine	Тропическая медицина
336	Urban studies	Городские исследования

337	Urology & nephrology	Урология и нефрология
338	Veterinary medicine/animal health	Ветеринария, здоровье животных
339	Veterinary sciences	Ветеринарные науки
340	Virology	Вирусология
341	Water resources	Водные ресурсы
342	Womens studies	Исследования женщин
343	Zoology	Зоология

12.6. Subject Areas of the SSCI and SCIE Subdatabases of Web of Science

SOCIAL SCIENCES CITATION INDEX

1. **Anthropology**

Category Description:

Anthropology covers resources relating to the scientific study of human beings, especially their origin, distribution, behavior, as well as their physical, social and cultural characteristics and development. This category, by definition, borrows from related resources in history, archaeology, and several other social sciences.

2. **Area Studies**

Category Description:

Area Studies covers resources concerned with the social, economic, political, and military character of a geographical area or region, such as Africa, Asia, Latin America, the Middle East, Pacific Rim, etc. The resources in this category tend to be historical and interdisciplinary in nature.

3. **Business**

Category Description:

This category covers resources concerned with all aspects of business and the business world. These may include marketing and advertising, forecasting, planning, administration, organizational studies, compensation, strategy, retailing, consumer research, and management. Also covered are resources relating to business history and business ethics.

4. **Business, Finance**

Category Description:

Business, Finance covers resources primarily concerned with financial and economic correlations, accounting, financial management, investment strategies, the international monetary system, insurance, taxation, and banking.

5. **Cultural Studies**

Category Description:

Cultural studies covers resources concerned with the interdisciplinary, theoretical-critical study of modern cultural phenomena, practices and products in their sociopolitical, historical and geographical contexts.

6. **Communication**

Category Description:

Communication covers resources on the study of the verbal and non-verbal exchange of ideas and information. Included here are communication theory, practice and policy, media studies (journalism, broadcasting,

advertising, etc.), mass communication, public opinion, speech, business and technical writing as well as public relations.

7. **Criminology & Penology**

Category Description:

Criminology & Penology covers resources relating to the study of crime as a social phenomenon. Included here are resources on the treatment, management, and rehabilitation of offenders, as well as on criminal law.

8. **Demography**

Category Description:

Demography includes resources on human populations, especially with regard to their size, density, distribution, and vital statistics. Resources covered in this category are concerned with research in migration patterns, social biology, fertility and contraception, as well as demographic forecasting, environmental and economic factors, and life span studies.

9. **Economics**

Category Description:

Economics covers resources on all aspects, both theoretical and applied, of the production, distribution, and consumption of goods and services. These include generalist as well as specialist resources, such as political economy, agricultural economics, macroeconomics, microeconomics, econometrics, trade, and planning.

10. **Education & Educational Research**

Category Description:

Education & Educational Research covers resources on the full spectrum of education, from theoretical to applied, from nursery school to Ph.D. Included in this category are resources on pedagogy and methodology as well as on the history of education, reading, curriculum studies, education policy, and the sociology and economics of education, as well as the use of computers in the classroom.

11. **Education, Special**

Category Description:

Education, Special covers resources that are concerned with the education and development of persons with special needs, including the gifted as well as those with learning disabilities.

12. **Environmental Studies**

Category Description:

Environmental Studies covers resources that are multidisciplinary in nature. These include environmental policy, regional science, planning and law, management of natural resources, energy policy, and environmental psychology.

13. **Ergonomics**

Category Description:

Ergonomics includes resources concerned with the study of the relationship between humans and machines, particularly in a work environment. This category also covers resources on cybernetics, general systems, artificial intelligence, and systems research.

14. **Ethics**

Category Description:

Ethics covers resources on normative ethics, including all aspects of the evaluation of human conduct and social relations, such as business ethics, medical ethics, environmental ethics, etc. Descriptive ethics is covered extensively in A&HCI, Philosophy.

15. **Ethnic Studies**

Category Description:

Ethnic Studies covers resources on ethnic/racial, social and cultural diversity issues, including the history and the political, social, and economic interactions of specific ethnic groups.

16. **Family Studies**

Category Description:

Family Studies includes resources on such issues and areas as family therapy, family law, marriage, divorce, family planning, and family history. Cross-disciplinary in nature, many resources in this category also appear in other categories.

17. **Geography**

Category Description:

Geography covers resources concerned with socio-cultural aspects of the Earth's surface emphasizing the human, economic, political, urban, and environmental issues of the discipline. The history of geography and the study of cartography are also covered in this category.

18. **Gerontology**

Category Description:

Gerontology covers resources that are concerned with the sociological and psychological issues of aging, including such areas as rehabilitation, aging and education, aging and work, aging and social policy as well as life span research. Geriatrics, which deals with the medical and clinical aspects of aging, is covered in the SCI.

19. **Health Policy & Services**

Category Description:

Health Policy & Services covers resources on healthcare systems, including healthcare provision and management, financial analysis, healthcare ethics, health policy, and quality of care.

20. **History**

Category Description:

The History category in Social Science covers resources that are primarily

concerned with political, social, and economic history. This category also includes history resources that focus on a particular group, country or geographic area.

21. **History & Philosophy Of Science**

Category Description:

History & Philosophy of Science covers resources on the history of scientific disciplines including medicine and technology, as well as resources on the philosophical and social studies of science.

22. **History of Social Sciences**

Category Description:

History of Social Sciences includes resources on the history of such disciplines as business, economics, education, sociology, law, and psychology.

23. **Hospitality, Leisure, Sport & Tourism**

Category Description:

Hospitality, Leisure, Sport & Tourism covers resources that focus on all aspects of recreation and leisure studies, sport, hospitality, and travel and tourism.

24. **Industrial Relations & Labor**

Category Description:

Industrial Relations & Labor covers resources on arbitration, business and labor law, human resources, labor history, labor relations, and the sociology of work relations.

25. **Information Science & Library Science**

Category Description:

Information Science & Library Science covers resources on a wide variety of topics, including bibliographic studies, cataloguing, categorization, database construction and maintenance, electronic libraries, information ethics, information processing and management, interlending, preservation, scientometrics, serials librarianship, and special libraries.

26. **International Relations**

Category Description:

International Relations covers resources concerned with foreign policy, comparative world politics, world commerce and trade, international legal issues, peace studies and conflict resolution, military alliances, and strategic studies.

27. **Law**

Category Description:

Law covers resources from both general and specialized areas of national and international law, including comparative law, criminology, business law, banking, corporate and tax law, constitutional law, civil rights,

copyright and intellectual property law, environmental law, family law, medicine and the law as well as psychology and the law.

28. **Linguistics**

Category Description:

Linguistics covers resources relating to all theoretical and applied aspects of linguistics, including phonetics, phonology, morphology, syntax, and semantics. The category also includes resources dealing with language as a social phenomenon such as sociolinguistics, language acquisition and education, psycholinguistics, computational linguistics, corpus linguistics, semiotics and the relationship between memory and language.

29. **Management**

Category Description:

Management covers resources on management science, organization studies, strategic planning and decision-making methods, leadership studies, and total quality management.

30. **Nursing**

Category Description:

Nursing covers resources on all aspects of nursing science and practice such as administration, economics, management, education, technological applications and all clinical care specialties.

31. **Planning & Development**

Category Description:

Planning & Development is concerned with resources on the economics and social development of both underdeveloped and industrialized areas. The resources in this category focus on subjects such as economic forecasting, development studies, policy-making strategies, theories of planning, and the growth of the third world.

32. **Political Science**

Category Description:

Political Science covers resources concerned with political studies, military studies, the electoral and legislative processes, political theory, history of political science, comparative studies of political systems, and the interaction of politics and other areas of science and social science.

33. **Psychiatry**

Category Description:

Psychiatry covers resources that focus on the origins, diagnosis, and treatment of mental, emotional, or behavioral disorders. Areas covered in this category include adolescent and child psychiatry, forensic psychiatry, geriatric psychiatry, hypnosis, psychiatric nursing, psychiatric rehabilitation, psychosomatic research, and stress medicine.

34. **Psychology, Applied**

Category Description:

Psychology, Applied covers resources on organizational psychology, including selection, training, performance, and evaluation; organizational behavior; counseling and development; as well as aviation psychology and sports psychology.

35. **Psychology, Biological**

Category Description:

Psychology, Biological includes resources concerned with the biological basis of psychological states and processes. Biopsychology, psychophysiology, psychopharmacology, and comparative psychology resources are covered in this category.

36. **Psychology, Clinical**

Category Description:

Psychology, Clinical covers resources concerned with the combination of psychological therapy and clinical treatment such as behavior research and therapy, cognitive therapy, family therapy, marital and sexual therapy, psychotherapy, and rehabilitation psychology.

37. **Psychology, Developmental**

Category Description:

Psychology, Developmental covers resources concerned with the study of developmental changes in social and cognitive abilities. Key areas include adult development and aging, child and adolescent psychology, cognitive, perceptual, motor and language development as well as psychosocial and personality development.

38. **Psychology, Educational**

Category Description:

Psychology, Educational includes resources on educational psychology, educational measurement, creative behavior, instructional science, reading research, and school psychology.

39. **Psychology, Experimental**

Category Description:

Psychology, Experimental covers resources concerned with consciousness; cognition and memory; visual, auditory, and speech perception; and ecological psychology.

40. **Psychology, Mathematical**

Category Description:

Psychology, Mathematical covers resources concerned with experimental methodology and instrumentation, multivariate methods, statistical manipulation, and research strategy.

41. **Psychology, Multidisciplinary**

Category Description:

Psychology, Multidisciplinary covers resources with a general or interdisciplinary approach to the field. Resources on philosophical

psychology, psychobiology, and the history of psychology are included in this category.

42. **Psychology, Psychoanalysis**

Category Description:

Psychology, Psychoanalysis includes resources concerned with psychoanalysis as a form of diagnosis and treatment that emphasizes the gradual integration of repressed memories into the total structure of the personality.

43. **Psychology, Social**

Category Description:

Psychology, Social covers resources on the behavior of the individual in a social context. Areas included are group processes, interpersonal processes, intercultural relations, personality, social roles, persuasion, compliance, conformity, sex roles, and sexual orientation.

44. **Public Administration**

Category Description:

Public Administration covers resources concerned with the management of public enterprises, implementation of governmental decisions, the relationship between public and private sectors, public finance policy, and state bureaucracy studies.

45. **Public, Environmental & Occupational Health**

Category Description:

Public, Environmental & Occupational Health covers resources on social medicine, health behavior, health education, safety research, and community mental health. Resources concerned with the health of particular groups such as adolescents, elderly, or women are included in this category.

46. **Rehabilitation**

Category Description:

Rehabilitation covers resources concerned with therapeutic approaches for the treatment of mental, speech, hearing, visual, and other physical disabilities. This category also includes studies in music, art, dance, and occupational therapy.

47. **Social Issues**

Category Description:

Social Issues covers resources in a wide variety of topics addressing social problems for the individual, family, or society. Resources included in this category deal with death studies, issues in science and technology, gender studies, ethical studies, media studies, race and class, and the interaction of technology and society.

48. **Social Sciences, Biomedical**

Category Description:

Social Sciences, Biomedical includes resources on the political and social

effects of biomedical research. Areas covered include family planning, healthcare ethics, psycho-oncology, and sexual health.

49. **Social Sciences, Interdisciplinary**

Category Description:

Social Sciences, Interdisciplinary includes resources with an interdisciplinary approach to the field such as studies on social sciences and computers, time and society, evaluation practice, black studies, information science and society, homosexuality studies, childhood studies, and death studies.

50. **Social Sciences, Mathematical Methods**

Category Description:

Social Sciences, Mathematical Methods covers resources concerned with the quantitative methodologies used for research in social sciences such as mathematical modeling and statistical techniques for psychological, sociological, and economic data evaluation.

51. **Social Work**

Category Description:

Social Work covers resources concerned with homelessness, social casework, social services, social work education, public welfare, family counseling, child welfare and abuse, social work administration, social work with groups, and gerontological social work.

52. **Sociology**

Category Description:

Sociology covers resources that focus on the study of human society, social structures, and social change as well as human behavior as it is shaped by social forces. Areas covered in this category include community studies, socio-ethnic problems, rural sociology, sociobiology, social deviance, gender studies, the sociology of law, the sociology of religion, and comparative sociology.

53. **Substance Abuse**

Category Description:

Substance Abuse covers resources concerned primarily with the social and psychological problems of addiction, substance abuse education, and the treatment of the chemically dependent. Resources concerned with the biomedical problems of substance abuse appear in the Science Citation Index.

54. **Transportation**

Category Description:

Transportation covers resources concerned with transportation policy, economics, management, transportation development, and transportation studies. Resources concerned with the civil engineering aspects of

transportation appear in the TRANSPORTATION SCIENCE & TECHNOLOGY category of the Science Citation Index.

55. **Urban Studies**

Category Description:

Urban Studies covers resources concerned with the social aspects of city planning and urban design. Topics covered include the effects of the urban environment on the individual, the effects of urbanization on the natural environment, urban economics, urban technology, housing planning, urban education, and urban law.

56. **Women's Studies**

Category Description:

Women's Studies covers resources that focus on interdisciplinary topics such as women and health, women's psychology, women and politics, as well as gender studies and feminism.

SCIENCE CITATION INDEX EXPANDED

1. **Acoustics**

Category Description:

Acoustics covers resources on the study of the generation, control, transmission, reception, and effects of sounds. Relevant subjects include linear and nonlinear acoustics; atmospheric sound; underwater sound; the effects of mechanical vibrations; architectural acoustics; audio engineering; audiology; and ultrasound applications.

2. **Agricultural Economics & Policy**

Category Description:

Agricultural Economics & Policy covers resources concerning the production, distribution, and consumption of agricultural commodities as well as the managerial and policy decisions concerning these commodities.

3. **Agricultural Engineering**

Category Description:

Agricultural Engineering covers resources concerning many engineering applications in agriculture, including the design of machines, equipment, and buildings; soil and water engineering; irrigation and drainage engineering; crop harvesting, processing, and storage; animal production technology, housing, and equipment; precision agriculture; post-harvest processing and technology; rural development; agricultural mechanization; horticultural engineering; greenhouse structures and engineering, bioenergy and aquacultural engineering.

4. **Agriculture, Dairy & Animal Science**

Category Description:

Agriculture, Dairy & Animal Science covers resources on the selection, breeding and management of livestock, including animal science, animal

nutrition, poultry science, animal breeding and genetics, dairy science, and animal production science.

5. **Agriculture, Multidisciplinary**

Category Description:

Agriculture, Multidisciplinary covers resources having a general or interdisciplinary approach to the agricultural sciences. Regional and multi-subject resources are also covered.

6. **Agronomy**

Category Description:

Agronomy covers resources on the selection, breeding, management, and post-harvest treatment of crops including crop protection and science, seed science, plant nutrition, plant and soil science, soil management and tillage, weed science, agroforestry, agroclimatology, and agricultural water management.

7. **Allergy**

Category Description:

Allergy covers resources dealing with the full spectrum of immunologically-mediated hypersensitivity reactions including immediate or acute hypersensitivity, dermatitis, and asthma. This category also covers resources on the underlying cellular and molecular immunology specific to allergic reactivity, pathogenesis, tissue damage, clinical presentation, and modes of treatment.

8. **Anatomy & Morphology**

Category Description:

Anatomy & Morphology includes resources describing the characteristics, generation, and organization of structure in vertebrates or invertebrates. Topics cover embryology, developmental morphology, and functional anatomy, as well as specific structures, systems, or organisms. Resources on plant structure and embryology are placed preferentially in the PLANT SCIENCE category.

9. **Andrology**

Category Description:

Andrology includes resources focused on the development, function, and disorders of male morphology and reproductive systems. Topics include gonad formation, gamete generation and function, male reproductive health and endocrinology, and sex determination in the male embryo.

10. **Anesthesiology**

Category Description:

Anesthesiology covers resources that focus on the administration of anesthetics, the treatment of pain, and the use of life support systems. This category also includes specific resources on cardiovascular anesthesia, pediatric anesthesia, and neurosurgical anesthesia.

11. **Astronomy & Astrophysics**

Category Description:
Astronomy & Astrophysics covers resources that focus on the science of the celestial bodies and their magnitudes, motions, and constitution. Topics include the properties of celestial bodies such as luminosity, size, mass, density, temperature, and chemical composition, as well as their origin and evolution. This category includes some resources on planetary science that focus on astrophysical aspects of planets. General resources on planetary science are placed in the GEOCHEMISTRY & GEOPHYSICS category.

12. **Audiology & Speech-Language Pathology**

Category Description:
Audiology & Speech-Language Pathology covers resources on the basic science and clinical research aspects of speech, language, communication and hearing disorders. This category will also cover all areas of audiology as well as clinical management (diagnosis, prevention and treatment) of the above disorders.

13. **Automation & Control Systems**

Category Description:
Automation & Control Systems covers resources on the design and development of processes and systems that minimize the necessity of human intervention. Resources in this category cover control theory, control engineering, and laboratory and manufacturing automation.

14. **Behavioral Sciences**

Category Description:
Behavioral Sciences covers resources dealing with the biological correlates of observable action in humans or animals. These include aggression, sexual behavior, and learning as well as the various factors, natural or pharmacological, that alter such behaviors. Resources in this category cover neurobiology, experimental psychology, ethology, cognitive assessment, and behavioral consequences of neurological disorders.

15. **Biochemical Research Methods**

Category Description:
Biochemical Research Methods includes resources that describe specific techniques used in biological and biochemical research, including methods for the purification and analysis of biomolecules, the observation of the structure or function of living organisms and tissues (exclusive of microscopy), and the alteration of biomolecules for specific research applications. This category does not cover clinical applications or the development and design of diagnostic tools.

16. **Biochemistry & Molecular Biology**

Category Description:
Biochemistry & Molecular Biology covers resources on general

biochemistry and molecular biology topics such as carbohydrates, lipids, proteins, nucleic acids, genes, drugs, toxic substances, and other chemical or molecular constituents of cells, microbes, and higher plants and animals, including humans. Excluded are resources that are focus on biochemistry in cells, tissues or organs and those whose primary focus is the organism of study, e.g. plants, microbes, etc. Excluded, also, are resources that focus on methods in biochemistry or molecular biology.

17. **Biodiversity Conservation**

Category Description:

Biodiversity Conservation covers resources on the conservation management of species and ecosystems. Topics include conservation ecology, biological conservation, paleobiology, natural history and the natural sciences.

18. **Biology**

Category Description:

The Biology category includes resources having a broad or interdisciplinary approach to biology. In addition, it includes materials that cover a specific area of biology not covered in other categories such as theoretical biology, mathematical biology, thermal biology, cryobiology, and biological rhythm research.

19. **Biophysics**

Category Description:

Biophysics covers resources that focus on the transfer and effects of physical forces and energy-light, sound, electricity, magnetism, heat, cold, pressure, mechanical forces, and radiation-within and on cells, tissues, and whole organisms.

20. **Biotechnology & Applied Microbiology**

Category Description:

Biotechnology & Applied Microbiology includes resources that cover a broad range of topics on the manipulation of living organisms to make products or solve problems to meet human needs. Topics include genetic engineering; molecular diagnostic and therapeutic techniques; genome data mining; bioprocessing of food and drugs; biological control of pests; environmental bioremediation; and bio-energy production. This category also covers resources that deal with the related social, business, and regulatory issues.

21. **Cardiac & Cardiovascular Systems**

Category Description:

Cardiac & Cardiovascular Systems covers resources dealing with the diagnosis and treatment of heart disease. Coverage focuses on cardiac disease prevention, pharmacology, surgery, transplantation, and research. This category also includes cardiac testing, pacemakers, and medical

devices. Resources focusing on circulation, hypertension, arterial disease, and stroke are placed in the PERIPHERAL VASCULAR DISEASE category.

22. **Cell Biology**

Category Description:

Cell Biology includes resources on all aspects of the structure and function of eukaryotic cells. The principle characteristic of resources in this category is an emphasis on the integration at the cellular level of biochemical, molecular, genetic, physiological, and pathological information. This category considers material on specific tissues, differentiated as well as embryonic.

23. **Cell & Tissue Engineering**

Category Description:

Cell & Tissue Engineering covers resources that apply technology to the chemical, mechanical, and electrical alteration or preparation of cells and tissues. Cell regions that can be redesigned and manipulated include: the membrane, receptors, cytoplasm, cytoskeleton, genes, and matrix. Resources in this category span a range of technologies including: engineering regeneration of nerve, adipose or endothelial tissue; developing various types of engineered stem cells; and biomechanical aspects of engineered tissue/cells. This category does not include resources on clinical interventions.

24. **Chemistry, Analytical**

Category Description:

Chemistry, Analytical covers resources on the techniques that yield any type of information about chemical systems. Topics include chromatography, thermal analysis, chemometrics, separation techniques, pyrolysis, and electroanalytical and radioanalytical chemistry. Some spectroscopy resources may be included in this category when focusing on analytical techniques and applications in chemistry.

25. **Chemistry, Applied**

Category Description:

Chemistry, Applied covers resources that report on the application of basic chemical sciences to other sciences, engineering, and industry. Topics include chemical engineering (catalysis, fuel processing, microencapsulation, and functional polymers); food science and technology (cereals, hydrocolloids, and food additives); medicinal chemistry (pharmacology); dyes and pigments; coatings technology; and cosmetics.

26. **Chemistry, Inorganic & Nuclear**

Category Description:

Chemistry, Inorganic & Nuclear includes resources on both inorganic and nuclear chemistry. Chemistry, Inorganic covers resources that are concerned

with non-carbon elements and the preparation, properties, and reactions of their compounds. It also includes resources on the study of certain simple carbon compounds, including the oxides, carbon disulfide, the halides, hydrogen cyanide, and salts, such as the cyanides, cyanates, carbonates, and hydrogencarbonates. Resources on coordination chemistry and organo-metallic compounds (those containing a carbon-metal bond) are also covered in this category. Chemistry, Nuclear includes resources on the study of the atomic nucleus, including fission and fusion reactions and their products. This category also covers radiochemistry resources focusing on such topics as the preparation of radioactive compounds, the separation of isotopes by chemical reactions, the use of radioactive labels in studies of mechanisms, and experiments on the chemical reactions and compounds of transuranic elements.

27. **Chemistry, Medicinal**

Category Description:

Chemistry, Medicinal includes resources emphasizing the isolation and study of substances with therapeutic potential. Topics of interest are quantitative structure-function relationships, structural characterization and organic syntheses of naturally occurring compounds, and chemical and analytical techniques used in rational drug design. See also the PHARMACOLOGY & PHARMACY category.

28. **Chemistry, Multidisciplinary**

Category Description:

Chemistry, Multidisciplinary includes resources having a general or interdisciplinary approach to the chemical sciences. Special topic chemistry resources that have relevance to many areas of chemistry are also included in this category. Resources having a primary focus on analytical, inorganic and nuclear, organic, physical, or polymer chemistry are placed in their own categories.

29. **Chemistry, Organic**

Category Description:

Chemistry, Organic includes resources that focus on synthetic and natural organic compounds their synthesis, structure, properties, and reactivity. Research on hydrocarbons, a major area of organic chemistry, is included in this category.

30. **Chemistry, Physical**

Category Description:

Chemistry, Physical includes resources on photochemistry, solid state chemistry, kinetics, catalysis, quantum chemistry, surface chemistry, electrochemistry, chemical thermodynamics, thermophysics, colloids, fullerenes, and zeolites.

31. **Clinical Neurology**

Category Description:
Clinical Neurology covers resources on all areas of clinical research and medical practice in neurology. The focus is on traditional neurological illnesses and diseases such as dementia, stroke, epilepsy, headache, multiple sclerosis, and movement disorders that have clinical and socio-economic importance. This category also includes resources on medical specialties such as pediatric neurology, neurosurgery, neuroradiology, pain management, and neuropsychiatry that affect neurological diagnosis and treatment.

32. **Computer Science, Artificial Intelligence**

Category Description:
Computer Science, Artificial Intelligence covers resources that focus on research and techniques to create machines that attempt to efficiently reason, problem-solve, use knowledge representation, and perform analysis of contradictory or ambiguous information. This category includes resources on artificial intelligence technologies such as expert systems, fuzzy systems, natural language processing, speech recognition, pattern recognition, computer vision, decision-support systems, knowledge bases, and neural networks.

33. **Computer Science, Cybernetics**

Category Description:
Computer Science, Cybernetics includes resources that focus on the control and information flows within and between artificial (machine) and biological systems. Resources in this category draw from the fields of artificial intelligence, automatic control, and robotics.

34. **Computer Science, Hardware & Architecture**

Category Description:
Computer Science, Hardware & Architecture covers resources on the physical components of a computer system: main and logic boards, internal buses and interfaces, static and dynamic memory, storage devices and storage media, power supplies, input and output devices, networking interfaces, and networking hardware such as routers and bridges. Resources in this category also cover the architecture of computing devices, such as SPARC, RISC, and CISC designs, as well as scalable, parallel, and multi-processor computing architectures.

35. **Computer Science, Information Systems**

Category Description:
Computer Science, Information Systems covers resources that focus on the acquisition, processing, storage, management, and dissemination of electronic information that can be read by humans, machines, or both. This category also includes resources for telecommunications systems and

discipline-specific subjects such as medical informatics, chemical information processing systems, geographical information systems, and some library science.

36. **Computer Science, Interdisciplinary Applications**

Category Description:

Computer Science, Interdisciplinary Applications includes resources concerned with the application of computer technology and methodology to other disciplines, such as information management, engineering, biology, medicine, environmental studies, geosciences, arts and humanities, agriculture, chemistry, and physics.

37. **Computer Science, Software Engineering**

Category Description:

Computer Science, Software Engineering includes resources that are concerned with the programs, routines, and symbolic languages that control the functioning of the hardware and direct its operation. Also covered in this category are computer graphics, digital signal processing, and programming languages.

38. **Computer Science, Theory & Methods**

Category Description:

Computer Science, Theory & Methods includes resources that emphasize experimental computer processing methods or programming techniques such as parallel computing, distributed computing, logic programming, object-oriented programming, high-speed computing, and supercomputing.

39. **Construction & Building Technology**

Category Description:

Construction & Building Technology includes resources that provide information on the physical features and design of structures (e.g., buildings, dams, bridges, tunnels) and the materials used to construct them (concrete, cement, steel). Other topics covered in this category include heating and air conditioning, energy systems, and indoor air quality.

40. **Critical Care Medicine**

Category Description:

Critical Care Medicine covers resources on healthcare specialties that focus on the care of patients with acute, life-threatening illness or injury. This category covers resources such as heart attack; poisoning; burns, pneumonia; surgical complications; premature birth; trauma including head trauma; stroke, and other neural injuries; intensive care anesthesia; and resuscitation.

41. **Crystallography**

Category Description:

Crystallography covers resources that report on the study of the formation, structure, and properties of crystals. This category also includes resources

on X-ray crystallography, the study of the internal structure of crystals through the use of X-ray diffraction.

42. **Dentistry, Oral Surgery & Medicine**

Category Description:

Dentistry, Oral Surgery & Medicine covers resources on the anatomy, physiology, biochemistry, and pathology of the teeth and oral cavity. This category includes specific resources on periodontal disease, dental implants, oral and maxillofacial surgery, oral pathology, and oral surgery. Coverage also includes resources on community dentistry, public health dentistry, and pediatric dentistry.

43. **Dermatology**

Category Description:

Dermatology covers resources on the anatomy, physiology, and pathology of the skin. It contains resources on investigative and experimental dermatology, contact dermatitis, dermatologic surgery, dermatologic pathology, and dermatologic oncology. This category also includes specific resources on burns, wounds and leprosy.

44. **Developmental Biology**

Category Description:

Developmental Biology includes resources focused on the specific mechanisms of cell, tissue, and organism development, as well as gametogenesis, fertilization, biochemistry and molecular genetic control of development, cell biology of gametes and zygotes, and embryology.

45. **Ecology**

Category Description:

Ecology covers resources concerning many areas relating to the study of the interrelationship of organisms and their environments, including ecological economics, ecological engineering, ecotoxicology, ecological modeling, evolutionary ecology, biogeography, chemical ecology, marine ecology, wildlife research, microbial ecology, molecular ecology, and population ecology. This category also includes general ecology resources and ones devoted to particular ecological systems.

46. **Education, Scientific Disciplines**

Category Description:

Education, Scientific Disciplines covers all education resources in the scientific disciplines, including biology, pharmacy, biochemistry, engineering, chemistry, nutrition, and medicine.

47. **Electrochemistry**

Category Description:

Electrochemistry covers resources that deal with the chemical changes produced by electricity and the generation of electricity by chemical reactions. Applications include dry cells, lead plate, storage batteries,

electroplating, electrodeposition (electrolysis), purification of copper, production of aluminum, fuel cells, and corrosion of metals.

48. **Emergency Medicine**

Category Description:

Emergency Medicine covers resources on the science, education, and clinical practice of emergency medicine. Coverage spans the breadth of the specialty on trauma, pediatrics, toxicology, injury prevention and control, resuscitation, and emergency medical services.

49. **Endocrinology & Metabolism**

Category Description:

Endocrinology & Metabolism includes resources focused on endocrine glands; the regulation of cell, organ, and system function by the action of secreted hormones; the generation and chemical/biological properties of these substances; and the pathogenesis and treatment of disorders associated with either source or target organs. Specific areas covered include neuroendocrinology, reproductive endocrinology, pancreatic hormones and diabetes, regulation of bone formation and loss, and control of growth.

50. **Energy & Fuels**

Category Description:

Energy & Fuels covers resources on the development, production, use, application, conversion, and management of nonrenewable (combustible) fuels (such as wood, coal, petroleum, and gas) and renewable energy sources (solar, wind, biomass, geothermal, hydroelectric). Note: Resources dealing with nuclear energy and nuclear technology appear in the NUCLEAR SCIENCE & TECHNOLOGY category.

51. **Engineering, Aerospace**

Category Description:

Engineering, Aerospace includes resources concerned with astronautics, aeronautics, aerospace, and aviation. Topics covered include the design and construction of aircraft, space vehicles, missiles, satellites, instrumentation, and power units, as well as the launch, flight, and guidance of crafts in the earth's atmosphere or in space. Resources in this category draw from many fields, including mechanics and mechanical engineering, automation, instrumentation, and materials science.

52. **Engineering, Biomedical**

Category Description:

Engineering, Biomedical covers resources that apply engineering technology to solving medical problems. Resources in this category span a wide range of applications including applied biomechanics, biorheology, medical imaging, medical monitoring equipment, artificial organs, and implanted materials and devices.

53. **Engineering, Chemical**

Category Description:

Engineering, Chemical covers resources that discuss the chemical conversion of raw materials into a variety of products. This category includes resources that deal with the design and operation of efficient and cost-effective plants and equipment for the production of the various end products.

54. **Engineering, Civil**

Category Description:

Engineering, Civil includes resources on the planning, design, construction, and maintenance of fixed structures and ground facilities for industry, occupancy, transportation, use and control of water, and harbor facilities. Resources also may cover the sub-fields of structural engineering, geotechnics, earthquake engineering, ocean engineering, water resources and supply, marine engineering, transportation engineering, and municipal engineering.

55. **Engineering, Electrical & Electronic**

Category Description:

Engineering, Electrical & Electronic covers resources that deal with the applications of electricity, generally those involving current flows through conductors, as in motors and generators. This category also includes resources that cover the conduction of electricity through gases or a vacuum as well as through semiconducting and superconducting materials. Other relevant topics in this category include image and signal processing, electromagnetics, electronic components and materials, microwave technology, and microelectronics.

56. **Engineering, Environmental**

Category Description:

Engineering, Environmental includes resources that discuss the effects of human beings on the environment and the development of controls to minimize environmental degradation. Relevant topics in this category include water and air pollution control, hazardous waste management, land reclamation, pollution prevention, bioremediation, incineration, management of sludge problems, landfill and waste repository design and construction, facility decommissioning, and environmental policy and compliance.

57. **Engineering, Geological**

Category Description:

Engineering, Geological includes multidisciplinary resources that encompass the knowledge and experience drawn from both the geosciences and various engineering disciplines (primarily civil engineering). Resources in this category cover geotechnical engineering, geotechnics,

geotechnology, soil dynamics, earthquake engineering, geotextiles and geomembranes, engineering geology, and rock mechanics.

58. **Engineering, Industrial**

Category Description:

Engineering, Industrial includes resources that focus on engineering systems that integrate people, materials, capital, and equipment to provide products and services. Relevant topics covered in the category include operations research, process engineering, productivity engineering, manufacturing, computer-integrated manufacturing (CIM), industrial economics, and design engineering.

59. **Engineering, Manufacturing**

Category Description:

Engineering, Manufacturing covers resources on the conversion of raw materials into end-use products or processed materials. Topics in this category include computer-integrated manufacturing (CIM), computer-aided design (CAD), and computer-aided manufacturing (CAM); design of products, tools, and machines; quality control; scheduling; production; and inventory control.

60. **Engineering, Marine**

Category Description:

Engineering, Marine includes resources that focus on the environmental and physical constraints an engineer must consider in the design, construction, navigation, and propulsion of ships and other sea vessels.

61. **Engineering, Mechanical**

Category Description:

Engineering, Mechanical includes resources on the generation, transmission, and use of heat and mechanical power, as well as with the production and operation of tools, machinery, and their products. Topics in this category include heat transfer and thermodynamics, fatigue and fracture, wear, tribology, energy conversion, hydraulics, pneumatics, microelectronics, plasticity, strain analysis, and aerosol technology.

62. **Engineering, Multidisciplinary**

Category Description:

Engineering, Multidisciplinary covers resources having a general or interdisciplinary approach to engineering. Relevant topics include computer science and mathematics in engineering, engineering education, reliability studies, and audio engineering.

63. **Engineering, Ocean**

Category Description:

Engineering, Ocean includes resources concerned with the development of equipment and techniques that allow humans to operate successfully

beneath and on the surface of the ocean in order to develop and utilize marine resources.

64. **Engineering, Petroleum**

Category Description:

Engineering, Petroleum covers resources that report on a combination of engineering concepts, methods, and techniques on drilling and extracting hydrocarbons and other fluids from the earth (e.g., chemical flooding, thermal flooding, miscible displacement techniques, and horizontal drilling) and on the refining process. Relevant topics in this category include drilling engineering, production engineering, reservoir engineering, and formation evaluation, which infers reservoir properties through indirect measurements.

65. **Entomology**

Category Description:

Entomology covers resources concerning many aspects of the study of insects, including general entomology, applied entomology, regional entomology, apidology, aquatic insects, insect biochemistry and physiology, economic entomology, integrated pest management, environmental entomology, and pesticide science.

66. **Environmental Sciences**

Category Description:

Environmental Sciences covers resources concerning many aspects of the study of the environment, among them environmental contamination and toxicology, environmental health, environmental monitoring, environmental geology, and environmental management. This category also includes soil science and conservation, water resources research and engineering and climate change.

67. **Evolutionary Biology**

Category Description:

Evolutionary Biology covers resources concerning the molecular, natural selection, and population mechanisms of evolution; the evolution of species and related groups; the classification of organisms based on evolutionary relationships; and the biology and ecology of extinct organisms.

68. **Fisheries**

Category Description:

Fisheries covers resources concerning numerous aspects of fisheries science, technology and industry, including fish pathology, fish physiology and biochemistry, fish diseases and aquaculture.

69. **Food Science & Technology**

Category Description:

Food Science & Technology covers resources concerning various aspects of food research and production, including food additives and contaminants, food chemistry and biochemistry, meat science, food microbiology and

technology, dairy science, food engineering and processing, cereal science, brewing, and food quality and safety.

70. **Forestry**

Category Description:

Forestry covers resources concerning the science and technology involved in establishing, maintaining and managing forests for various uses, including wood production, water resource management, wildlife conservation and recreation.

71. **Gastroenterology & Hepatology**

Category Description:

Gastroenterology & Hepatology covers resources on the anatomy, physiology, biochemistry, and pathology of the digestive system. This category includes specific resources on the prognosis and treatment of digestive diseases; stomach ulcers; metabolic, genetic, infectious and chemically induced diseases of the liver; colitis; diseases of the pancreas and diseases of the rectum.

72. **Genetics & Heredity**

Category Description:

Genetics & Heredity includes resources that deal with the structure, functions, and properties of genes, and the characteristics of inheritance. This category also considers heritable traits, population genetics, frequency and distribution of polymorphism, as well as inherited diseases and disorders of the replicative process. The category is distinguishable from Biochemistry & Molecular Biology by its specific emphasis on the gene as a single functional unit, and on the gene's effect on the organism as a whole.

73. **Geochemistry & Geophysics**

Category Description:

Resources in this category may focus on either Geochemistry or Geophysics or both. Geochemistry covers resources that deal with the chemical composition and chemical changes in the Earth or other planets or asteroids. Topics include research on related chemical and geological properties of substances, applied geochemistry, organic geochemistry, and biogeochemistry. Geophysics covers resources on the application of the methods and techniques of physics to the study of the structure of the Earth and the processes affecting it. Topics addressed include seismology, tectonics, tectonophysics, geomagnetism, radioactivity, and rock mechanics.

74. **Geography, Physical**

Category Description:

Geography, Physical covers resources dealing with the differentiation of areas of the Earth's surface as shown in the character, arrangement, and interrelations over the world of such elements as climate, elevation, soil, vegetation, population, land use, industries, or states, as well as the unit

areas formed by the complex of these individual elements. Resources which focus on economic, human, and urban topics are covered in the SSCI GEOGRAPHY category.

75. **Geology**

Category Description:

Geology covers resources that deal with the physical history of the Earth, the rock of which it is composed, and the physical changes (not the physics) that the Earth has undergone or is undergoing. Resources in this category cover sedimentology, stratigraphy, hydrogeology, ore geology, structural geology, regional geology, and petrology. These resources are somewhat narrow in scope and are not given to the interdisciplinary study of the Earth Sciences.

76. **Geosciences, Multidisciplinary**

Category Description:

Geosciences, Multidisciplinary covers resources having a general or interdisciplinary approach to the study of the Earth and other planets. Relevant topics include geology, geochemistry/geophysics, hydrology, paleontology, oceanography, meteorology, mineralogy, geography, and energy and fuels. Resources having a primary focus on geology, or geochemistry & geophysics are placed in their own categories.

77. **Geriatrics & Gerontology**

Category Description:

Geriatrics & Gerontology covers resources on the aged and the aging process. This category includes the clinical, biochemical, histological, and psychological aspects of aging. Coverage also includes specific clinical problems in the treatment of elderly patients, as well as research on the cellular and animal correlates of age and senescence. Resources that focus on the psychological, social, and political aspects of aging are covered in the SSCI.

78. **Health Care Sciences & Services**

Category Description:

Health Care Sciences & Services covers resources on health services, hospital administration, health care management, health care financing, health policy and planning, health economics, health education, history of medicine, and palliative care.

79. **Hematology**

Category Description:

Hematology covers resources that deal with blood and blood-forming tissues, as well as the functions, diseases, and treatments of these systems. Topics included are hemophilia, neoplastic disorders of the blood or lymphoid tissues, and mechanisms and disorders of thrombosis.

80. **History & Philosophy of Science**

Category Description:

History & Philosophy of Science covers resources on the historical and logical connections in the development of the scientific method and in scientific discoveries.

81. **Horticulture**

Category Description:

Horticulture covers resources concerning the cultivation of flowers, fruits, vegetables or ornamental plants, in gardens, orchards or nurseries.

82. **Imaging Science & Photographic Technology**

Category Description:

Imaging Science & Photographic Technology includes resources that cover pattern recognition, analog and digital signal processing, remote sensing, and optical technology. This category also covers resources on the photographic process (the engineering of photographic devices and the chemistry of photography) as well as machine-aided imaging, recording materials and media, and visual communication and image representation.

83. **Immunology**

Category Description:

Immunology covers resources dedicated to all aspects of immune response and regulation, at the cellular-molecular level as well as the clinical level. Other topics include studies of the interaction between pathogens and host immunity, as well as clinical immunology, emerging immunotherapies, and the immunologic contribution to disease course.

84. **Infectious Diseases**

Category Description:

Infectious Diseases covers resources on all aspects of the pathogenesis of clinically significant viral or bacterial diseases including HIV, AIDS, sexually transmitted diseases (STDs). This category is also concerned with resources on host-pathogen interactions, as well as the prevention, diagnosis, treatment, and epidemiology of infectious disease.

85. **Instruments & Instrumentation**

Category Description:

Instruments & Instrumentation includes resources on the application of instruments for observation, measurement, or control of physical and/or chemical systems. This category also includes materials on the development and manufacture of instruments.

86. **Integrative & Complementary Medicine**

Category Description:

Integrative & Complementary Medicine covers resources on the practical use of allopathic, alternative and/or complementary medicine and therapies in preventing and treating disease, healing illness, and promoting health.

The category is concerned with resources on alternative systems of practice that provide for an overall rational and comprehensive approach to healthcare. Topics such as bioelectromagnetics applications; herbal medicine; diet, nutrition and lifestyle changes; manual healing methods; mind/body interventions; and pharmacological and biological treatment as well as any other unconventional health care practices are included in this category.

87. **Limnology**

Category Description:

Limnology covers resources concerning the study of the physical, chemical, meteorological, biological and ecological aspects of freshwaters.

88. **Logic**

Category Description:

Logic covers resources on the study of logic in all its forms, including mathematical logic (pure and applied), philosophical logic and computational logic (or logic in computer science, theoretical and applied). Based on the particular scope of the resource, it may be cross-referenced in a Mathematics, Philosophy or Computer Science category.

89. **Marine & Freshwater Biology**

Category Description:

Marine & Freshwater Biology covers resources concerning many aquatic sciences, including marine ecology and environmental research, aquatic biology, marine pollution and toxicology, aquatic botany and plant management, estuarine and coastal research, diseases of aquatic organisms, molluscan and shellfish research, fish biology and biofouling.

90. **Materials Science, Biomaterials**

Category Description:

Materials Science, Biomaterials includes resources that analyze the physical characteristics of living tissue to aid in the development of synthetic replacements for repairs or augmentation of functions. Resources in this category cover the development, testing, performance, and biocompatibility of engineered biomaterials in vitro and in vivo for purposes such as medical implants, devices, and sensors.

91. **Materials Science, Ceramics**

Category Description:

Materials Science, Ceramics covers resources that deal with inorganic materials with high-temperature melting points, including silicates and aluminosilicates, refractory metal oxides and metal nitrides, and borides. This category also includes resources discussing products such as earthenware, porcelain, brick, glass, and vitreous enamels.

92. **Materials Science, Characterization & Testing**

Category Description:

Materials Science, Characterization & Testing covers resources that focus on techniques used to evaluate and test materials. These techniques include nondestructive testing, diffraction analysis, electron microscopy, electron spectroscopy, ion beam analysis, mechanical testing, optical characterization, and scanning tunneling microscopy.

93. **Materials Science, Coatings & Films**

Category Description:

Materials Science, Coatings & Films covers resources that concentrate on research in coatings and films applied to a base material (substrate). Metals, alloys, resin solutions, and solid/liquid suspensions are the coatings most commonly used in industry. Application methods include electrolysis, vapor deposition, vacuum, or mechanical means such as spraying, calendering, roller coating, extrusion, or thermosetting.

94. **Materials Science, Composites**

Category Description:

Materials Science, Composites covers resources that focus on mixtures or mechanical combinations of two or more materials that are solid in the finished state, are mutually insoluble, and differ in chemical nature. The major types of composites are 1) laminates of paper, fabric, or wood and a thermosetting material; 2) reinforced plastics; 3) cermets (ceramic and metal powders); 4) fabrics of natural and synthetic fibers; and 5) filled composites, in which a bonding material is loaded with filler in the form of flakes or small particles.

95. **Materials Science, Multidisciplinary**

Category Description:

Materials Science, Multidisciplinary covers resources having a general or multidisciplinary approach to the study of the nature, behavior, and use of materials. Relevant topics include ceramics, composites, alloys, metals and metallurgy, nanotechnology, nuclear materials, and adhesion and adhesives.

96. **Materials Science, Paper & Wood**

Category Description:

Materials Science, Paper & Wood includes resources that cover all aspects of wood and/or paper production. Topics include cellulose chemistry and technology, pulp and paper science, paper fabrication techniques, and wood and fiber science and technology.

97. **Materials Science, Textiles**

Category Description:

Materials Science, Textiles covers resources that focus on the manufacture of clothing and furniture from materials made of natural fibers (e.g., leather, cotton, wool, wood) and/or synthetic fibers (e.g., polyester, vinyl, nylon). Resources covering dyes and colors and fiber chemistry are also included.

98. **Mathematical & Computational Biology**

Category Description:
Mathematical and Computational Biology includes resources concerning the use of mathematical, statistical and computational methods to address data analysis, modeling, and information management in biological problems, processes and systems. Among the areas covered are biostatistics, bioinformatics, biometrics, modeling of biological systems, and computational biology.

99. **Mathematics**

Category Description:
Mathematics covers resources having a broad, general approach to the field. The category also includes resources focusing on specific fields of basic research in Mathematics such as topology, algebra, functional analysis, combinatorial theory, differential geometry and number theory.

100. **Mathematics, Applied**

Category Description:
Mathematics, Applied covers resources concerned with areas of mathematics that may be applied to other fields of science. It includes areas such as differential equations, numerical analysis, nonlinearity, control, software, systems analysis, computational mathematics and mathematical modeling. Resources that are concerned with mathematical methods and whose primary focus is on a specific non-mathematics discipline (except biology) such as psychology, history, economics etc., are covered in the MATHEMATICS, INTERDISCIPLINARY APPLICATIONS category. Resources focusing on mathematical biology are covered in the MATHEMATICAL & COMPUTATIONAL BIOLOGY category.

101. **Mathematics, Interdisciplinary Applications**

Category Description:
Mathematics, Interdisciplinary Applications includes resources concerned with mathematical methods whose primary focus is on a specific non-mathematics discipline (except biology) such as psychology, history, economics, etc. Resources that deal with mathematical biology are covered in the MATHEMATICAL AND COMPUTATIONAL BIOLOGY category. Resources that focus on specific mathematical topics such as differential equations, numerical analysis, nonlinearity, etc., are covered in the MATHEMATICS, APPLIED category.

102. **Mechanics**

Category Description:
Mechanics includes resources that cover the study of the behavior of physical systems under the action of forces. Relevant topics in this category include fluid mechanics, solid mechanics, gas mechanics, mathematical modeling (chaos and fractals, finite element analysis), thermal engineering,

fracture mechanics, heat and mass flow and transfer, phase equilibria studies, plasticity, adhesion, rheology, gravity effects, vibration effects, and wave motion analysis.

103. **Medical Ethics**

Category Description:

Medical Ethics covers resources on all aspects of ethics in health care and medicine.

104. **Medical Informatics**

Category Description:

Medical Informatics covers resources on health care information in clinical studies and medical research. This category includes resources on the evaluation, assessment, and use of health care technology, its consequences for patients, and its impact on society.

105. **Medical Laboratory Technology**

Category Description:

Medical Laboratory Technology covers resources on the testing, methods, and equipment used in clinical, medical, hospital, and pathology laboratories, including clinical chemistry and biochemical analysis of laboratory samples. Resources on the development and refinement of the diagnostic technologies used in these laboratories are also covered.

106. **Medicine, General & Internal**

Category Description:

Medicine, General & Internal covers resources on medical specialties such as general medicine, internal medicine, clinical physiology, pain management, military and hospital medicine. Resources focusing on family medicine and primary health care services are placed in the Primary Health Care category.

107. **Medicine, Legal**

Category Description:

Medicine, Legal covers resources on all aspects of medical legal issues, including government regulations and policies, malpractice, toxicological and pharmacological regulations, clinical therapeutic patents and other critical legal issues at the interface of law, medicine, and healthcare. The category also covers resources dealing with the various branches of forensic science.

108. **Medicine, Research & Experimental**

Category Description:

Medicine, Research & Experimental includes resources describing general medical research with a particular emphasis on extremely novel techniques and clinical interventions in a broad range of medical specializations and applications, including vaccine development, tissue replacement, immunotherapies, and other experimental therapeutic strategies. Resources

in this category reflect clinical interventions that are in early stages of development, using in vitro or animal models, and small-scale clinical trials.

109. **Metallurgy & Metallurgical Engineering**

Category Description:

Metallurgy & Metallurgical Engineering includes resources that cover the numerous chemical and physical processes used to isolate a metallic element from its naturally occurring state, refine it, and convert it into a useful alloy or product. Topics in this category include corrosion prevention and control, hydrometallurgy, pyrometallurgy, electrometallurgy, phase equilibria, iron-making, steel-making, oxidation, plating and finishing, powder metallurgy, and welding.

110. **Meteorology & Atmospheric Sciences**

Category Description:

Meteorology & Atmospheric Sciences covers those resources that deal with the atmosphere and its phenomena, especially weather and weather forecasting. Resources in this category are concerned with the atmosphere's temperature, density, winds, clouds, precipitation and other characteristics, as well as the structure and evolution of the atmosphere in terms of external influences and the basic laws of physics. This category also includes resources dealing with climatology.

111. **Microbiology**

Category Description:

Microbiology includes resources dealing with all aspects of fundamental and applied studies of microorganisms, including bacteria, viruses, and fungi. This category also considers resources on the clinical aspects of the occurrence and treatment of microbial pathogens, basic science studies of microbial biochemistry and function, environmental microbiology, and bacterial/viral uses in biotechnology.

112. **Microscopy**

Category Description:

Microscopy covers those resources that focus on the interpretative application of microscope magnification to the study of materials that cannot be seen properly by the unaided eye. The instruments used in microscopy may be either optical in nature, or use radiation other than light for making enlarged images of minute objects (e.g., an electron microscope).

113. **Mineralogy**

Category Description:

Mineralogy includes resources that deal with the science of minerals, their crystallography, physical and chemical properties, classification, and the ways of distinguishing them.

114. **Mining & Mineral Processing**

Category Description:

Mining & Mineral Processing includes resources on locating and evaluating mineral deposits; designing and constructing mines; developing mining equipment; supervising mining operations and safety; and extracting, cleaning, sizing, and dressing mined material. Relevant topics in this category include exploration and mining geology, rock mechanics, geophysics, and mining science and technology.

115. **Multidisciplinary Sciences**

Category Description:

Multidisciplinary Sciences includes resources of a very broad or general character in the sciences. It covers the spectrum of major scientific disciplines such as Physics, Chemistry, Mathematics, Biology, etc. Nature and Science are the preeminent resources in this category and serve as typical examples. The Web site of the National Science Foundation is a good example of a web resource included in this category. Some specialized resources that have a wide range of applications in the sciences also may fall under this category. The journal Fractals---Complex Geometry Patterns and Scaling in Nature and Society would be an example of such a resource.

116. **Mycology**

Category Description:

Mycology includes resources on topics that range from the general biology of fungi to fungal diseases of humans, animals and plants.

117. **Nanoscience & Nanotechnology**

Category Description:

Nanoscience & Nanotechnology includes resources that focus on basic and applied research at the micro and nano level across a variety of disciplines including chemistry, biology, bioengineering, physics, electronics, clinical and medical science, chemical engineering and materials science.

118. **Neuroimaging**

Category Description:

Neuroimaging covers resources on the mapping technologies used to treat, diagnose, or monitor brain lesions and mental disorders.

119. **Neurosciences**

Category Description:

Neurosciences covers resources on all areas of basic research on the brain, neural physiology, and function in health and disease. The areas of focus include neurotransmitters, neuropeptides, neurochemistry, neural development, and neural behavior. Coverage also includes resources in neuro-endocrine and neuro-immune systems, somatosensory system, motor system and sensory motor integration, autonomic system as well as diseases of the nervous system.

120. **Nuclear Science & Technology**

Category Description:
Nuclear Science & Technology covers resources on nuclear energy (fission and fusion processes), nuclear energy and fuel, nuclear power, and nuclear electric power generation. This category also includes resources on nuclear engineering (the branch of technology that applies the nuclear fission process to power generation), nuclear safety, radiation effects, and radioactive waste management. Note: Resources on nuclear physics (low-energy physics) appear in the category PHYSICS, NUCLEAR.

121. **Nursing**

Category Description:
Nursing covers resources on all aspects of nursing science and practice such as administration, economics, management, education, technological applications and all clinical care specialties.

122. **Nutrition & Dietetics**

Category Description:
Nutrition & Dietetics covers resources concerning many aspects of nutrition, including general nutrition, nutrition and metabolism, nutrition science, clinical nutrition, vitamin research and nutritional biochemistry. Dietetics, the application of nutritional principles, is also included in this category.

123. **Obstetrics & Gynecology**

Category Description:
Obstetrics & Gynecology covers resources on the medical fields concerned with female reproductive function and reproductive organs. Obstetrics covers resources on pregnancy, fetal health, labor, and puerperium. Gynecology covers resources on the health and diseases of female sex organs and their impact on women's overall health. This category also includes resources on fertility, infertility, and contraception.

124. **Oceanography**

Category Description:
Oceanography covers resources concerning the scientific study and exploration of the oceans and seas in all their aspects, including the delimitation of their extent and depth, the physics and chemistry of their waters, and the exploration of their resources.

125. **Oncology**

Category Description:
Oncology covers resources on the mechanisms, causes, and treatments of cancer including environmental and genetic risk factors, and cellular and molecular carcinogenesis. Aspects of clinical oncology covered include surgical, radiological, chemical, and palliative care. This category is also concerned with resources on cancers of specific systems and organs.

126. **Operations Research & Management Science**

Category Description:

Operations Research & Management Science includes resources on the definition, analysis, and solution of complex problems. Relevant topics in this category include mathematical modeling, stochastic modeling, decision theory and systems, optimization theory, logistics, and control theory.

127. **Ophthalmology**

Category Description:

Ophthalmology covers resources on the eye, its diseases, and refractive errors. Coverage includes research on the cornea, retina, and eye diseases. This category also includes resources on physiological optics and optometry as well as reconstructive surgery.

128. **Optics**

Category Description:

Optics includes resources that deal with the genesis and propagation of light, the changes that it undergoes and produces, and other phenomena closely associated with it. Resources in this category cover subject areas such as lasers and laser technology, infrared physics and technology, microwave technology, quantum optics, lightwave technology, fiber optics, opto-electronics, and photonics. Resources on photometry and luminescence are also included in this category.

129. **Ornithology**

Category Description:

Ornithology covers resources concerning many aspects of the study of birds, including avian biology, field ornithology, avian biochemistry and physiology, avian systematics and taxonomy, raptor research, bird behavior and migration.

130. **Orthopedics**

Category Description:

Orthopedics covers resources on surgery and medical appliances as a means to preserve or restore function or alleviate pain in the musculoskeletal system, particularly the bones and joints.

131. **Otorhinolaryngology**

Category Description:

Otorhinolaryngology covers resources on basic and clinical research and medicine of the ears, nose and throat.

132. **Paleontology**

Category Description:

Paleontology includes resources that focus on the study of life and physical conditions, such as climate and geography, of past geological periods as recorded by fossil remains.

133. **Parasitology**

Category Description:
Parasitology covers resources concerning many aspects of the study of parasites, organisms that live in or on other living organisms, deriving benefits for themselves and often causing harm to their hosts.

134. **Pathology**

Category Description:
Pathology includes resources specializing in the techniques, causes, and developmental effect of disease on living tissue. This category also considers the medical and biomedical applications of histological and cytogenetic methods, the development and use of novel techniques and diagnostic applications, and the pathologic study of specific tissues or diseases.

135. **Pediatrics**

Category Description:
Pediatrics covers resources on basic and clinical research in pediatrics. Numerous pediatric specialties are covered including, cardiology and respiratory systems, dentistry, dermatology, developmental behavior, gastroenterology, hematology, immunology and infectious diseases, neurology, nutrition, oncology, psychiatry, surgery, tropical medicine, urology, and nephrology. Coverage also includes perinatology, neonatology, and adolescent medicine.

136. **Peripheral Vascular Disease**

Category Description:
Peripheral Vascular Disease covers resources on arterial occlusive disease (atherosclerosis or hardening of the arteries), venous obstruction and clotting, venous incompetence/insufficiency, cerebrovascular disease, aneurysms, vasospastic disorders, and other vascular disorders. This category also covers hypertension, circulation, and stroke. Resources on the diagnosis, treatment, and prevention of heart diseases are covered in the Cardiac & Cardiovascular Systems category.

137. **Pharmacology & Pharmacy**

Category Description:
Pharmacology & Pharmacy covers resources on the discovery and testing of bioactive substances, including animal research, clinical experience, delivery systems, and dispensing of drugs. This category also includes resources on the biochemistry, metabolism, and toxic or adverse effects of drugs.

138. **Physics, Applied**

Category Description:
Physics, Applied covers those resources dealing with the applications of condensed matter, optics, vacuum science, lasers, electronics, cryogenics,

magnets and magnetism, acoustical physics, and mechanics. This category also may include resources on physics applications to other sciences, engineering, and industry.

139. **Physics, Atomic, Molecular & Chemical**

Category Description:

Physics, Atomic, Molecular & Chemical includes resources concerned with the physics of atoms and molecules. Topics covered in this category include the structure of atoms and molecules, atomic and molecular interactions with radiation, magnetic resonances and relaxation, Mossbauer effect, and atomic and molecular collision processes and interactions.

140. **Physics, Condensed Matter**

Category Description:

Physics, Condensed Matter covers resources that deal with the study of the structure and the thermal, mechanical, electrical, magnetic, and optical properties of condensed matter. Topics covered in this category include superconductivity, surfaces, interfaces, thin films, dielectrics, ferroelectrics, and semiconductors. This category also includes resources from the former category of Solid State Physics as well as resources on condensed fluids.

141. **Physics, Fluids & Plasmas**

Category Description:

Physics, Fluids & Plasmas covers resources on the kinetic and transport theory of fluids, the physical properties of gases, and the physics of plasmas and electric discharges. This category may include resources on nuclear fusion.

142. **Physics, Mathematical**

Category Description:

Physics, Mathematical includes resources that focus on mathematical methods in physics. It includes resources on logic, set theory, algebra, group theory, function theory, analysis, geometry, topology, and probability theory that have applications in physics.

143. **Physics, Multidisciplinary**

Category Description:

Physics, Multidisciplinary covers resources having a general or interdisciplinary approach to physics. This category also includes theoretical and experimental physics as well as special topics that have relevance to many areas of physics.

144. **Physics, Nuclear**

Category Description:

Physics, Nuclear includes resources on the study of nuclear structure, decay, radioactivity, reactions, and scattering. Resources in this category focus on low-energy physics. High-energy physics is covered in the PHYSICS, PARTICLES & FIELDS category.

145. **Physics, Particles & Fields**

Category Description:

Physics, Particles & Fields includes resources on the study of the structure and properties of elementary particles and resonances and their interactions. Resources in this category focus on high-energy physics. Low-energy physics is covered in the PHYSICS, NUCLEAR category.

146. **Physiology**

Category Description:

Physiology includes resources concerned with the normal and pathologic functioning of living cells, tissues, and organisms. Topics include comparative physiology, molecular biochemistry of cell function, applied physiology, and pharmacological intervention in pathophysiological processes.

147. **Plant Sciences**

Category Description:

Plant Sciences covers resources concerning many aspects of the study of plants including systematic, biochemical, agricultural, and pharmaceutical topics. This category includes materials on higher and lower plants, terrestrial and aquatic plants, plant cells, entire plants, and plant assemblages.

148. **Polymer Science**

Category Description:

Polymer Science includes all resources dealing with the study, production, and technology of natural or synthetic polymers. Resources on polymeric materials are also covered in this category.

149. **Primary Health Care**

Category Description:

Primary Health Care covers resources on all aspects of family medicine and primary health care services, including first contact, health assessments, laboratory and diagnostic procedures, medication management, disease prevention, early diagnosis and treatment and comprehensive strategies to improve the health status of individuals and communities.

150. **Psychiatry**

Category Description:

Psychiatry covers resources on clinical, therapeutic, research, and community aspects of human mental, emotional, and behavioral disorders.

151. **Psychology**

Category Description:

Psychology is concerned with resources on the study of human behavior and mental processes. This category covers the biological and neurological underpinnings of perception, thought, and behavior; psychological development and change over the life span; in addition to emotional and

mental disturbances and diseases and their treatment. Resources that report on animal behavior to illuminate human behavior and mental processes are also covered.

152. **Public, Environmental & Occupational Health**

Category Description:

Public, Environmental & Occupational Health covers resources dealing with epidemiology, hygiene, and health; parasitic diseases and parasitology; tropical medicine; industrial medicine; occupational medicine; infection control; and preventive medicine. Also included are resources on environmental health; cancer causes and control; aviation, aerosol, and wilderness medicine.

153. **Radiology, Nuclear Medicine & Medical Imaging**

Category Description:

Radiology, Nuclear Medicine & Medical Imaging covers resources on radiation research in biology and biophysics. Resources in this category focus on interventional radiology, investigative radiology, neuroradiology, radiotherapy, and oncology. Nuclear Medicine resources are concerned with the diagnostic, therapeutic, and investigative use of radionuclides. Medical Imaging resources are concerned with computerized medical imaging and graphics.

154. **Rehabilitation**

Category Description:

Rehabilitation covers resources on therapy to aid in the recovery or enhancement of physical, cognitive, or social abilities diminished by birth defect, disease, injury, or aging.

155. **Remote Sensing**

Category Description:

Remote Sensing includes resources on the technique of remote observation and of obtaining reliable information about physical objects and the environment through the process of recording, measuring, and interpreting photographic images and patterns of electromagnetic radiation from space. This category also covers resources on the applications of remote sensing in environmental, atmospheric, meteorological, geographic, and geoscientific observations. Resources on geographic information systems that deal in large part with remote sensing are also included.

156. **Reproductive Biology**

Category Description:

Reproductive Biology includes resources that cover reproduction in humans, animals, and plants. This category ranges from the molecular biology of reproduction through reproductive nutrition, immunology, and toxicology.

157. **Respiratory System**

Category Description:
Respiratory System covers resources on all aspects of respiratory and lung diseases, including their relation to cardiovascular and thoracic surgery and diseases.

158. **Rheumatology**

Category Description:
Rheumatology covers resources on clinical, therapeutic, and laboratory research about arthritis and rheumatism, the chronic degenerative autoimmune inflammatory diseases that primarily affect joints and connective tissue.

159. **Robotics**

Category Description:
Robotics includes resources that cover the branch of engineering devoted to the design, training, and application of robots, mechanical devices capable of performing a variety of manipulation and locomotion tasks. Resources in this category draw from the fields of mechanical and electrical engineering, cybernetics, bionics, and artificial intelligence.

160. **Soil Science**

Category Description:
Soil Science covers resources concerning many aspects of the formation, nature, distribution, and utilization of soils including soil biology and fertility, soil conservation and tillage research, soil contamination and reclamation, soil biochemistry, and soil chemistry and physics.

161. **Spectroscopy**

Category Description:
Spectroscopy covers resources concerned with the production, measurement, and interpretation of electromagnetic spectra arising from either emission or absorption of radiant energy by various sources. This category includes resources that report on any of several techniques for analyzing the spectra of beams of particles or for determining mass spectra.

162. **Sport Sciences**

Category Description:
Sport Sciences covers resources on the applied physiology of human performance, physical conditioning for sports participation, optimal nutrition for sports performance, and the prevention and treatment of sports-related injuries and diseases. This category also includes resources on sport psychology and sociology.

163. **Statistics & Probability**

Category Description:
Statistics & Probability covers resources concerned with methods of obtaining, analyzing, summarizing, and interpreting numerical or

quantitative data. Resources on the study of the mathematical structures and constructions used to analyze the probability of a given set of events from a family of outcomes are also covered.

164. **Substance Abuse**

Category Description:

Substance Abuse covers resources on the behavior, education, treatment, and research of alcohol, drug, and other substances of addiction.

165. **Surgery**

Category Description:

Surgery covers resources on general surgical topics including the different types of surgery (cardiovascular, neurosurgery, orthopedic, pediatric, or vascular); allied disciplines of surgery (surgical oncology, pathology, or radiology); and surgical techniques (arthroscopy, microscopy, or endoscopy).

166. **Telecommunications**

Category Description:

Telecommunications covers resources on the technical and engineering aspects of communications over long distances via telephone, television, cable, fiber optics, radio, computer networks, telegraph, satellites, and so on. Other relevant topics include electronics, opto-electronics, radar and sonar navigation, communications systems, microwaves, antennas, and wave propagation.

167. **Thermodynamics**

Category Description:

Thermodynamics includes resources that focus on the areas of physics examining the transformations of matter and energy in physical and chemical processes, particularly those processes that involve the transfer of heat and changes in temperature. Relevant topics in this category include cooling and heating systems, cryogenics, refrigeration, combustion, energy conversion, and thermal stresses.

168. **Toxicology**

Category Description:

Toxicology covers resources that focus on the identification, biochemistry, and effects of harmful substances, including the side effects of drugs, in animals, humans, and the environment.

169. **Transplantation**

Category Description:

Transplantation covers resources that focus on the assimilation of grafted tissue and the reconstitution of removed organs or parts of organs. The coverage focuses on transplantation procedures and the maintenance of transplanted tissues or organs. Specific transplantation coverage focuses on heart, lung, kidney, and bone marrow.

170. **Transportation Science & Technology**

Category Description:
Transportation Science & Technology covers resources on all aspects of the movement of goods and peoples as well as the design and maintenance of transportation systems. Topics covered in this category include logistics, vehicular design and technology, and transportation science and technology. Note: Resources that concentrate on transportation safety, policy, economics, and planning appear under the TRANSPORTATION category in the SSCI.

171. **Tropical Medicine**

Category Description:
Tropical Medicine covers resources on the study and treatment of disease, parasites, and other medical conditions unique to or originating in tropical regions.

172. **Urology & Nephrology**

Category Description:
Urology & Nephrology covers resources on the diagnosis and treatment of diseases of the genitourinary tract and kidneys. This category includes general urology and nephrology as well as specialty resources on the prostate, dialysis and other blood purification techniques, transplantation, and renal failure.

173. **Veterinary Sciences**

Category Description:
Veterinary Sciences covers resources concerning both the research and clinical aspects of animal health, diseases, injuries, nutrition, reproduction, and public health. This category includes materials on companion, farm, zoo, laboratory, wild, and aquatic animals.

174. **Virology**

Category Description:
Virology includes resources dealing with all aspects of viral organisms and host-virus interactions. Resources in this category cover the molecular, biochemical, and cellular studies of plant-, animal-, and human-specific viruses, as well as bacteriophages. This category also contains materials on medical virology and pathogenesis and treatment of viral diseases.

175. **Water Resources**

Category Description:
Water Resources covers resources concerning a number of water-related topics. These include desalination, ground water monitoring and remediation, hydrology, irrigation and drainage science and technology, water quality, hydraulic engineering, ocean and coastal management, river research and management, waterways and ports.

176. **Zoology**

Category Description:

Zoology covers resources concerning a broad range of topics on the study of animals. This category ranges from animal behavior and animal physiology to some aspects of animal ecology. The category does not include veterinary medicine, ornithology, or most aspects of entomology.