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Efficient introduction to scoping review: From theoretical modeling to practical application

E.V. Tikhonova[1], **M.A. Kosycheva**[2]
[1] *MGIMO University, Moscow, Russian Federation*
[2] *Sergo Ordzhonikidze Russian State University for Geological Prospecting (MGRI), Moscow, Russian Federation*
✉ *tikhonova.e.v@inno.mgimo.ru*

Abstract. Despite the number of internationally recognized recommendations for the efficient conducting of scoping reviews, the writing of their introductions remains conceptually and methodologically undeveloped, which leads to fragmentation of argumentation, decreases the persuasiveness of the text, and limits interdisciplinarity. This study aims to develop recommendations for the effective design of introductions to scoping reviews, highlighting the genre-specific features that distinguish them from introductions to original empirical studies. The analysis is based on a corpus of 40 introductions published in first-quartile Scopus-indexed journals in the field of education. The procedure of genre-rhetorical analysis was used with recording the moves and steps of the introduction, their functions, possible focuses, and typical errors. The reliability of the annotation was ensured by independent marking by two experts with subsequent checking of inter-rater agreement (Cohen's Kappa). The conceptual support was provided by international guidelines for conducting reviews (*Joanna Briggs Institute Manual for Evidence Synthesis*; *PRISMA-ScR*), as well as studies on genre analysis of academic discourse and knowledge mapping. The three-move structure of the introduction to scoping reviews was reconstructed by the authors and further developed by specifying the functions of each step and possible variants of their implementation. The resulting model is considered in a multi-aspect perspective: as a tool for academic writing instructors, as a guide for editorial and peer review practice, and as methodological support for authors. The proposed structure of the introduction to the scoping review can serve as a teaching tool for students and novice researchers and support editors and reviewers in assessing manuscripts.

Keywords: scoping review, scoping review introduction, academic discourse structure, academic writing, introduction rhetorical organization, scholarly communication, editorial practices

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Эффективное введение к обзору предметного поля: от теоретической модели к практическому применению

Е.В. Тихонова[1], **М.А. Косычева**[2]
[1] *МГИМО Университет МИД России, г. Москва, Российская Федерация*
[2] *Российский государственный геологоразведочный университет имени Серго Орджоникидзе, г. Москва, Российская Федерация*
✉ *tikhonova.e.v@inno.mgimo.ru*

Резюме. Несмотря на существование целого ряда международно признаваемых рекомендаций по эффективному созданию обзоров предметного поля, конструирование введений к обзорам предметного поля остается концептуально и методологически неразработанным, что приводит к фрагментации аргументации, снижению убедительности текста и ограничивает междисциплинарный

научный обмен. Цель настоящего исследования заключается в формулировании рекомендаций по эффективному конструированию введения к обзору предметного поля исходя из его риторической функции. Эмпирической базой послужил корпус из 40 введений к обзорам предметного поля, опубликованным в журналах первого квартиля, индексируемых в базе данных Scopus. Применялась процедура жанрово-риторического анализа с фиксацией ходов и шагов введения, их функций, возможных фокусов и типичных ошибок. Надежность аннотаций обеспечивалась независимой разметкой двумя экспертами с последующей проверкой межэкспертного согласия (Cohen's kappa). Концептуальной опорой послужили международные руководства по подготовке обзоров (*Joanna Briggs Institute Manual for Evidence Synthesis*; *PRISMA-ScR*), а также исследования по жанровому анализу академического дискурса и картографированию знаний. Реконструированная авторами трехходовая структура введения к обзору предметного поля была подвергнута дальнейшей разработке посредством уточнения функций каждого хода и возможных вариантов их текстовой репрезентации в тесте рукописи статьи. Полученная модель рассмотрена в многоаспектной перспективе: как инструмент в контексте обучения академическому письму, как ориентир для редакционной практики и практики рецензирования, а также как методологическая опора для авторов. Предложенная структура введения к обзору предметного поля может служить инструментом обучения студентов и начинающих исследователей, поддержкой для редакторов и рецензентов при оценке рукописей.

Ключевые слова: введение к обзору предметного поля, структура академического дискурса, академическое письмо, риторическая организация введения, научная коммуникация, редакторские практики

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INTRODUCTION

In international academic practice, the genre of the scoping review has become a key tool for systematically mapping scientific domains characterized by high interdisciplinarity, conceptual heterogeneity, and methodological fragmentation [1–3]. Unlike the systematic review, which focuses on evaluating the quality of evidence when synthesizing cumulative empirical findings for a specific research question, the scoping review emphasizes the identification of conceptual, methodological, and terminological configurations of a research field, as well as the detection of gaps in the research landscape [1]. One of the central functions of the scoping review is to outline directions for future research, which makes it particularly relevant in the context of rapidly increasing publication activity and the decentralization of epistemological frameworks [4; 5].

The methodological maturity of the genre is confirmed by the development and institutionalization of international standards: from the foundational framework proposed by Arksey and O'Malley [4] to the refined recommendations of Levac et al. [6] and the updated *Joanna Briggs Institute Manual* [2]. Bibliometric studies, in turn, demonstrate a significant growth in the number of scoping reviews across various fields of knowledge, including medical education, where they rank second among all review genres [7]. However, despite the availability of detailed methodological protocols, the rhetorical organization of the introduction to a scoping review remains underdeveloped. As a result, authors often confine themselves to listing structural elements (establishing context, identifying a gap, defining the aim) without explicating their functional roles [8; 9]. In practice, this leads to situations where even experienced researchers, skilled in literature search and selection within the functional domain of the scoping review, encounter difficulties in substantiating the significance of the review and in constructing an introduction capable of convincing the reader of its novelty and relevance.

The cost of this methodological gap is critically high: manuscripts are rejected by editors at the stage of initial screening, studies with potentially important findings fail to receive due recognition, and authors lose the opportunity to influence the development of the scientific domain in which they are working. In the context of intensifying publication competition and the decreasing time

reviewers can devote to manuscript assessment, the quality of the introduction becomes a decisive factor for academic success [1].

An introduction to a scoping review cannot be reduced to a mere declaration of the topic or a simple statement of an existing knowledge gap. Its critically important function is to set the conceptual boundaries of the study and to provide the foundation for the entire methodological architecture of the review [3]. At this stage, the author delineates the scope of the key concepts and establishes the framework within which the literature search, selection, and synthesis will be conducted [10; 11]. For this reason, absolute transparency in the presentation of information is crucial. For instance, in the absence of a single terminological base, it is necessary to justify which definitions have been adopted and on what theoretical or empirical grounds. If the review is interdisciplinary, the inclusion of sources from multiple fields of knowledge must be explained, together with an account of how such breadth enhances the analytical perspective and strengthens the representativeness of the search [1].

An effective introduction demonstrates not only the author's familiarity with the subject domain but also an understanding of its internal configuration: competing conceptualizations, differences in methodological approaches, unresolved questions, and areas of controversy. This position functions as a filter, ensuring coherence between the setting of the research question, the logic of the search and selection criteria, and the eventual structure of data synthesis [2]. The introduction must also justify the choice of the scoping review as the appropriate type of study, show the density and fragmentation of the existing literature, identify conceptual and methodological gaps, and set the research question in terms of knowledge mapping. In this way, the introduction lays down the analytical framework that determines the logic of all subsequent procedures [2; 3].

Based on the study that empirically substantiated the rhetorical structure of the *Introduction* to the scoping review[1], this article describes the practical testing of this model with an emphasis on the possibilities of its integration into educational, research, and editorial practice. The absence of a generally accepted rhetorical model as a tool for constructing an introduction to a scoping review leads to the fragmentation of its argumentation, reduces the persuasiveness of the presentation of the results obtained, and violates the genre specificity of the scoping review. Together, these factors negatively affect not only the quality of individual scoping reviews but also the functional effectiveness of scholarly communication, thus limiting the possibilities of productive knowledge exchange between researchers.

The aim of this article is to develop and present methodological recommendations for constructing an introduction to a scoping review based on an empirically validated rhetorical structure, which enables correlating genre conventions with the analytical tasks of this type of research.

THEORETICAL FRAMEWORK

Constructing the introduction to a scoping review constitutes a pivotal stage of the study, as it establishes the analytical framework (the conceptual structure that defines the boundaries of the field under consideration, the set of concepts and dimensions to be included in the analysis), and the anticipated relations among them. By means of this framework, the author specifies which elements of the research field are subject to examination, how they relate to one another, and for what purpose the review is being undertaken: whether to map key concepts, identify gaps, refine terminology, or prepare the ground for subsequent empirical studies.

The content and configuration of this analytical framework are largely shaped by the epistemological stance[2] of the researcher, namely their

[1] Tikhonova E.V., Kosycheva M.A. Rhetorical structure of scoping review introductions: a genre-based model and its functions. *Training, Language and Culture*. 2025;9(4). (in press).

[2] The epistemological stance of the author determines what is regarded as knowledge, how it is generated, and how it should be represented. In the context of a scoping review, epistemology defines how research questions are framed (for example, descriptive or explanatory), what kinds of data are considered relevant (objective facts or contextual interpretations), and how such data are searched for, selected, and synthesized. This is not a mere theoretical "superstructure," but a practical orientation that shapes every decision throughout the review process.

assumptions about the nature and sources of scientific knowledge, as well as the ways in which knowledge is generated and interpreted. In the context of scoping reviews, the most common orientations are interpretivist, constructivist, and, less frequently, post-positivist. An interpretivist stance assumes that knowledge is not absolute but emerges in the interaction between the researcher and the object of study [3]. A constructivist perspective posits that key categories and concepts are not predetermined entities but are constructed in the course of the research itself. Both approaches align well with the flexible, iterative nature of scoping reviews, which allow for the adjustment of inclusion criteria and search strategies as analytical insights accumulate [7; 11]. A post-positivist stance, by contrast, prioritizes maximal objectivity, formalized definitions, and strictly prescribed methods [10; 12]. Its application to scoping reviews is possible but requires conscious alignment with the exploratory and adaptive character of the genre.

The epistemological stance articulated in the introduction directly shapes the methodological architecture of the review (Table 1). First, it determines the strategy for literature searching, including the choice of keywords, synonyms, their contexts, and the range of sources (for instance, whether or not to include grey literature). Second, it sets the relevance criteria for selecting publications, which must logically follow from the stated aim and research question. Third, the epistemological stance directly predetermines the structure of data synthesis, since it sets the guidelines by which the found information will be combined, grouped, and interpreted. The conceptual scheme, therefore, functions as an architectonic frame that defines which categories will be established, in what sequence they will be discussed, and what logical relationships will be traced among them [1; 2; 10].

For example, within an interpretivist orientation, data synthesis is typically organized around identifying and comparing different semantic and contextual interpretations of key concepts. The coexistence of multiple, competing conceptual perspectives is allowed, and the purpose of synthesis is not to eliminate contradictions but to capture this diversity by delineating zones of convergence and divergence. In a constructivist approach, the structure of synthesis evolves dynamically: at the early stages of analysis, provisional categories may be identified, which are then refined or reconfigured as more data accumulate. As a result, synthesis reflects not only the final configuration of the field but also the process through which it is constructed during the review. In a post-positivist logic, synthesis is based on pre-defined categories and the strict typology outlined in the introduction. Its primary function is to systematize data within fixed boundaries, minimizing subjective interpretation and ensuring replicability of results.

Thus, the introduction to a scoping review does more than simply inform the reader about the topic of the study; it establishes the methodological logic through which data will be integrated. It determines whether the synthesis will take the form of a rigid, pre-structured scheme reflecting fixed categories or a flexible mapping that accommodates interpretive and contextual variety. Without an explicitly articulated epistemology, a scoping review risks becoming methodologically incoherent, as its aims and objectives may conflict with the methods of searching and selecting followed by the synthesizing of evidence [3; 10].

MATERIALS AND METHODS

Analytical framework

The recommendations presented in this article are based on the results of an empirical analysis of 40 introductions to scoping reviews published in high-impact journals indexed in the Scopus database (Table 2; Appendix)[3]. This corpus made it possible to identify stable rhetorical moves and steps and to evaluate the variability of their implementation across different disciplinary contexts.

[3] Tikhonova E.V., Kosycheva M.A. Rhetorical structure of scoping review introductions: a genre-based model and its functions. *Training, Language and Culture*. 2025;9(4). (in press).

Table 1. Influence of Epistemological Stance on the Configuration of a Scoping Review

Epistemological orientation	Key characteristics	Impact on the Introduction	Impact on the methodological configuration of the review
Interpretivist	Knowledge is understood as the outcome of interaction between the researcher and the object of study; it emerges in the process of engaging with the material; context and variability of interpretations are crucial.	The Introduction emphasizes the multiplicity of approaches, terminological and methodological variability; it justifies the need to identify diverse perspectives and contexts.	**Literature search:** flexible selection of search terms, broad coverage of terms and contexts, inclusion of sources across disciplines and regions. **Source selection:** various data formats, including qualitative studies, reports, expert opinions, and grey literature are suitable. **Synthesis:** comparison and contextualization of different interpretations; identification of areas of consensus and divergence rather than unification into a single approach.
Constructivist	Knowledge is not merely synthesized from sources but created by the researcher; concepts and categories are generated in the course of the study; the focus is on the process of knowledge construction; flexibility and iterativity* are emphasized (criteria evolve during analysis).	The Introduction highlights the incomplete structuring of the field and the need to construct a conceptual map "in the course" of analysis; it argues for the value of the scoping review as a tool for constructing a comprehensive representation.	**Literature search:** iterative refinement of search terms as the review progresses. **Source selection:** relevance criteria may be adjusted based on preliminary analysis of retrieved sources. **Synthesis:** building a new conceptual framework during the analysis; initial categories may be transformed; step-by-step development of a taxonomy is possible; synthesis reflects the process of constructing a conceptual scheme, not only its final form.
Post-positivist	Knowledge is objective, though not absolute; emphasis is placed on verifiability and replicability; reliance on formalized procedures and strict definitions.	The Introduction establishes clear field boundaries, set narrow and operationalized research questions**, provides strict definitions and criteria; it justifies the need for systematization while maintaining verifiability.	**Literature search:** formalized queries predominantly in peer-reviewed sources; fixed keywords, synonyms, and databases; strict exclusion of non-peer-reviewed sources. **Source selection:** rigid, pre-defined inclusion and exclusion criteria. **Synthesis:** structured integration of data into pre-determined categories; minimization of subjective interpretations; focus on comparability and replicability.

* Iterativity refers to a principle of research design in which the steps of a study are not performed strictly once in a fixed sequence but are repeated and refined multiple times as information accumulates and the researcher's understanding of the topic deepens. In the context of a scoping review, iterativity means that: (1) the literature search can be conducted in several rounds, with the addition of new keywords, databases, or refined filters after analyzing the initial results; (2) the inclusion and exclusion criteria may be adjusted based on the preliminary screening of retrieved publications if new relevant aspects of the topic are identified; (3) the analytical framework and categories used for data synthesis can be modified and expanded as work with the material progresses.

** Operationalized research questions are those in which abstract concepts are broken down into concrete, observable, or measurable indicators that can guide the search for and analysis of literature. For example, the question "*How do digital technologies influence the educational process in universities*?" is non-operationalized, because it is unclear what is meant by "influence," which technologies are considered, and what exactly constitutes the "educational process." In contrast, the question "*What evidence of the effectiveness of using online platforms* (*LMS, MOOC*) f*or delivering lectures and assessing student performance has been reported in peer-reviewed journals between 2015 and 2024, and how does this use affect students' academic achievement*?" is operationalized, since it specifies the object (online platforms: LMS, MOOC), the context (lecturing and assessment), the time frame (2015–2024), the data source (peer-reviewed journals), and the evaluation criterion (student achievement).

The conceptual basis for the development of the recommendations was provided by international standards for the conducting of scoping reviews, primarily the *Joanna Briggs Institute Manual for Evidence Synthesis* [2] and the *PRISMA-ScR* guidelines [5], which set requirements for transparency and reproducibility in search, selection, and analysis procedures. Additional methodological grounding was offered by studies in the field of genre analysis of academic discourse [13; 10; 14], which make it possible to consider the introduction of a scoping review as a distinct rhetorical module that provides the foundation for the entire argumentative structure of the review. A further methodological reference point was provided by studies on knowledge mapping methodology and the specific challenges of conducting interdisciplinary reviews [1; 15; 16].

In this study, the authors referred to John Swales's rhetorical model of the Introduction to original empirical research articles, known as "Creating a Research Space" (CARS)[4] [17], which was subsequently modified by a number of scholars to reflect the specifics of IMRAD-structured research articles [18; 19; 20; 21] and to account for disciplinary variation [22; 23; 24]. In existing models of rhetorical organization developed for empirical research introductions, the sequence of moves and steps is primarily aimed at identifying a research niche and articulating a contribution to the production of new knowledge [25]. While this logic has proven effective in the genre of original research articles, it is insufficient for scoping reviews. The objectives of the scoping review genre are of a fundamentally different nature: the emphasis is not on introducing new data but on reconstructing an already established domain

[4] The model comprises three main moves: (1) establishing a research territory, (2) establishing a research niche, and (3) occupying the niche.

Table 2. Functional rhetorical structure of moves and steps in the introduction to a scoping review

Move	Step	Function
Move 1. Establishing the scope as the object of analytical reconstruction	**Step 1.1.** Introducing the scope and outlining its problem landscape	To establish the scope as an object of inquiry by delineating its current boundaries and subject content
	Step 1.2. Diagnosing the epistemological and methodological diffuseness of the subject field	To substantiate the need for reconstructing the scope by pointing to its internal fragmentation
	Step 1.3. Identification of changes enhancing the relevance of reconstruction	To justify the necessity of a scoping review at this particular stage of scientific knowledge development
Move 2. Stating the epistemological necessity of a scoping review	**Step 2.1.** Highlighting the limitations of existing syntheses and systematizations	To transform the awareness of fragmentation into a rationale for renewed analytical generalization
	Step 2.2. Formulation of the research task as a reconstruction of the subject field	To formulate the research task as the identification of the logic, structural organization, and latent patterns of development within the field
	Step 2.3. Justification of the relevance of the reconstruction for the scholarly community	To demonstrate the necessity of the review and to indicate the scholarly audience it is intended for
Move 3. Defining analytical foundations and reconstruction boundaries	**Step 3.1.** Defining the conceptual focus of the review	To define the analytical framework and the strategy for presenting the material
	Step 3.2. Identification of the author's epistemological stance	To set the interpretive perspective and demonstrate how the author "sees" the field
	Step 3.3. Description of the boundaries of reconstruction and goal-setting	To establish the boundaries of observation without reducing them to a purely formal methodology

of inquiry. The introduction to a scoping review must go beyond identifying a gap in the literature; it should offer an analytical interpretation of accumulated knowledge, trace structural lines of disciplinary development, highlight contradictions, and present the architecture of the research field [2; 3; 26]. These aims limit the applicability of traditional rhetorical models and necessitate their deliberate modification. The structure proposed in this article is grounded in the specificities of the field review genre and is designed to ensure coherence between its knowledge-mapping function and the argumentative logic articulated in the introduction [4; 6; 27].

Procedure for developing recommendations

The development of methodological guidelines for constructing introductions to scoping reviews was carried out in several stages:

1) systematization of the rhetorical model: analysis of empirically identified moves and steps in Introductions to scoping reviews into a structured methodological scheme, including the definition of functions, possible thematic focuses, interrelations between steps, and the identification of typical errors;

2) comparison with international standards: the integration of the requirements of the JBI Manual, PRISMA-ScR, and other guidelines to develop a universal structure applicable across different disciplinary contexts;

3) development of commentaries: the creation of explanatory notes for each rhetorical step, the description of typical errors, the selection of illustrative examples from the corpus, and the creation of author-designed examples aimed at preventing identified errors;

4) practical adaptation: the adjustment of the recommendations to the needs of three professional contexts: educational (training of postgraduates and researchers), research (designing scoping reviews), and editorial (expert evaluation and peer review of introductions);

5) iterative validation: the refinement of the patterns and the structure of the recommendations by the authors of the study, first individually and then through synthesis of two versions into a unified framework.

Systematization of the rhetorical model

At the first stage of the analytical procedure, each researcher independently annotated the corpus of 40 introductions to scoping reviews, recording the presumed functions of rhetorical moves and steps along with their thematic focuses. To minimize interpretive bias, a "double coding" strategy was employed: the results of annotation were not discussed until the completion of the initial analysis cycle.

At the second stage, the authors compared the individual codings obtained. Inter-rater reliability was assessed using *Cohen's Kappa*, which yielded a value indicating a high level of agreement, corresponding to the category of substantial agreement on the Landis and Koch scale [28]. Discrepancies were addressed in iterative working sessions, during which the description of step functions and their interrelations was refined, and the definitions that had generated the greatest divergence were revised.

At the third stage, the results of the discussions were consolidated into a single structured scheme, in which each element was accompanied by an analytical description of its function, acceptable thematic focuses, and typical implementation errors. The final version of the scheme represented a negotiated outcome that reflected not only the empirically identified elements of the rhetorical structure but also their functional roles and interconnections.

RESULTS

This section presents recommendations for constructing the introduction to a scoping review. The recommendations are organized according to three rhetorical moves, which are further elaborated through a set of steps. For each step, we provide explanations of its function, possible thematic focuses, and typical errors, along with examples of effective textual implementation. This format makes it possible to adapt the rhetorical model of the introduction to a scoping review to the practical needs of researchers, academic writing instructors, and journal editors.

Move 1. Establishing the scope as the object of analytical reconstruction

This move establishes the analytical framework for the future review. Its primary rhetorical task is to present the object of reconstruction as a meaningful and structured domain of knowledge, situated within a specific epistemological, institutional, and social context. By doing so, the review is framed not as an arbitrary summary of the literature but as a systematic reflection on a field that requires conceptual consolidation. The move is realized through three rhetorical steps, each responsible for clarifying a particular dimension of the reference space.

Step 1.1. "Introducing the scope and outlining its problem landscape" functions as a necessary starting point that shapes the reader's understanding of what exactly is to be reconstructed in the review. Without this step, further reconstruction risks becoming uninterpretable. This is not a matter of simply naming the topic but of defining the field as a cognitive construct, including its key concepts, objects, research questions, and internal structure. The efficiency of this step depends on the ability of the author to introduce the field as a dynamic and autonomous domain of knowledge (Table 3).

Table 3. Methodological guidelines for constructing Step 1.1 "Introducing the scope and outlining its problem landscape" in the Introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To frame a concrete object of reconstruction as a semantic space, specifying what is included in the field under study and why it warrants analysis.
Core components*	(1) A clear definition or operationalization of the field. (2) A justification for why this particular field is examined rather than adjacent ones. (3) An indication of the interdisciplinary nature of the field (if applicable), the directions of its development, or the critical problem areas identified in its evolution. For example, *"The scoping literature review on parent interactions with teachers and schools and the perceptions of both parents and teachers regarding school environments presented in this article is guided by the Middle Level Education Research Special Interest Group's (MLER SIG; part of the American Educational Research Association) new research agenda for the middle grades."* (14_3)
Typical errors**	(1) Digression into "background" or a mere chronological frame. Instead of providing a substantive conceptual account of the field (that is, a description of its key concepts, approaches, research objects, and structural features), the author limits the presentation to: a background remark, for example: *Research in the field of X has existed for several decades...*, *X has been discussed across different disciplines...*, without clarifying what exactly is being discussed, how, and in which directions; a purely chronological statement lacking analytical value, for example: *Interest in X increased after 2010...*, *In recent years, there has been a growth in publications...*. Such formulations do not explain what actually constitutes the field, which concepts define it, what methodological features it entails, or why its reconstruction is needed. (2) Superficial mentioning of the research area without reflection on its composition. Instead of explanatory descriptions with sufficient analytical depth, such as *The field of X examines...* or *X refers to a body of work devoted to...*, the author uses generic expressions lacking conceptual precision, for example: *Recently, there has been growing interest in X...*. Such wording fails to provide the reader with an understanding of what is included in the field, where its boundaries lie, and which approaches and research objects structure it. This results in the mere appearance of engaging with the topic, without fulfilling the cognitive function of the introduction.

* In this and subsequent sections, the core (mandatory) components are illustrated with examples from the corpus, coded in accordance with the article number within it (for instance, 14_3 denotes the serial number of the journal in the coding table, and 3 refers to the sequential number of the article within that journal; see Appendix).

** Here and below, typical errors are illustrated with the most frequent examples from the corpus.

Table 3 (end)

Methodological note parameter	Methodological note
	(3) Use of abstract formulas. These are impersonal, generic, and unsupported claims that fail to perform the key rhetorical function of establishing and characterizing the scope as an object of analytical reconstruction. For example: *Recently, scholars have increasingly paid attention to X...*, *In the literature, growing attention has been given to...*, *There is a rising interest in the area of Y....* Such patterns leave the field undefined: no clear definition, conceptual frames, key concepts, or objects are provided. They also omit any indication of the specificity of the research area, namely its uniqueness, structure, or dynamics. As a result, the scholarly value of systematizing or reconstructing the field remains unclear, and the introduction does not perform its navigational function, since the reader cannot discern what exactly is to be analyzed.
Recommendations for Functional Optimization***	(1) Instead of relying on general or merely nominative descriptions****, the research domain should be presented through a structural model, for example: key practices (*contextualization of pedagogical decisions under conditions of digital transformation*); dilemmas (*the tension between ethical norms and algorithmic automation*); research tasks (*assessment of identity resilience in cross-cultural contexts*). Such an approach represents the domain as a cognitively structured space of scientific inquiry rather than a mechanical aggregation of studies. This manner of presentation enables readers to grasp how knowledge within the domain is organized, and to reveal which questions are central, which positions are in competition, and which skills or methods predominate. (2) The domain should also be framed in terms of its involvement in current challenges: those of societal scale (*inequality, the digital divide, environmental risks*); institutional transformations (*the transition to blended learning*); and scholarly paradoxes and contradictions. This strategy makes it possible to justify the scientific and practical relevance of reconstructing the field, to present the review as an instrument for responding to contextual change, and to demonstrate why knowledge in this domain requires rethinking. For example: *The field of academic mobility is shaped by such global challenges as rising educational inequality, geopolitical instability, and the digital divide, which makes it necessary to analyze not only the practices of mobility but also the mechanisms of normative regulation and the ways in which mobility is transformed into a source of academic and institutional prestige.* (3) The task is not simply to describe the range of publications but to indicate the cognitive motivation for studying the field (*why it is being researched and what it helps to reveal*), as well as the mechanisms of knowledge constitution (*in what terms, with what assumptions, and within which institutional or cultural frameworks knowledge is produced*). Such a focus underscores that the field is not neutral but is shaped by ideological, theoretical, or cultural influences, thereby providing the reader with tools for a critical engagement with the scoping review. This approach is particularly important in interdisciplinary or rapidly evolving domains. For example: *Questions arising in the analysis of digital literacy cannot be adequately addressed without taking into account how the very concept of "literacy" changes under the influence of new media technologies and normative expectations, shaping the field as an arena of theoretical debates and normative projections.* (4) It is essential to employ definitional and analytical patterns that frame the research area not simply as something that "exists" or "attracts scholarly interest," but as a substantively delineated domain with its essence, structure, and epistemic function. The author should specify what precisely constitutes this field, what its conceptual and methodological frames are, and which elements are subject to reconstruction within the review. For example: *The present review encompasses studies devoted to the analysis of teaching practices in contexts of cultural and linguistic diversity. The domain is marked by a high degree of interdisciplinarity and conceptual fluidity, drawing on research in applied linguistics, critical pedagogy, and the ethnographic sociology of education.*

*** Here and in the following sections, the recommendations for functional optimization are defined by the authors on the basis of the corpus as well as their professional experience as editors of scholarly journals.

**** In the academic context, a nominative description is understood as a method of recording the object or phenomenon under study through naming (nomination) without its detailed explanation, interpretation, or analysis. In other words, the author simply lists or designates elements, concepts, categories, and phenomena without moving on to their functional characteristics, argumentation, or comparison.

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Step 1.2. "Diagnosing the epistemological[5] and methodological diffuseness[6] of the subject field" functions as the justification of the analytical necessity of the review. When a research area appears already structured and clearly conceptualized, a reconstruction might seem redundant. It is therefore essential to demonstrate that the subject of analysis is characterized by internal heterogeneity, competing approaches, divergent interpretations of core concepts, or different levels of abstraction. This step is particularly crucial for interdisciplinary or rapidly evolving domains (Table 4).

Step 1.2 is not mandatory in every case, but it becomes essential in reviews where the research domain exhibits a high degree of fragmentation, conceptual contradictions, or terminological inconsistency. If the subject field is relatively uniform, for example, a well-institutionalized and stable domain, this step may be shortened or omitted. However, when a review seeks to ensure epistemological transparency, this step becomes indispensable for legitimizing the subsequent analytical synthesis.

Step 1.3. "Identification of changes enhancing the relevance of reconstruction" fulfills the function of rhetorical actualization: the author is expected to demonstrate the relevance of conducting this review at this particular moment in time. The changes highlighted at this step may be triggered by external circumstances (for instance, the pandemic, digital transformations, or institutional reforms), as well as by scholarly developments (such as shifts in theoretical priorities, the emergence of new data, or methodological innovations). A typical error is the mere mention of changes without explaining how they have affected the structure of the research field and why they necessitate its reconstruction. Effective implementation of this step requires concrete examples of how changes influence thematic emphases, research methods, publication formats, or societal expectations of scholarly knowledge (see Table 5). This step is relevant in cases where the author seeks to underscore the timeliness of the scoping review. If the research area is relatively stable and does not undergo significant shifts, the step may be omitted. Yet in many scoping review introductions, this step serves an important motivational function, providing a rationale for why the review is needed *now* rather than earlier or later.

In all three steps of the first rhetorical move, it is pivotal not only to comply with formal expectations such as introducing the topic, citing relevant literature, and indicating relevance, but also to strategically manage the reader's attention. A scoping review begins by convincing the reader that the research domain exists as a conceptual framework that requires systematic reconstruction at this particular moment and in the specific form proposed by the author. In this way, the first rhetorical move establishes the foundation of the article argumentation and shapes the way its analytical value will be assessed.

Move 2. Stating the epistemological necessity[7] of a scoping review

Whereas the first rhetorical move defines the space of subject reconstruction by presenting the research field as an area with its specific structure, internal contradictions, and features of epistemological diffuseness, the second rhetorical move is directed toward substantiating the need for such a reconstruction and demonstrating its academic relevance. Its mission is not merely to show that the subject field exists but to explain why it requires a new analytical revision, what task the author sets, and why it is relevant from the scholarly and social perspectives. This move foregrounds the research motivation by showing that existing generalizations are insufficient and that the proposed review addresses specific analytical gaps.

[5] Epistemological diffuseness is understood as vagueness or inconsistency in defining the author's position regarding the nature and boundaries of knowledge in the analyzed research area, including uncertainty in the choice of key concepts, sources, and principles of their interpretation. It can manifest itself in the mixing of different scientific traditions without indicating this and justifying their compatibility, as well as in the absence of a clear connection between the research question and the framework for interpreting the data.

[6] Methodological diffuseness is understood as the lack of logical consistency between the stated objectives, search criteria and selection of literature, selected methods of analysis, and the structure of presentation of results. It occurs, for example, when the requirements of different standards are combined without a description of the principles of integration, or when the structure of the review does not correspond to its stated type or methodology. Both types of diffuseness reduce the transparency, reproducibility, and persuasiveness of the study.

[7] That is, the need for knowledge and ways of organizing it within the framework of the stated problematic.

Table 4. Methodological guidelines for constructing Step 1.2 "Diagnosing the epistemological and methodological diffuseness of the subject field" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To justify the necessity of the subject field analytical reconstruction by demonstrating its internal conceptual and methodological fragmentation. To show that the research area is not homogeneous: it encompasses competing research approaches, inconsistent terminologies, and divergent epistemological foundations. This step conveys to the reader that the field requires systematization not merely because of its scope, but due to its internal contradictions and semantic stratification.
Core components	(1) Indicating the existence of competing approaches, schools, terminologies, or methods. (2) Revealing how different studies interpret the same phenomena (e.g., by comparing definitions, analytical scales, or conceptual frameworks). (3) Stating epistemological differences, such as positivist, critical, constructivist, and other perspectives. (4) Explaining why these divergences complicate the perception of the field as a conceptually and methodologically coherent domain, and why they necessitate its analytical reconstruction. (5) Highlighting the fragmented nature of the corpus or the absence of a shared conceptual matrix. For example, *"Although some systematic or scoping review papers indicate that VPs can be efficacious for communication training in the medical field (Kelly et al., 2022; Lee et al., 2020), there is a lack of similar research in the allied health professions. Furthermore, allied health professions may stand to benefit the most from the use of VPs, given the documented challenges with sourcing clinical experiences for students...."*(7_1)
Typical errors	(1) Simplistic references to the "existence of different approaches" without demonstrating their substantive differences or contradictions. For example, combinations of words such as *"several models have been proposed in the literature"* or *"there are multiple perspectives"* are used without clarifying how these perspectives diverge and why such divergences matter. (2) Substitution of epistemological divergences with methodological ones: the author notes the use of different methods (*interviews, surveys, observations*) but fails to explain that these methodological choices reflect fundamentally different assumptions about knowledge, research aims, and ontology. (3) Terminating the analysis at the level of terminology: presenting *different definitions of a concept X* without addressing the underlying reasons for these differences and their implications for the interpretation of findings.
Recommendations for Functional Optimization	(1) Compare concrete definitions or analytical frameworks employed in different studies, highlighting their inconsistencies. For example: *In some works, the term "resilience" is conceptualized as an individual resource, whereas in others it is framed as a systemic property, which...* (to underline the implications of such divergences). (2) Draw attention to the existence of parallel analytical scales (e.g., micro-, meso-, and macro-levels) that remain uncoordinated and therefore hinder the cumulative development of knowledge. For example: *Although studies in this area address similar phenomena, they operate across different analytical levels – from micro-level analyses of individual cognitive mechanisms to macro-level institutional and policy frameworks. The absence of alignment among these scales impedes the construction of a coherent theoretical model.* (3) Explicitly posit the epistemological underpinnings of competing approaches, noting that divergences are not limited to methodological techniques but are grounded in fundamentally different assumptions about the nature of knowledge, its production, and its interpretation (e.g., *critical realism vs. interpretivism*). For example: *The epistemological heterogeneity of the subject field is evidenced by the coexistence of incompatible cognitive orientations, ranging from empiricist verification to critical re-examination of norms and structures. Without their explicit articulation, it is impossible to develop an integrated understanding of how knowledge is accumulated and interpreted within this domain.* (4) Emphasize that the reconstruction of the subject field is impossible without recognizing and addressing the identified fragmentation. It should be demonstrated that epistemological and methodological diffuseness is not merely a descriptive feature of the research area but a challenge that demands deliberate methodological effort on the part of the reviewer. For example: *The methodological and epistemological fragmentation observed across the analyzed sources is not simply a characteristic of a dynamic research field but a methodological challenge that necessitates a purposeful effort toward its systematic reconstruction.*

Table 5. Methodological guidelines for constructing Step 1.3 "Identification of changes enhancing the relevance of reconstruction" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To posit what has changed in the object, structure, or epistemology of the subject field, and explain why these changes render its reconstruction timely. The changes should not be treated merely as contextual background, but rather as foundations for renewing the scope.
Core components	(1) Specifying the type of changes: institutional (e.g., the transition to online education), technological (e.g., the implementation of AI), or epistemological (e.g., the shift from interpretative to computational approaches). (2) Explaining how these changes have influenced the content of research, the framing of problems, methodological choices, or publication formats. (3) Indicating why neglecting these changes would result in an incomplete or inaccurate reconstruction of the subject field. For example: *"In his well-cited paper of 1999, Brooks identified seven key fields in which simulations were routinely in use at the end of the century: vehicle simulation, entertainment, vehicle design, architectural design, NASA training, medicine, and probe microscopy. As Brooks (1999) noted at the time of the review, though, significant challenges remained for the ongoing development and adoption of VR. New technological advances have since opened up the possibility for a much wider use of XR technology in education and training (Slater, 2018)."* (4_2)
Typical errors	(1) Mentioning changes without linking them to the research field. For example, stating that *interest in online learning increased during the pandemic*, but without explaining how this transformed the very objects of analysis or the research approaches employed. (2) Cumulative listing of trends. The author enumerates technological or social shifts without specifying how they disrupted prior analytical frameworks or produced a methodological shift. (3) Unsubstantiated universality. The author claims that significant changes have taken place in the research field, yet fails to specify the nature, location, and consequences of these changes. Such statements remain at the level of rhetorical pathos and do not fulfill their argumentative function. As a result, it remains unclear to the reader what has changed: research subjects, methodologies, objects, publication formats, or normative frameworks. It is also not indicated where exactly the change has occurred: in a particular country, in one structural component of the field, in practice, or in theory. It is also not explained how these changes have reshaped the structure of knowledge: which approaches have become outdated, which themes have gained prominence, or which analytical frameworks have lost relevance. Finally, there is no explicit link to the task of reconstruction: the text does not demonstrate why the review is needed now, as well as how the changes render previous mappings of the research field incomplete.
Recommendations for Functional Optimization	(1) Present changes as triggers for redefining the research focus, demonstrating that earlier frameworks have become inadequate. For example, *The development of digital environments, regulatory reforms, and the rise of global mobility have not only altered the conditions under which the phenomenon operates but have also underscored the need to move beyond established research frames that no longer capture the structural complexity of the field.* (2) Relate changes to the evolution of the research object, showing how it has been transformed and connected to new contexts. For example, *Contemporary conditions have shifted the object of analysis beyond its former categorical boundaries. For instance, pedagogical communication can no longer be examined apart from digital platforms, which necessitates a redefinition of the conceptual frameworks of the field.* (3) Justify why previous reviews appear incomplete or outdated under the new circumstances. For example, *New contexts of functioning and conceptualization of the research object were not addressed in earlier studies, making it necessary to revise existing systematizations in light of current challenges and shifts in theoretical priorities.* (4) Use linking formulations such as: *These contradictions require a reconsideration of..., As a result of X, earlier classifications are no longer applicable..., Recent shifts have profoundly altered the way Y is studied or conceptualized...*

The rhetorical value of this move lies in creating the scientific legitimacy of the undertaken review. The reader needs not only to understand what this scoping review will cover but also why it is needed, how it differs from previous studies, and what cognitive or practical effects it may generate. Essentially, this move enables the transition from a general presentation of the research field to the establishment of a concrete analytical task. It comprises three steps, each revealing a key aspect of justification.

Step 2.1. "Highlighting the limitations of existing syntheses and systematizations" underscores a cognitive gap. Its purpose is to show that the research field has already been subject to attempts at systematization, yet these attempts remain either fragmented, outdated, or unable to capture the full complexity of the subject (Table 6). A strong implementation of this step requires more than simply noting the existence of previous reviews. It calls for their analytical evaluation: which approaches have dominated, which dimensions have been neglected, and what limitations arise from the scope, methodological choices, or epistemological positions adopted. Presenting the material in this way demonstrates that the proposed review does not duplicate earlier efforts but instead addresses identifiable gaps. An effective realization of this step typically includes explicit references to key reviews in the field and an explanation of why they fail to accomplish the task of reconstruction as defined by the present study.

Step 2.2. "Formulation of the research task as a reconstruction of the subject field". At this stage, the author specifies the aim of the scoping review, clarifying what exactly will be reconstructed, synthesized, or systematized (Table 7). The task is not limited to naming the purpose in general terms but requires a semantic clarification of its nature. The author should indicate whether the review seeks to map the subject field, identify typologies, achieve conceptual synthesis, engage in critical deconstruction, or establish a new analytical framework. It is often at this step that the terminological apparatus of the review is shaped and the key concepts are introduced, which will serve as the foundation for the subsequent reconstruction.

Step 2.3. "Justification of the relevance of the reconstruction for the scholarly community" concludes the rhetorical move by performing the function of internalizing the contribution (Table 8). At this stage, it is important for the author to demonstrate that the task set in Step 2.2 is relevant for the academic community: it can facilitate navigation through a complex and fragmented body of literature, highlight scientific priorities, inform policy decisions, or set a new research agenda. In a strong implementation, the relevance of this step is not merely declared but substantiated through explicit connections to empirical challenges, theoretical impasses, or institutional demands.

The second rhetorical move addresses the internal motivation of the scoping review and enables the reader to grasp not only the structure of the subject field but also what exactly the author does with this research domain, why, and with what consequences. Its strength lies in logical coherence: beginning with the identification of gaps in existing knowledge, moving to the setting of the research task, and culminating in the demonstration of its relevance. As a result, Steps 2.1 and 2.2 are mandatory in all types of scoping reviews, whereas Step 2.3 is particularly crucial for texts that aim at instrumentality, transdisciplinarity, or engagement with the science-policy agenda.

Move 3. Defining the conceptual focus of the review

The third rhetorical move establishes the direction of the reader's cognitive orientation and sets the conceptual parameters for the subsequent unfolding of the review. Unlike the preceding move, which is aimed at legitimizing the very necessity of reconstruction, here the author specifies how exactly the process of analysis will be organized, which method of mapping the subject field it will rely on, through which lens, with what epistemic intent, and within what boundaries. This move is especially relevant in interdisciplinary or rapidly developing domains, where the abundance of sources, competition of approaches, and semantic fragmentation require not only systematization but also a rigorous logic of selection and interpretation.

Table 6. Methodological guidelines for constructing Step 2.1 "Highlighting the limitations of existing syntheses and systematizations" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	The necessity of a new field review should be justified through a critical analysis of existing syntheses. The aim is to demonstrate that the available reviews, where they exist, are outdated, inadequate, fragmented, or insufficient for addressing the stated analytical task. Even in cases where no reviews are available, this absence itself must be identified as a gap and explained in terms of why it remains relevant.
Core components	(1) Checking and recording the presence/absence of existing scoping reviews. (2) Description of the scope, aims, and methods of the existing reviews. (3) Specification of the limitations of these syntheses, including aspects they failed to address such as temporal coverage, levels of analysis, methodological foundations, geographical scope, or discursive perspectives. (4) Substantiation of why these limitations make the existing reviews insufficient for the present analytical task. For example: *"Despite the significance of HL proficiency among nursing students, no comprehensive synthesis has been undertaken to consolidate findings, pinpoint gaps, and steer scholars towards further research"* (12_1) *Following the wide adoption of online teaching, group work is increasingly taking place in online environments [12], and challenges in online group work in higher education, in general, have been thoroughly addressed in previous research [13]. Also, within health science education specifically, several studies have investigated different aspects related to online group work (e.g., communication [14], participation and distribution of workload [14,15], technical challenges [14], the teacher's role [15–17] and how groups are created [15]). However, there is, to our knowledge, no available overview of the literature on online group work in health science education.* (14_3) *"Higher education institutions should design and redesign policy and curriculum to address the changes brought about by GenAI; they must adapt to changing educational needs and ensure equitable AI access (Perkins, 2023; Rajabi et al., 2023). However, research on its application in higher education assessment methods is still limited, and opinions vary widely, as the majority were conducted in 2023."* (2_1)
Typical errors	(1) Stating that "*no reviews exist*" without indicating the search strategy used and without considering adjacent or partial syntheses. (2) Offering a superficial or purely declarative critique, for example: "*existing reviews are incomplete*," without specifying in which respects they are incomplete. (3) Substituting argumentation with mere reference to publication date, such as "*the review was published in 2015*," without explaining what has changed since then and why this affects the adequacy of the synthesis. (4) Ignoring partial or interdisciplinary reviews that could nevertheless be relevant to the field under consideration.
Recommendations for Functional Optimization	(1) Existing reviews should be structurally compared across clear criteria such as objectives, scope and coverage, methodology, types of sources, analytical depth, and thematic or geographical focus. For example, *Although several scoping reviews address this topic, their purposes differ substantially: some are limited to descriptive cataloguing of sources (Author, 2018; Author, 2021), whereas others concentrate narrowly on methodological issues (Author et al., 2020) without attempting a comprehensive reconstruction of the research area.* (2) It is essential to specify what exactly is missing from previous syntheses. For instance, *recent empirical studies failed to compare regional research trajectories*, or *they disregard the use of digital methodologies*. (3) The argument should emphasize that the field's new configuration requires a different analytical toolkit. For example, *earlier reviews treated X as a homogeneous research area but overlooked its internal polarization.* (4) Concrete mismatches should be highlighted. For instance, *Review A considers only English-language sources, while Review B confines its analysis to theoretical publications, excluding empirical evidence.* (5) The absence of prior scoping reviews on a given topic should not be described merely as a formal informational gap but rather as a critical lacuna that prevents meaningful integration of accumulated research and hampers the epistemological consolidation of the research area itself. For example: *Despite the growing body of literature on X, the subject field still lacks a comprehensive and structured synthesis. This absence constitutes not only a bibliographic gap but also a critical deficiency that obstructs the cumulative advancement of knowledge and the conceptual maturation of the area. Without systematic reconstruction, ongoing debates remain fragmented and analytically opaque.*

Table 7. Methodological guidelines for constructing Step 2.2 "Formulation of the research task as a reconstruction of the subject field" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To define the research aim as an analytical reconstruction of the subject field, focusing on the identification of its structure, configurations, dominant and marginal areas, competing approaches, and others.
Core components	(1) A precise definition of the research task or its aim. (2) The use of analytical verbs (for example: *map, synthesize, cluster, reconstruct, identify, analyze, differentiate*) that reflect the intention to produce semantic and structural ordering of the research area. (3) Specification of the level of analysis, clarifying what exactly will be reconstructed – thematic domains, methodological approaches, conceptual clusters, historical dynamics, and so forth. (4) Differentiation from other possible aims, such as theory development or the pragmatic application of results. For example, *"To address this literature gap, this scoping review set out to identify literature on virtual reality implementation in health professions education to identify barriers to and facilitators of implementation as well as to highlight research gaps in this area."* (5_1) *"Thus, this review aims to provide a comprehensive summary of the research trends and pillars of students' engagement during the Covid-19 pandemic."* (4_1)
Typical errors	(1) Tautological or circular patterns: for example, "*Our aim is to review the literature on the topic...*" or "*This article presents an overview of research on the topic...*". Such combinations of words fail to demonstrate what the actual research task is. Characterized by a self-referential structure, circular patterns merely repeat what has already been said in other words without advancing the thought. They create the illusion of clarification but in reality contain no analytical information. For instance, *"This review is crucial because it presents important information."* (2) Lack of operationalization: the aim is stated in broad terms, but it remains unclear by what means and on what material it will be implemented. For example, "*The aim of this review is to study the literature on digital learning in higher education."* What does "study" mean in this context: a review of theories, methods, and empirical data? Which sources will be included? By what criteria will the analysis be conducted? Will this scoping review result in a mapping, a classification, or a critical examination? (3) Stating the aim as a gap without explaining how and by what parameters it will be achieved. For example, *"The aim of this review is to fill a gap in the literature on interdisciplinary approaches to climate education."* The statement does not clarify what the gap actually consists of: is it the lack of systematization, contradictory data, or the absence of an analytical framework? Also, it does not explain how this gap will be addressed: through classification, comparison, or conceptual analysis? There is no information about the criteria or parameters of analysis, such as levels of education, methodological approaches, or geographical contexts. (4) Substituting the aim with tasks: for instance, listing actions such as *"first we will describe, then classify..."* without defining an overarching research objective.
Recommendations for Functional Optimization	(1) Use patterns that reflect a constructive rather than a merely compilatory engagement with the literature. For instance: *"The aim of this scoping review is to map the conceptual structure..."*, *"We seek to identify the key clusters and recurring contradictions in this research field..."*, or *"The purpose of this scoping review is to reconstruct the epistemological organization of the research domain, which involves uncovering the principles of its internal ordering, the logic of concept formation, and the relationships between different research approaches."* For example: *"The aim of this scoping review is to address the lack of systematic synthesis in the literature on interdisciplinary approaches to climate education by identifying and comparing the dominant conceptual frameworks and instructional models employed in studies published between 2010 and 2024. The analysis focuses on theoretical foundations, levels of educational programs, and disciplinary integration, with the aim of reconstructing the structural diversity of the research field."* In this example, the gap is clearly defined (*lack of systematic synthesis*). The way it will be addressed is explicitly stated (*by identifying and comparing dominant conceptual frameworks and instructional models*). The parameters of analysis are specified (*theoretical foundations, levels of educational programs, and disciplinary integration*). Finally, the value of the reconstruction is justified (*to reconstruct the structural diversity of the research field*).

Table 7 (end)

Methodological note parameter	Methodological note
	(2) Specify the axes along which the reconstruction will be carried out, for example, *in terms of methodological approaches, chronological dynamics, or disciplinary traditions*. (3) Avoid formulaic and generic opening phrases. Instead of *"This article examines..."*, use expressions that explicitly reveal the analytical intention of the study. (4) Do not limit the introduction to a statement of purpose but also briefly indicate the anticipated analytical outcome, for example, *identifying three dominant research directions and their epistemological premises*.

Table 8. Methodological guidelines for constructing Step 2.3 "Justification of the relevance of the reconstruction for the scholarly community" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To substantiate the value that reconstructing the field brings to different groups of the scholarly community and practitioners, emphasizing both the analytical and the pragmatic functions of the scoping review.
Core components	(1) Identification of the target audiences such as researchers, educators, policymakers, and others. (2) Explanation of the specific tasks addressed by the reconstruction, including navigation, synthesis, comparison, and clarification of concepts. (3) Demonstration of the potential consequences of the review for the advancement of theresearch area or for practical applications. For example, *"Given the history and diversity of studies distributed across multiple academic disciplines, the purpose of this scoping review is to describe how the literature has studied disability in undergraduate-level STEM courses in the US."* (3_3) *"The key findings from the scoping review have been used to inform the development of interview guides in phase two of the study, where the research team will conduct in-depth interviews with both FYIC and those who administer tuition waiver programs to better understand their perspectives on how such programs impact access to post-secondary education among FYIC."* (12_2)
Typical errors	(1) Abstract statements such as *"this review is important."* (2) Lack of specificity regarding the audience: no indication of who will benefit from the review and in what way. (3) Mere repetition of the aims stated in the previous step without extending the argument toward the social or academic relevance of the outcome.
Recommendations for Functional Optimization	(1) Link the contribution of the review to already identified problems: *Given the conceptual fragmentation discussed above, this review provides a much-needed unified theoretical framework...* (2) Indicate concrete research effects: *The synthesis enables a comparative analysis...* (3) Refer to the types of applicability: *This mapping of the research field can be used in the development of a curriculum... , The review offers a scholarly foundation for decision-making regarding...*

Step 3.1. "Defining the conceptual focus of the review" demonstrates the logic by which the reconstruction will be implemented: which criteria will be applied to group the literature, and which concepts or approaches will serve as organizing principles. The aim of this step is to shape readers' expectations of the analytical framework (Table 9). A purely mechanical description of structure in the form of a sequential plan of analysis (*"first we consider A, then B"*) is absolutely unacceptable, as it deprives the review of analytical depth and reduces it to a bibliographic listing. Its efficiency depends on the definition of a research perspective that organizes the material, namely distinguishing between theoretical schools, identifying levels of analysis (individual, institutional, or macro-level), or comparing research aims or objects.

This step provides the structure for the entire review: it conveys the logic by which the main section will be organized and thereby ensures cognitive navigation for the reader. Without it, the review is perceived as an arbitrary enumeration of sources without systematization.

Step 3.2. "Identification of the author's epistemological stance" positions the author in relation to the subject field by indicating from which research perspective the reconstruction is undertaken. This step is particularly important in contexts of epistemological pluralism, where different approaches imply different criteria of representativeness and relevance. Neglecting this step may result in implicit bias: the author makes choices but does not comment on them, creating the illusion of neutrality.

Table 9. Methodological Guidelines for Constructing Step 3.1 "Defining the conceptual focus of the review" in the Introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To state the principle on which the organization of analysis in the main section of the scoping review will be based: which criteria will be applied, what logic will be followed, and from which analytical perspective the subject field will be reconstructed. This step provides cognitive navigation and removes the impression of disorder or randomness in the review.
Core components	(1) An explicit description of the principle or approach to organizing the scoping review (for instance, by themes, methodologies, types of data, levels of analysis, and so on). (2) A justification of the chosen principle as relevant to the objectives of reconstruction. (3) The use of conceptual vocabulary (for example, *"framework," "dimension," "cluster," and "axis")* rather than narrative connectors (*such as "first," "then," and "finally")*. For example: *"Previous reviews that pertain to the high-quality features of online learning have predominantly focused on blended and hybrid learning (Anthony et al., 2020; Leidl et al., 2020), K-12 education (Cavanaugh et al., 2009), nursing programs (Leidl et al., 2020), and physical education (Killian et al., 2019). In our review, we set out to synthesize the key features of high-quality online learning experiences in higher education across disciplines using a scoping review framework."* (11_3)
Typical errors	(1) A mechanical description of the text structure that is not related to the analytical task, for example: *First, we will examine the literature, then we will present the methods...* – without clarifying why the review is organized in this way and what logic underlies this structure. (2) Lack of focus: the review is either unstructured or structured arbitrarily, without explaining the rationale for the grouping. (3) Narrative rather than analytical logic: the structure is presented as a chronological or thematic sequence but not as an analytical framework. (4) Circularity: for example, stating that *the review will be organized around "key themes,"* while the *"key themes"* themselves are not defined, and it is not explained how they were identified.
Recommendations for Functional Optimization	(1) Use concepts such as *dimension, axis, perspective, classification, or clustering* to indicate the analytical principle guiding the grouping of sources. (2) Justify the chosen focus through the aims of the scoping review: if the task is to demonstrate fragmentation, it is reasonable to structure it by schools or approaches; if the aim is to trace trends, then organizing chronologically or by shifts in focus is more appropriate. For example: *This review is aimed at the systematization of practices with applied relevance for educational policy. Accordingly, the typology of educational levels under study (from school to higher education) was chosen as the structuring principle. This framework revealed differences in research priorities, scales of analysis, and problem formulations.* (3) Explain why the selected framework enables the review to achieve its reconstructive aim and what it reveals and what would remain hidden under a different organizing principle. (4) Demonstrate the author's stance in structuring the field: present the structure as an epistemologically motivated choice rather than a mechanical plan. *For example: To systematize the complexity of this research field, we structure the review along three analytical dimensions: (1) theoretical perspectives, (2) methodological approaches, and (3) applied domains. This tripartite structure allows us to trace both internal divergences and integrative tendencies across the literature.*

An effective implementation of this step involves explicitly stating the assumptions and foundations adopted by the author. For example: *"In this review, we adopt a critical constructivist stance, which assumes that ..."*; *"This mapping draws on a pragmatist understanding of knowledge production ..."*. It is also important to explain how this stance affects both the selection of literature and the interpretation of data. For instance, a review grounded in critical theory may disregard positivist studies as irrelevant to its concern with social context. Such articulation establishes a deliberate standpoint toward the subject field and enables readers to understand the interpretive filters through which the reconstruction will proceed (Table 10).

Table 10. Methodological guidelines for constructing Step 3.2 "Identification of the author's epistemological stance" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To make the author's research stance toward the subject field explicit by indicating which epistemological assumptions guide the selection, interpretation, and organization of the literature. This approach enables the reader to assess the perspective from which the reconstruction is carried out.
Core components	(1) Indicating which stance is adopted, such as critical, constructivist, pragmatic, post-positivist, and others. (2) Explaining how this stance shapes the selection of sources, the analytical lenses, and the overall structure of the review. (3) Using metadiscursive markers such as *we adopt, we assume, this review takes the perspective of...* For example: *"We believe that this review is significant and carries potential contributions. First, since the impact of the Covid-19 on education may last a few more years (Schleicher, 2020), a summary of current evidence can provide insights for educators and researchers regarding students' engagement. Second, it can advance the knowledge for fostering students' engagement in a time of crisis, which could help to overcome learning engagement challenges in the future."* (4_1)
Typical errors	(1) Lack of explicit positioning: the review is presented as *"objective"* or *"comprehensive",* without specifying the research framework, which creates the illusion of neutrality. (2) Implicit stance: for example, one group of studies is criticized and another highlighted, but the author does not explain why this choice is made or from what research logic it follows. (3) Blurring epistemological and thematic positioning: for example, the author states that the focus will be on *"digital practices"* but does not clarify whether the analysis will be descriptive, critical, interpretive, and so forth.
Recommendations for Functional Optimization	(1) Clearly indicate from which research framework the author analyzes the subject field. For example, a constructivist perspective would entail attention to how knowledge is constituted, while a critical perspective would emphasize the power structures integrated in the practices under study. For example: *This review is conducted within a constructivist research paradigm, which emphasizes how knowledge about the research subject is shaped by specific sociocultural and institutional conditions.* (2) Posit how the chosen stance influences the reconstruction of the subject field: which works are included, which aspects are highlighted, and which approaches are interpreted as relevant. For example: *The author's epistemological stance directs the review toward analyzing those theoretical and methodological approaches that stress the contextual nature of the phenomena under study and allow for multiple interpretations, thereby rejecting universalist claims.* (3) Acknowledge that the author's stance both defines and limits what will be considered; however, this should not be understood as a weakness but rather as an indicator of reflexivity and theoretical maturity of the scoping review. For example: *It should be noted that the reconstruction of the subject field undertaken within this theoretical perspective inevitably emphasizes [...] aspects and, conversely, marginalizes [...] aspects. However, such selectivity is not a methodological weakness but rather an intentional analytical choice that embodies a reflexive stance to the subject of analysis.*

This step is essentially optional, yet it becomes indispensable when the scoping review is situated within an epistemologically pluralistic or polemical field, or when it relies on a critical or constructivist approach that directly shapes the selection and interpretation of sources. By contrast, in reviews that are primarily inventory-like or descriptive in orientation, or in cases where the field under consideration is relatively homogeneous and the author's stance does not decisively influence the choice of literature, this step may reasonably be omitted. At the same time, even when an author assumes their position to be "neutral," a brief reflexive acknowledgment of the research perspective enhances the transparency and scholarly rigor of the synthesis.

Step 3.3. "Description of the boundaries of reconstruction and goal-setting" provides the boundaries within which the review will be conducted. This final step is not a mere technical note such as *"We excluded articles published before 2000,"* but rather a reasoned delimitation of focus that reflects the analytical goals, the author's epistemological stance, and the constraints of the corpus. Boundaries may be established (1) thematically, for example, focusing only on digital practices or teaching-related studies; (2) theoretically, by restricting the analysis to a specific framework such as activity theory; (3) methodologically, by including only empirical studies; (4) institutionally, by considering only the university context; or (5) regionally, by limiting attention to research conducted in the Global South, and so forth.

A typical error is either the absence of explicit boundaries or their arbitrary description without justification. It is crucial to demonstrate that the chosen delimitations are not matters of convenience but rather conceptually motivated decisions aimed at ensuring the cognitive coherence of the review. This step is essential for clarifying the scale and direction of the reconstruction, and it reinforces the reader's trust in the logic of source selection and the legitimacy of claims to comprehensiveness (Table 11).

This step can be regarded as conditionally obligatory when the review covers a broad, fragmented, or interdisciplinary research area; when the selection of sources or the narrowing of scope is not self-evident to the reader (for example, only English-language articles, only empirical studies, or only post-2010 publications); or when the review claims analytical rigor and operationalized design. If, however, the boundaries of the reconstruction are directly determined by the subject itself (for example, *"a review of the literature on the use of technology X in Y between 2020 and 2023,"* where the focus and limits are mechanically obvious), then the step is not essential to the introduction. At the same time, even if the boundaries may seem transparent, their highlighting increases the reader's trust in the logic of selection and helps to avoid accusations of arbitrariness or eclecticism.

The third move concludes the preparatory rhetorical work of the introduction: if the first move delineates the research area, and the second legitimizes the need for reconstruction, the third explains how this reconstruction will be organized and on what grounds. It transforms motivation into method, setting the cognitive format of the scoping review. Without this move, the review risks being perceived as a collection of citations rather than an analytical map.

DISCUSSION

The proposed structure of the introduction to a scoping review develops the ideas integrated in Swales' classical model [17], which was designed primarily for the analysis of introductions to original empirical articles. Within the CARS model, the central focus lies on justifying the research "niche" and establishing research questions aimed at generating new knowledge. In the genre of the scoping review, however, the emphasis shifts from filling a gap to reconstructing an already established body of knowledge, identifying its terminological inconsistencies, epistemological diffuseness, and contradictory directions of development [15; 1]. From this perspective, the proposed rhetorical structure of the introduction to a scoping review does not replace but rather complements the classical model, allowing the aims of review articles to be aligned with their rhetorical realization.

Table 11. Methodological guidelines for constructing Step 3.3 "Description of the boundaries of reconstruction and goal-setting" in the introduction to a scoping review

Methodological note parameter	Methodological note
Rhetorical strategy	To justify which aspects of the subject field are included and which are deliberately excluded. Present these boundaries as a conscious consequence of the research task, the author's epistemological stance, and the chosen conceptual focus, rather than as merely technical or imposed limitations.
Core components	(1) Indication of the type of boundaries: thematic, theoretical, temporal, contextual, methodological, etc. (2) Explanation of why the review is limited to these particular aspects (for example, *we focus on digital practices in school education because this is where the most significant methodological divergence is observed)*. (3) Demonstration of how the chosen boundaries correspond to the stated task of reconstruction and the adopted epistemological perspective. For example, *"This paper presents the findings of a scoping literature review focusing on empirical evidence on how artificial intelligence supports human complex problem-solving and the nature of human-AI collaboration in complex problem-solving at the level of (meta)cognitive and social practices, as well as affective processes."* (1_2) *"Four main application areas were mapped: student interaction, feedback characteristics, comparison and design. The rapid scoping review in this study goes beyond this in broadly addressing all of AI in peer assessment and noting interventions rather than merely mapping the feld."* (2_2)
Typical errors	(1) A purely technical listing of limitations without explaining their conceptual relevance: for instance, *we analyze only articles in English published after 2015.* Readers are left without understanding why such a choice was made and how it affects the reconstruction. (2) Absence of boundaries: the review is presented as all-encompassing, which renders it unrepresentative and methodologically vulnerable. (3) Substitution of boundaries with search results: the author does not define the limits in advance but merely states that *"25 articles were found,"* thereby depriving the review of a conceptual design.
Recommendations for Functional Optimization	(1) Present the boundaries as part of the theoretical design: for example, if the emphasis is placed on interpretative studies, explain why quantitative ones are excluded. For example, *This review focuses exclusively on interpretative research, as it allows for the reconstruction of meaning-making mechanisms within the field under study. Quantitative modeling studies were deliberately not included, since their analytical strategies do not align with the goal of identifying cognitive frameworks and discursive practices.* (2) Indicate what is excluded from the review and why such exclusion is legitimate. Such transparency increases trust in the study and reduces the risk of accusations of arbitrariness. For example, *Publications written in languages other than English were not considered, as the intention was to ensure comparability of conceptual frameworks and rhetorical strategies within the boundaries of Anglophone academic discourse. The author acknowledges the limitations of this decision and regards them as a subject for subsequent cross-cultural analysis.* (3) Use linguistic constructions that emphasize the deliberateness of the choice, such as *we deliberately exclude..., this review is devoted exclusively to..., given our aim to synthesize theoretical foundations, we do not examine empirical case studies in detail.* An example of effective implementation: *This review considers peer-reviewed journal articles published between 2012 and 2022 that analyze formative assessment in secondary education, while excluding grey literature and theoretical essays without empirical grounding. Such a temporal and empirical focus makes it possible to evaluate the development of this field in response to recent curriculum reforms.*

A comparison with existing methodological guidelines for constructing scoping reviews demonstrates that the proposed scheme is consistent with international standards. The *Joanna Briggs Institute manual* [2] and the *PRISMA-ScR* checklist [5] emphasize transparency in search procedures and systematic synthesis, yet they do not provide a detailed model for structuring the introduction. The results of the present study address this gap by equipping researchers with a framework for presenting the context, objectives, and rationale of a scoping review in a structured and well-argued manner.

The rhetorical scheme of the introduction proposed in this study integrates elements of genre analysis [10; 13; 29] with the requirements of methodological reproducibility in reviews [1; 14]. Such a synthesis makes it possible to view the introduction not merely as a genre convention but also as an epistemological filter that frames the analysis for the entire study. In this way, the model under discussion contributes to enhancing scholarly transparency and mitigating the risk of rhetorical redundancy, a concern repeatedly highlighted in recent research on academic discourse [12; 13; 30].

Several limitations of the study, however, should be taken into account. First, the corpus of articles used to reconstruct the structure was limited to research in higher education. Although this field is characterized by significant methodological and terminological fragmentation, which makes it a compelling case, further verification of the applicability of the proposed scheme across other domains (from the social sciences to the natural sciences) is needed. Second, the analysis of rhetorical steps was based primarily on publications in Q1 journals, which may reflect a higher level of standardization than is typical across the broader academic landscape.

RECOMMENDATIONS FOR APPLICATION

For instructors of academic writing

The proposed structure of the introduction to a scoping review can serve as a didactic tool for developing in post-graduates and early-career researchers the skills necessary to work with this genre. Instructors may integrate the model into academic writing courses through a sequence of scaffolded exercises, ranging from diagnosing common errors in published introductions to reviews to designing original introductions based on the three rhetorical moves. Particular attention should be given to contrasting successful and flawed realizations of rhetorical steps, as such comparative practice helps students cultivate the ability to critically interpret genre conventions and to develop their own strategies of scholarly argumentation. The inclusion of authentic examples and comparative tables of rhetorical steps not only illustrates the functions of the model but also fosters an understanding of how genre shapes the perception and legitimation of knowledge within the academic community.

For editors and reviewers

The model may be employed as an instrument of expert validation for introductions to scoping reviews. For reviewers, it can provide a methodological foundation for manuscript evaluation, enabling them to identify gaps in argumentation (for example, the absence of a clearly stated research focus or insufficient distinction between the subject field and adjacent domains), as well as to diagnose violations of the cognitive logic of review construction. For editors, the model holds value as a means of standardizing peer review: it enables the establishment of quality criteria for introductions that go beyond the completeness of the citation base to assess the functional adequacy of rhetorical steps. Incorporating such criteria into editorial practice enhances the transparency of expert evaluation and strengthens the genre consistency of published texts.

For authors

For researchers, the application of the model provides a step-by-step framework for designing introductions in which the reconstruction of the research domain is presented systematically and analytically. Adhering to the model helps authors avoid the typical error of reducing the introduction to a nominal inventory of literature, instead ensuring a balanced positioning of their own study in relation to existing reviews and identified gaps. Employing the proposed structure also facilitates the alignment of the author's epistemological stance with their research questions and synthesis methodology, thereby rendering the review transparent, reproducible, and persuasive to the scholarly com-

munity. For authors working in interdisciplinary domains, the model proves especially productive, as it provides a universal framework for integrating diverse research directions and conceptual systems.

CONCLUSION

The present study is aimed at developing a toolkit for the analysis and design of introductions to scoping reviews. The significance of the proposed model lies not only in its description of empirically identified patterns but also in its demonstration of a principle for the systematic organization of rhetorical strategies, a principle that can be applied in educational and editorial practice, as well as in the advancement of applied linguistic technologies. In this respect, the model functions as a methodological construct capable of facilitating the interdisciplinary circulation of knowledge, spanning domains from the pedagogy of academic writing and genre linguistics to digital methods of corpus analysis.

The value of the study further lies in defining the limitations of existing genre-based schemes and proposing refinements tailored to the specific features of scoping reviews. In doing so, it establishes a foundation for further typologization of academic texts, where the introduction is reconceptualized not as a merely formal background but as a conceptual focal point that defines the cognitive frameworks of the entire article. Future work should aim to extend the model through cross-disciplinary and cross-cultural comparisons, which would allow for an assessment of its universality and help identify the boundaries of its adaptability.

CONFLICT OF INTERESTS

The authors declare no relevant conflict of interests.

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INFORMATION ABOUT THE AUTHORS

Elena V. Tikhonova, Cand. Sci. (Hist.), Associated Professor, MGIMO University, Moscow, Russian Federation; Head of the Editorial Office of the Journal of Language and Education, HSE University, Moscow, Russian Federation; https://orcid.org/0000-0001-8252-6150; e-mail: etihonova@gmail.com

Marina A. Kosycheva, Cand. Sci. (Philol.), Associate Professor, Associate Professor of the School of Foreign Languages, Executive secretary of the Journal of Language and Education; HSE University; Associate Professor of the Department of Russian and Foreign Languages, Sergo Ordzhonikidze Russian State University for Geological Prospecting, Moscow, Russian Federation; https://orcid.org/0000-0003-0328-3109; e-mail: mkosycheva@hse.ru

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Appendix

Coding Table

No.	Title	Article	Code
1	*Computers and Education: Artificial Intelligence* (SJR 5,217; Elsevier B.V., Netherlands)	Marx E., Leonhardt, Bergner N. Secondary school students' mental models and attitudes regarding artificial intelligence – a scoping review. *Computers and Education: Artificial Intelligence*. 2023;5:100169. https://doi.org/10.1016/j.caeai.2023.100169	1_1
		Joksimovic S., Ifenthaler D., Marrone R., De Laat M., Siemens G. Opportunities of artificial intelligence for supporting complex problem-solving: Findings from a scoping review. *Computers and Education: Artificial Intelligence*. 2023;4:100138. https://doi.org/10.1016/j.caeai.2023.100138	1_2
2	*International Journal of Educational Technology in Higher Education* (SJR 3,912; Springer Netherlands, Netherlands)	Xia Q., Weng X., Ouyang F., Lin T.J., Chiu T.K.F. A scoping review on how generative artificial intelligence transforms assessment in higher education. *International Journal of Educational Technology in Higher Education*. 2024;21:40. https://doi.org/10.1186/s41239-024-00468-z	2_1
		Topping K.J., Gehringer E., Khosravi H., Srilekha Gudipati, Jadhav K., Susarla S. Enhancing peer assessment with artificial intelligence. *International Journal of Educational Technology in Higher Education*. 2025;22:3. https://doi.org/10.1186/s41239-024-00501-1	2_2
3	*International Journal of STEM Education* (SJR 2,606; Springer-Open, Switzerland)	Zhai Y., Tripp J., Liu X. Science teacher identity research: a scoping literature review. *International Journal of STEM Education*. 2024;11:20. https://doi.org/10.1186/s40594-024-00481-8	3_1
		Videnovik M.,Vold T., Kiønig L., Bogdanova A.M., Trajkovik V. Game-based learning in computer science education: a scoping literature review. *International Journal of STEM Education*. 2023;10:54. https://doi.org/10.1186/s40594-023-00447-2	3_2
		Borrego, M., Chasen, A., Tripp, H.C., Landgren, E., Koolman E. A scoping review on U.S. undergraduate students with disabilities in STEM courses and STEM majors. *International Journal of STEM Education*. 2025;12:2. https://doi.org/10.1186/s40594-024-00522-2	3_3
4	*Smart Learning Environments* (SJR 2,476; Springer-Open, United Kingdom)	Yang D., Wang H., Metwally A. H.S., Huang R. Student engagement during emergency remote teaching: a scoping review. *Smart Learning Environments*. 2023;10:24. https://doi.org/10.1186/s40561-023-00240-2	4_1
		Meenaghan A., van Sintemaartensdijk I. The use of XR technology in criminal justice teaching and education: a scoping review. *Smart Learning Environments*. 2024;11:60. https://doi.org/10.1186/s40561-024-00351-4	4_2
5	*JMIR Medical Education* (SJR 1,974; JMIR Publications Inc., Canada)	Lie S. S., Helle N., Sletteland N.V., Vikman M.D., Bonsaksen T. Implementation of virtual reality in health professions education: scoping review. *JMIR Medical Education*. 2023;9:e41589. https://doi.org/10.2196/41589	5_1
		Zhou Y., Li S.J., Tang X.Y., He Y.C., Ma H.M., Wang A.Q., Pei R.Y., Piao M.H. Using ChatGPT in nursing: Scoping review of current opinions. *JMIR Medical Education*. 2024;10:e54297. https://doi.org/10.2196/54297	5_2
		Mainz A., Nitsche J., Weirauch V., Meister S. Measuring the Digital Competence of Health Professionals: Scoping Review. *JMIR Medical Education*. 2024;10:e55737. https://doi.org/10.2196/55737	5_3
6	*Computers and Education Open* (SJR 1,678; Elsevier Ltd; United Kingdom)	Cumming T.M., Han C., Gilanyi L. University student and instructor experiences with HyFlex learning: a scoping review. *Computers and Education Open*. 2024;7:100229. https://doi.org/10.1016/j.caeo.2024.100229	6_1
		Schroeder N.L., Romine W.L., Kemp S.E. A scoping review of wrist-worn wearables in education. *Computers and Education Open*. 2023;5:100154. https://doi.org/10.1016/j.caeo.2023.100154	6_2
7	*Australasian Journal of Educational Technology* (SJR 1,249; Australasian Society for Computers in Learning in Tertiary Education, Australia)	Bowers P., Graydon K., Ryan T., Lau J.H., Tomlin D. Artificial intelligence-driven virtual patients for communication skill development in healthcare students: A scoping review. *Australasian Journal of Educational Technology*. 2024;40(3):39–47. https://doi.org/10.14742/ajet.9307	7_1
		McInnes R., Hobson J.E., Johnson K.L., Cramp J., Aitchison C., Baldock K. Online course quality evaluation instruments: A scoping review. *Australasian Journal of Educational Technology*. 2024;40(2):55–75. https://doi.org/10.14742/ajet.8978	7_2

Appendix (continuation)

No.	Title	Article	Code
8	*Medical Education Online* (SJR 1,037; Taylor and Francis Ltd., United Kingdom)	Tonheim L.E., Molin M., Brevik A., Wøhlk Gundersen M., Garnweidner-Holme L. Facilitators and barriers to online group work in higher education within health sciences – a scoping review. *Medical Education Online*. 2024;29:2341508. https://doi.org/10.1080/10872981.2024.2341508	8_1
		Koelewijn G., Hennus M.P., Kort M., Frenkel J., van Houwelingen Th. Games to support teaching clinical reasoning in health professions education: a scoping review. *Medical Education Online*. 2024;29:2316971. https://doi.org/10.1080/10872981.2024.2316971	8_2
9	*BMC Medical Education* (SJR 0,947; BioMed Central Ltd, United Kingdom)	Sterpu I., Herling L., Nordquist J., Rotgans J. I., Acharya G. Team-based learning (TBL) in clinical disciplines for undergraduate medical students – a scoping review. *BMC Medical Education*. 2024;24:18. https://doi.org/10.1186/s12909-023-04975-x	9_1
		Zhang R., Xu X., Luo X., Huang P. "Building bridges" – communication education for residents in radiology: a scoping review. *BMC Medical Education*. 2024;24:662. https://doi.org/10.1186/s12909-024-05660-3	9_2
		Gamborg M.L., Salling L.B., Rölfing J.D., Jensen R.D. Training technical or non-technical skills: an arbitrary distinction? A scoping review. *BMC Medical Education*. 2024;24:1451. https://doi.org/10.1186/s12909-024-06419-6	9_3
		Donkin R., Yule H., Fyfe T. Online case-based learning in medical education: A scoping review. *BMC Medical Education*. 2023;23:564. https://doi.org/10.1186/s12909-023-04520-w	9_4
		Hosseini, A., Ghasemi, E., Nasrabadi, A.N., Sayadi, L. Strategies to improve hidden curriculum in nursing and medical education: A scoping review. *BMC Medical Education*. 2023;23:658. https://doi.org/10.1186/s12909-023-04652-z	9_5
		Lesunyane A., Ramano E., Niekerk K., van Boshoff K., Dizon J. Life skills programmes for university-based wellness support services for students in health sciences professions: a scoping review. *BMC Medical Education*. 2024;24:1418. https://doi.org/10.1186/s12909-024-06162-y	9_6
10	*Journal of University Teaching and Learning* Practice (SJR 0,909; Australia)	Dobbins K. Applying an academic literacies lens to the scholarship of teaching and learning (SoTL): a scoping review. *Journal of University Teaching and Learning Practice*. 2024;21(5). https://doi.org/10.53761/ar9qg770	10_1
		Killingback C., Tomlinson A., Stern J. Compassionate pedagogy in higher education: a scoping review. *Journal of University Teaching and Learning Practice*. 2024;21(10). https://10.53761/7yvrw787	10_2
11	*Online Learning Journal* (SJR 0,821; The Online Learning Consortium, United States)	Meyer H.S., Preisman K.A., Samuel A. Get connected: a scoping review of advising online graduate students. *Online Learning*. 2022;26(3):274–292. https://doi.org10.24059/olj.v26i3.2819	11_1
		Choi H., Hur J. Passive participation in collaborative online learning activities: A scoping review of research in formal school learning settings. *Online Learning*. 2023;27(1):127–157. https://doi.org/10.24059/olj.v27i1.3414	11_2
		Wright A.C., Carley C., Alarakyia-Jivani R., Nizamuddin S. Features of high quality online courses in higher education: a scoping review. *Online Learning*. 2023;27(1):46–70. https://doi.org/10.24059/olj.v27i1.3411	11_3
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Appendix (end)

No.	Title	Article	Code
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