

Collaborative Learning and Student Engagement in Higher Education: A Systematic Scoping Review and Evidence-Gap Map

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Abstract

Collaborative learning has emerged as a fundamental pedagogical approach in higher education to achieve shared learning objectives. This systematic scoping review provides a comprehensive overview of the empirical research on collaborative learning and student engagement in higher education. The review explored various concepts, stakeholders, and contexts involved in collaborative learning processes, along with the dimensions of student engagement examined in the literature. Based on a comprehensive literature search of relevant peer-reviewed articles in three databases, 485 studies were selected as eligible in line with the a priori defined criteria. The analysis revealed a growing body of research on collaborative learning, with most studies focusing on general collaboration among students, while specific forms such as co-creation, co-production, and co-design were less frequently addressed. The majority of the studies examined collaboration between students, but few included other stakeholders like industry partners. Additionally, much of the research lacks assessment of various dimensions of student engagement. In line with the significant gaps identified in the literature, this review underscores the need for future research to develop standardized measures of student engagement, include diverse stakeholders in studies on collaboration, and explore different types of collaborative learning. Addressing these gaps can enhance our understanding of how collaborative learning is related to student engagement and inform effective educational practices in higher education.

Background

In recent years, students' collaboration and engagement have emerged as central pedagogical strategies in higher education institutions (Kwong & Kwok, 2025; Qureshi et al., 2023; Smith & Wyness, 2024). A growing body of research suggests that these practices enhance learning outcomes by promoting knowledge exchange, skill development, critical thinking, and deep learning through meaningful social interaction (Qureshi et al., 2023; Scager et al., 2016; Van Helden et al., 2023). Collaborative learning environments not only foster cognitive development but also contribute to students' sense of belonging and academic identity, which are increasingly recognized as critical to persistence and success in higher education.

In the literature, various terms are employed to describe collaborative processes, including co-creation, co-production, co-construction, and co-design (Barnes et al., 2024; Bjørnerås et al., 2024; Bovill, 2020; Hendry et al., 2025; Oliveira et al., 2024; Smith et al., 2025; Zarandi et al., 2024; Zeivots et al., 2025). Although these concepts differ in emphasis, they all reposition students from passive recipients of knowledge to active partners in the design,

implementation, and evaluation of their education. Co-creation generally refers to collaboration where students and educators work together to shape curricula, learning environments, and assessment practices (Bovill, 2020; Dollinger et al., 2018). Co-production expands this collaboration to include external stakeholders, viewing education as a shared responsibility aimed at enhancing both individual and societal outcomes (Bandola-Gill et al., 2023). Co-design emphasizes collaborative innovation, where students contribute to the development of new pedagogical practices or educational solutions (Iniesto et al., 2022; Zeivots et al., 2025). Meanwhile, co-construction focuses more directly on the joint building of knowledge through interactive, dialogic learning processes (Allan, 2022; Ha & Pepin, 2017; Vespone, 2023).

The success of higher education institutions increasingly depends on their ability to build strong partnerships both internally (among students, faculty, and staff) and externally (with industry, alumni, policy actors, and society) (Kettunen, 2015). Student-staff partnerships, a specific form of co-creation, have been shown to enhance student motivation, deepen learning, and foster a sense of ownership and responsibility (Bovill et al., 2016; Bovill & Woolmer, 2019; Dollinger & Lodge, 2020). Moreover, strategic stakeholder engagement is viewed as essential for enhancing educational relevance, institutional reputation, and societal impact (Stocker et al., 2020).

Parallel to the growing interest in collaboration, student engagement has gained prominence as a key focus of educational research and practice. Typically defined as students' active involvement, interaction, and emotional connection with their learning environments (Zarandi et al., 2022b), engagement is recognized as a multidimensional construct, encompassing cognitive (mental effort and learning strategies), behavioral (participation and persistence), emotional (affective responses to learning), social (interaction with peers and instructors), and collaborative (group work and co-creation) aspects (Redmond et al., 2018). Effective engagement has been consistently linked to higher academic achievement, lower dropout rates, improved well-being, and the development of lifelong learning skills (Fredricks et al., 2004; Finn & Zimmer, 2012; Towler, 2010).

Recent studies suggest that different engagement dimensions contribute uniquely to educational outcomes. Wong et al. (2024) highlight that cognitive, behavioral, and affective engagement each support academic achievement and student well-being, albeit through different mechanisms. Bowden et al. (2021) emphasize affective engagement's critical role in promoting transformative learning, fostering institutional loyalty, and enhancing student well-being, whereas behavioral engagement appears more strongly associated with self-efficacy and self-esteem. Furthermore, Wong and Liem (2021) propose a dual-component framework distinguishing learning engagement (focused on tasks and content) from school engagement (focused on broader participation in institutional life), reflecting the need for more precise conceptual frameworks.

However, various systematic reviews reveal significant fragmentation and inconsistency in the student engagement literature. Bond, Bedenlier, et al. (2020) and Bond, Buntins, et al. (2020) found that engagement is often inconsistently defined, variably operationalized, and sometimes conflated with related constructs such as motivation, satisfaction, or learning outcomes. Nkomo et al. (2021) stress that empirical studies often lack alignment with

theoretical models, leading to challenges in interpreting and comparing results across contexts. Subramanian and Mahmoud (2020) similarly call for more precise differentiation between emotional, cognitive, and behavioral engagement to better understand their distinct effects.

Reviews focusing on students' collaboration with stakeholders (Laugaland et al., 2024; Oliveira et al., 2024; Smith et al., 2025; Vespone, 2023; Zarandi et al., 2024) show a broad range of approaches to student–stakeholder collaboration. These studies document a growing trend toward partnership models but also reveal that collaboration is often limited to isolated projects, with limited integration into broader institutional practices. Moreover, few studies explicitly connect collaborative practices with dimensions of student engagement, leaving a gap in understanding how and why collaboration might impact engagement outcomes.

Given these gaps, there is a clear need for a systematic mapping of empirical research that bridges student collaboration and engagement. By examining how collaboration practices are conceptualized, implemented, and related to different dimensions of engagement, a more integrated and comprehensive understanding of these processes can be developed.

This study, therefore, is a scoping review to map the characteristics, conceptual frameworks, contexts, and focus areas of empirical research on students' collaboration with various stakeholders and its association with student engagement. A scoping review is particularly appropriate for this aim, as it enables the exploration of broad, complex, and heterogeneous fields where key concepts are still evolving and where systematic synthesis is premature (Arksey & O'Malley, 2005; Levac et al., 2010).

Specifically, this scoping review addresses the following research questions:

1. What are the characteristics of the empirical research on students' collaboration and engagement (e.g., publication year, country, study design)?
2. What concepts are used to describe the collaborative learning process?
 - a. Which actors and stakeholders are involved in this process?
 - b. What is the context of this process?
3. Which student engagement types are examined in relation to this process?

The aim of this scoping review, hence, is to systematically map the empirical research on students' collaboration and engagement within higher education contexts. Specifically, the review seeks to identify how collaborative learning processes are conceptualized, the types of stakeholders involved, the contexts in which collaboration occurs, and the dimensions of student engagement that are examined in relation to these processes. By synthesizing findings across a broad and diverse body of literature, this review aims to clarify current conceptualizations, highlight patterns and gaps in the existing research, and provide a foundation for future studies seeking to strengthen collaboration and engagement strategies in higher education.

Method

To address our research questions, we undertook a systematic scoping review approach. This approach is designed to categorize and describe existing research on collaborative learning and student engagement within higher education. Adhering to the PRISMA 2020 guidelines (Page et al., 2022), our review ensures methodological transparency and rigor (Peters et al., 2020). In line with our research objectives, we established clear inclusion and exclusion criteria to guide the selection of relevant studies.

Inclusion and Exclusion Criteria

The formulation of inclusion criteria is congruent with the overarching research questions, which were predetermined to identify pertinent studies. Only studies that met these inclusion criteria were included in data extraction and analysis, as outlined in Table 1.

Eligibility criteria	Inclusion	Exclusion
Topic	Studies focusing on students' collaboration	Studies without a focus on students' collaboration
Target group	Higher education	Primary and secondary school students or adults
Study type	Primary studies employing qualitative, quantitative, or mixed method	Theoretical and conceptual papers, reviews
Outcome	Studies examine students' engagement outcome	Studies with no data on students' engagement
Publication type	Peer-reviewed article	Grey literature, books and so on

Table 1: Eligibility Criteria for Inclusion and Exclusion of Studies

Search Strategy

To identify relevant studies for this systematic scoping review, we conducted searches focusing on studies addressing the theme of collaborative learning process within higher education contexts. We searched for relevant studies in three databases, ERIC, Scopus, and Web of Science, since they collectively provide comprehensive coverage and diverse perspectives on collaborative learning and student engagement in higher education.

Our search strategy encompassed a broad range of terms under two categories relevant to the main topic and context of our study, covering synonyms of “higher education” and “student engagement”. Searches were conducted using these two categories of search terms,

combined using the Boolean operators 'AND'. Searches were performed in titles, abstracts, and keywords (see search syntax for each database in Appendix).

Screening Process

We followed the methodology outlined by Thomas et al. (2020), which emphasized transparency and rigor through defined inclusion criteria, systematic screening, consistent data extraction, and comprehensive synthesis. Subsequently, we used EPPI-Reviewer Web 4 (<http://eppi.ioe.ac.uk/cms/>), which is a web-based software developed by the EPPI-Centre at University College London. EPPI-Reviewer enables collaborative, independent screening, facilitates resolution of conflicts, and supports documentation of decisions at all stages of the review process.

Both title and abstract screening and subsequent full-text screenings were independently conducted by a pair of reviewers. To validate the screening process, a pilot test was conducted on 10% for the title and abstract screening, and also for the full-text screening, to ensure a shared understanding of the inclusion/exclusion criteria and to calibrate the screening process by going through disagreements. Any discrepancies regarding the inclusion/exclusion of studies were resolved through discussions and collaborative decision-making within the EPPI-Reviewer system.

Data Extraction

Detailed study information for the eligible studies was extracted using the EPPI-Reviewer database to comprehensively review existing research. Initially, a pilot test of the data extraction form was conducted on a subset of studies ($k = 14$) by all authors to refine the extraction process. After refining the form, authors independently extracted data covering study details (e.g., authors, publication year, country, study design), sample characteristics (e.g., student academic level, subject area, stakeholders involved), and thematic content (e.g., type of collaboration, modality, engagement type). Each study was individually coded, followed by a 10% sample review to ensure coding accuracy.

Data were displayed using a variety of tabular and graphical forms. Data in this scoping review was also visually displayed in an evidence gap map (EGM) using EPPI-Mapper application (Digital Solution Foundry, & EPPI-Centre, 2020). Given this review's scoping nature, the included studies' quality was not assessed.

Results

Study Identification

Through the electronic literature search in ERIC ($k=359$), Scopus ($k=1109$), and Web of Science ($k=878$), we identified a total of 2346 articles. All articles were uploaded to EPPI Reviewer Web for title and abstract screening. After the removal of duplicates ($k=733$), the remaining 1613 articles were screened independently by a pair of screeners according to the inclusion and exclusion criteria. Of these, 692 articles were excluded.

In the second stage, the remaining 921 articles' full texts were independently screened. For articles unavailable digitally, full texts were requested through the library, although three articles could not be accessed due to extra fees. A total of 918 articles were uploaded into EPPI Reviewer for in-depth reading. Following the full-text screening, 433 articles were excluded. As a result of the screening process, 485 articles were included in this scoping review. Figure 1 outlines the identification and screening process.

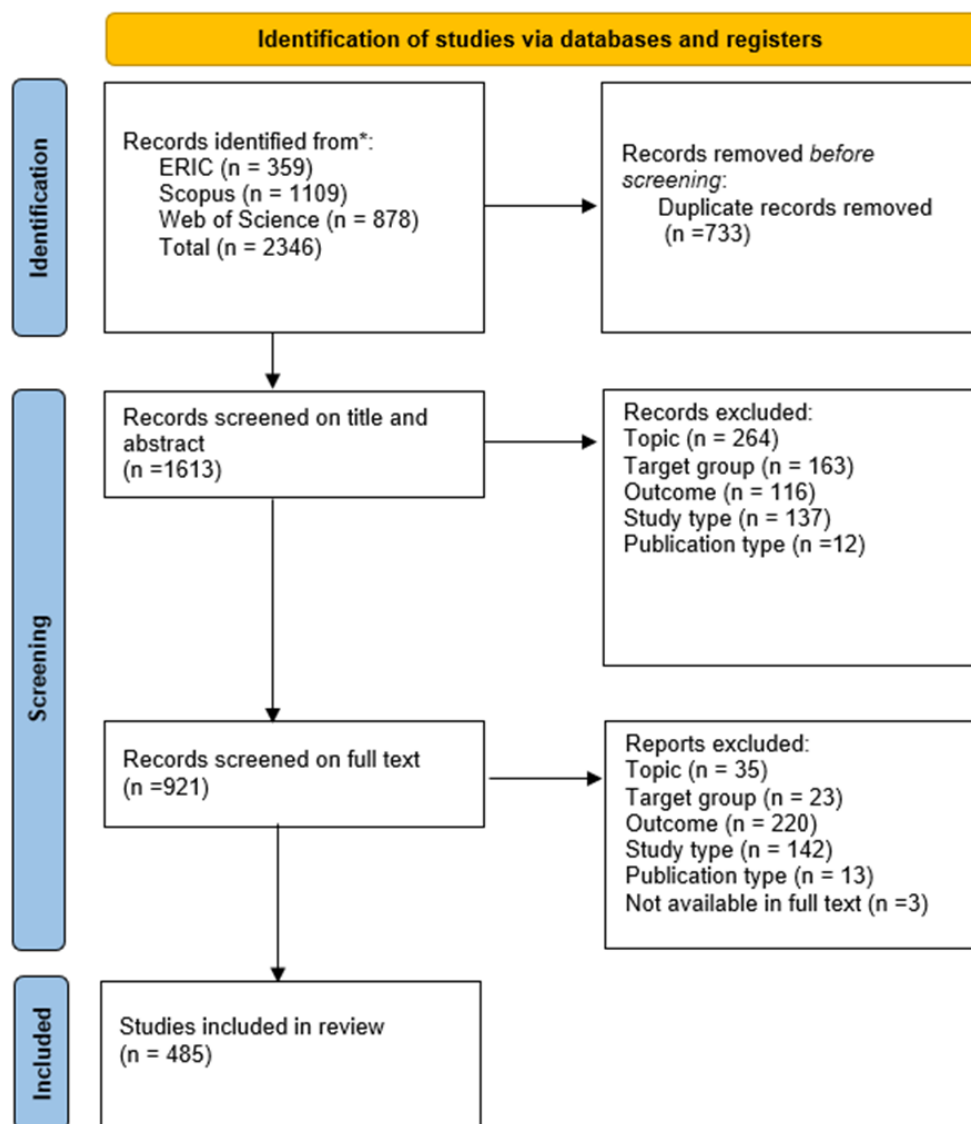


Figure 1: Study Identification Process

RQ1: Characteristics of the Included Studies

The studies included showed a steady increase in the number of empirical studies on the collaborative learning process and student engagement in higher education, from only 16 studies in total conducted before 2010 to 83 studies in 2022 and 81 studies in 2023 (see Figure 2). From 485 studies included, majority of the samples came from USA (152 studies, 31.3%), Australia (53 studies, 10.9%), UK (49 studies, 10.1%) and China (42 studies, 8.7%). The rest of the studies were from 54 different countries, while 22 studies (4.5) were comparative multi-

country studies (see Figure 3). 36.5% of the included studies were quantitative, while the rest of the studies were either qualitative (29.5%) or mixed method (34%).

The majority of the studies (85.6%) involved undergraduate students, while 17.5% of the studies included either graduate/postgraduate students only or in addition to undergraduate students. The student samples came from various subject areas, but mainly from STEM (34.8%) and social sciences (25%). The EGM summarizing the number of articles and characteristics of included studies is available on (<https://www6.uis.no/Alle-UiS/ksu/EGM.html>).

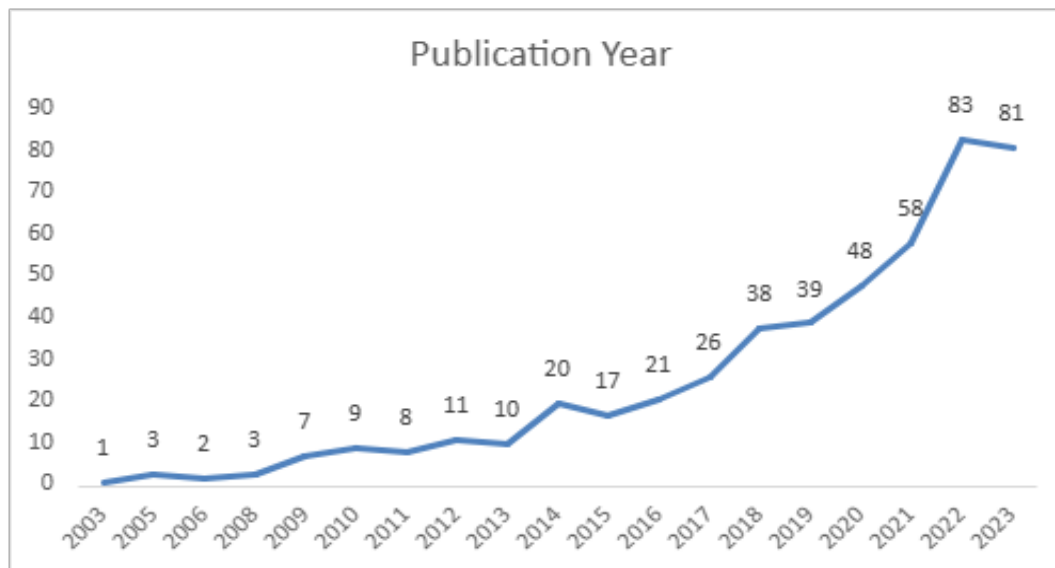


Figure 2: Publication Year of the Included Studies ($k=485$)

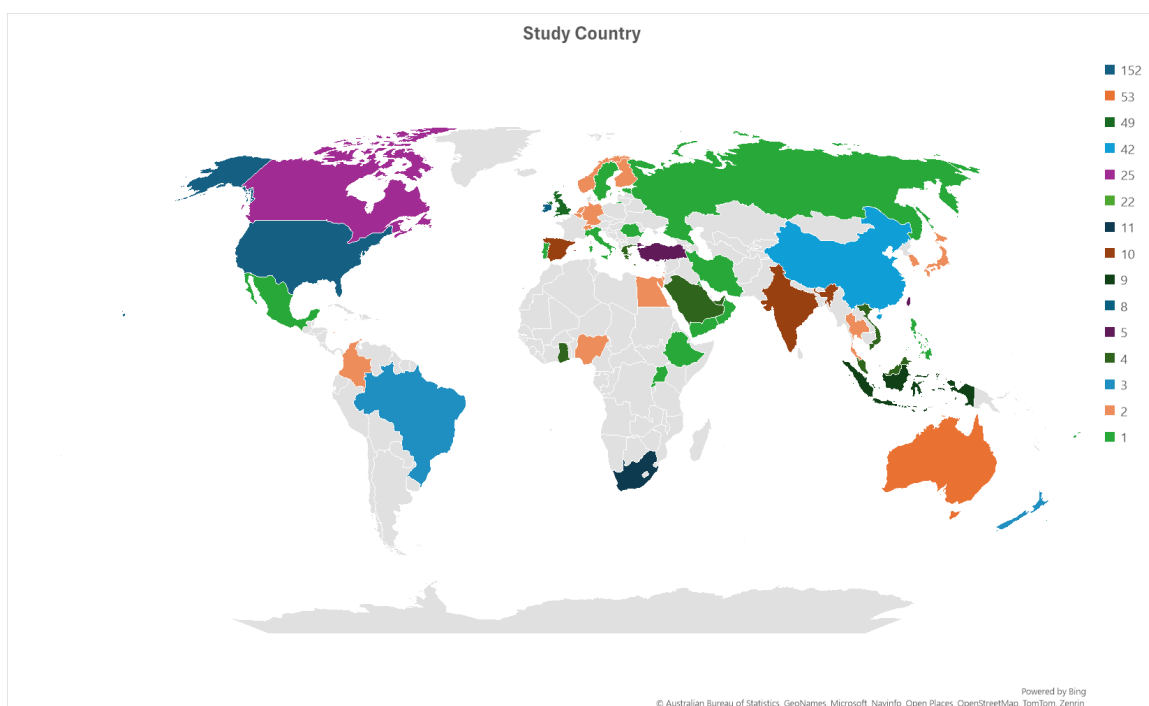


Figure 3: Country Distribution ($k=485$)

RQ2: Collaborative Learning Process

With regard to the type of student's collaboration in higher education, most of the included studies focused on students' collaboration in general (462 studies, 95%), while co-creation (62 studies, 13%) and co-construction (62 studies, 13%) were assessed equally. Co-production was assessed in 15 studies (3%) and co-design in only two studies (2%).

There were various stakeholders involved in the collaborative learning process. Students' collaboration with other students were mainly assessed in 432 studies (89%). Students' collaboration with teachers or other members of the faculty was assessed in 236 studies (49%). Students' collaboration with representatives from the field or other stakeholders were then assessed in 41 studies (8%), collaboration with library staff in eight studies (2%), collaboration with designers in nine studies (2%) and collaboration with researchers in six studies (1%).

In terms of the modality of student's collaboration, face-to-face collaboration was assessed in 284 studies (59%), while online collaboration in 263 studies (54%). A total of 92 studies (19%) assessed both face-to-face and online collaboration. Furthermore, 31 studies (6%) addressed hybrid collaboration, with one study assessing all three modalities: face-to-face, online and hybrid. Finally, concerning the context in which the collaboration took place, the majority was conducted in a course/campus setting, assessed in 461 studies (95%), while collaboration in the field or outside the campus was assessed in 39 studies (8%), and workshops in 26 studies (5%).

RQ3: Types of Student Engagement

The type of student engagement covered varied across the included studies. Among the clearly defined student engagement types, cognitive engagement (90 studies, 18.6%) was the most assessed dimension of student engagement. Affective/emotional engagement and behavioral engagement were measured almost equally in 79 studies and 80 studies respectively, while 13.8% of the studies (67 studies) defined and measured social/collaborative engagement. Interestingly, the majority of the studies (384 studies, 79%) were categorized under the "General" student engagement category either due to general description or operationalization of the type of student engagement measured such as active engagement in a task or course, an item assessing the perceived level of engagement or as an additional dimension of engagement defined such as agentic engagement which was covered in only five studies.

Discussion

In this systematic scoping review, we primarily aimed to synthesize the empirical research on the collaborative learning process and student engagement in higher education. We discuss the related results and some methodological issues below.

Student Engagement

The findings revealed that many studies lack a principled approach to analyzing student engagement, and in most of the studies, engagement is considered to be a holistic construct without a clear underlying framework to be followed. This ambiguity necessitates further unpacking. On the one hand, the term 'holistic' suggests that engagement encompasses multiple dimensions including emotional, behavioral, cognitive, and even social, but is often used without explicitly articulating how these dimensions interact. On the other hand, the lack of a clear underlying framework points to both conceptual and theoretical gaps. It is not only that engagement is inconsistently defined or measured across studies, but also that there appears to be not widely accepted cognitive or theoretical model that situates engagement within broader understandings of student learning processes, especially in the collaborative tasks. In the context of this study, this raises questions about how we interpret changes in student engagement and how these relate to pedagogical design and student outcomes. Future research may benefit from drawing on or developing integrative frameworks that can capture the complexity of engagement while mapping it more clearly on the relevant learning theories.

We examined four different constructs of student engagement: cognitive, affective/emotional, behavioral, and social/collaborative. These constructs were identified in 90, 80, 79, and 67 of the reviewed papers, respectively. Cognitive engagement was the most frequently assessed, appearing in 90 papers, indicating a strong focus on how students think, process information, and exert mental effort during learning activities. The affective/emotional construct was also prominent, featured in 80 papers, with an emphasis on how students feel toward their learning experiences. Behavioral engagement, assessed in 79 papers, focused on students' actions, including participation, attendance, and effort in tasks. Finally, social/collaborative engagement was found in 67 papers, highlighting its role in how students interact with peers and participate in group activities.

A comprehensive approach would involve considering all four dimensions - cognitive, behavioral, affective/emotional, and social/collaborative - engagement as distinct (Redmond et al., 2018) but interconnected constructs that can account for the process of engagement through collaboration. Although student engagement is often introduced with broad or vague definitions, it is essential to employ specific frameworks that categorize its subconstructs. By dissecting the term "student engagement," we can formalize the subtle meanings and intricacies that emerge from published research. For instance, students may engage in learning behaviorally, through time and effort invested in tasks; cognitively, through mental investment in understanding; or emotionally, through their reactions to the learning experience. They could also engage in the learning process socially and collaboratively, through interaction with peers, which can thereby support the learning process. Students may engage with one or multiple aspects of these dimensions, highlighting the need to consider all facets of engagement when examining their learning process. For example, beyond the time, effort and level of concentration associated with behavioral engagement, they may also engage cognitively by investing mental effort into learning. They could also engage emotionally with the presence of positive or negative reactions towards the learning experience which impacts their learning. Alternatively, students can engage in learning collaboratively and socially with others, where interaction and joint thinking support their

learning process. Despite a robust body of research on student engagement, many studies fail to differentiate between distinct engagement types, emphasizing active involvement without conceptual clarity. This lack of specificity hinders our understanding of how cognitive, behavioral, affective/emotional, and social/collaborative dimensions contribute to learning outcomes.

However, adopting a holistic perspective on student engagement without examining the subtle aspects of each subconstruct could lead to superficial insights. Exploring how each dimension promotes deeper learning is essential for a more nuanced understanding, rather than merely focusing on engagement as a general concept. This could also make the potential link between student engagement and collaboration even clearer. Therefore, any potential positive link established between collaboration and engagement could be questioned. For example, Mattanah et al. (2024) found that strong faculty-student relationships which might be seen as a mode of collaboration positively correlate with student engagement and deep learning. Nonetheless, adopting a holistic perspective on student engagement without examining the subtle aspects of each subconstruct could lead to superficial insights. This detailed investigation could elucidate the potential links between collaboration and engagement.

Assessing these three dimensions could shed light on which aspects of student-stakeholder interactions are most effective in enhancing learning outcomes. For instance, a partnership that particularly strengthens cognitive engagement may facilitate deeper critical thinking, whereas one that enhances emotional engagement could foster a sense of belonging, motivation, and overall well-being (Mattanah et al., 2024). Neglecting these aspects of student engagement obscures the specific ways in which external collaborations either contribute to or hinder various types of engagement. This gap represents a missed opportunity, as involving students in partnerships with teachers and external stakeholders could enrich their learning experiences and cultivate deeper intellectual and emotional connections.

Moreover, the literature indicates that while cognitive engagement is increasingly recognized for its role in facilitating higher-order thinking and academic success, emotional engagement often remains underexplored. Bond et al. (2020) noted that emotional engagement, which connects students' emotional investment to their learning experiences, can significantly influence cognitive engagement and overall learning. However, in specific disciplines, such as physical education and sports, cognitive engagement is infrequently addressed or assessed, which can lead to an incomplete understanding of how students interact with and benefit from their learning experiences. Addressing these conceptual gaps is crucial for advancing both theoretical and practical understandings of how student engagement enhances learning outcomes.

Collaborative Learning

Collaborative learning, the other key construct in our review, also often emerged as vaguely defined and broadly operationalized. Just as the construct of student engagement, aspects of collaboration such as duration, purpose, and group size are inconsistently specified across studies. This lack of clarity complicates the interpretation and comparison of findings. While collaboration is frequently linked to positive learning outcomes, the mechanisms by which it

influences these outcomes are not always made explicit. This underlines a broader need in the literature for more precise definitions and theoretical focus on collaborative learning, including a clearer articulation of how it intersects with student engagement. Addressing these ambiguities could strengthen both the design of future studies and the practical implementation of collaborative pedagogies.

The results showed a significant increase in the number of studies that report on the relationship between collaboration and student engagement. The growing body of research reflects not only an increasing interest among researchers but also a shift in educational paradigms toward more interactive and participatory teaching approaches. Contributions from numerous countries underscore the global relevance of collaborative learning practices as a key factor in enhancing student engagement across different educational settings. However, it is worth noting that our systematic scoping review did not attempt to investigate the association or effect of collaborative learning on student engagement, but rather to show the overview of empirical research on the potential intersection of these constructs.

Our analysis reveals that much of the research on student collaboration and engagement tends to focus on broad, overarching concepts, with relatively few studies addressing more specific frameworks such as co-creation and co-construction. However, since 2010, there has been a notable rise in research exploring these more refined concepts, including co-production and co-design. This increase appears to align with the introduction of these terms into higher education around 2009, driven in large part by marketing-oriented initiatives aimed at enhancing student engagement (Carvalho & de Oliveira Mota, 2010; Díaz-Méndez & Gummesson, 2012; Dollinger, 2018; Dollinger et al., 2018; Elsharnouby, 2015; Willox et al., 2010).

Recent systematic reviews also further support this trend, indicating an increasing scholarly interest in the role of co-creation in collaborative student learning (Zarandi et al., 2022b). This expanding body of research reflects a pedagogical shift toward more active, student-centered approaches (Oliveira et al., 2024; Zarandi et al., 2022a). These approaches underscore the importance of collaborative learning methods that empower students to act as co-designers, co-constructors, and co-creators in their educational experiences, which might lead to greater engagement and investment in their learning processes.

In addition to the type of collaboration process, we also examined how different forms (pair or group), and modalities (online or face-to-face) were reported in this process. Studies that reported using collaboration as a mode of interaction to operationalize student engagement often described collaboration as a broad process (Bharucha, 2017). These collaborative activities primarily included peer group work, interaction among students, and peer or group discussions. Similarly, there has been a notable rise in studies focusing on online collaboration as a method to promote student engagement. This shift reflects the increasing reliance on digital platforms for learning, particularly in the wake of recent global events such as the COVID-19 pandemic. Online collaboration might provide flexibility and access to diverse perspectives, which may also increase student interaction and motivation (Kumi-Yeboah et al., 2020). The findings suggest that online environments, when designed carefully, offer a conducive space for promoting student engagement and collaborative learning experiences.

One key observation is that while collaboration between students is widely reported, collaboration with faculty, researchers, librarians, or external stakeholders remains underrepresented (see EGM for example studies). While peer collaboration among students is broadly practiced and well-documented, the role of engaging with external stakeholders, such as industry partners, community organizations, or other external experts, is relatively less reported. These partnerships can provide valuable real-world insights and practical applications into the learning process, where students could find opportunities to engage with complex, authentic problems similar to those they may encounter in their future professional lives.

Prior research has also underscored the significance of student–staff partnerships in enhancing student engagement (Chakraborty et al., 2019; Mercer-Mapstone et al., 2017). Moreover, Mercer-Mapstone et al. (2017) stress the need for further research into how collaborations with external stakeholders can enrich both student learning and engagement. Engaging with industry professionals and community organizations provides students with practical insights and hands-on experiences that reflect the complexities of their future careers. These interactions not only contribute to students' understanding of course material but also broaden their perspectives, establishing the relevance of their education beyond traditional academic boundaries (Elsharnouby, 2015; Willox et al., 2010). However, such collaborative activities can significantly deepen student engagement by allowing learners to tackle real-world problems and apply theoretical knowledge in practical settings (Mebert et al., 2020).

Despite these potential benefits, existing research has inadequately examined how partnerships with external stakeholders specifically influence student engagement. Future studies should prioritize this area of inquiry, exploring how collaboration with external partners can create more dynamic learning environments and enhance students' readiness for future professional challenges. By actively integrating external stakeholders into the educational process, institutions can create a learning environment that promotes deeper engagement and enriches the student experience while also equipping students with essential skills for performing their roles in their future careers (Dollinger, 2018; Oliveira et al., 2024).

Methodological Issues

The analysis of the research methodologies of the included studies reveals a balanced approach, showing a mix of quantitative, qualitative, and mixed-method studies. This methodological diversity is essential for capturing the complex dynamics of collaborative learning and student engagement. While quantitative studies often employ established frameworks to measure various dimensions of student engagement, ensuring consistency and comparability, qualitative studies utilize inductive coding to explore and identify diverse aspects of student engagement that may not be captured by predefined frameworks. In this way, qualitative findings can unveil dimensions of engagement, such as students' intrinsic motivation, social interactions, and emotional responses to learning experiences. For example, qualitative studies may reveal how teamwork in sports enhances peer relationships and emotional well-being, which are crucial for fostering an inclusive and supportive learning environment. By integrating both quantitative and qualitative approaches, researchers can

develop a more comprehensive understanding of student engagement across various disciplines, ultimately contributing to more effective educational practices and strategies.

The emergence of new constructs, such as agentic engagement and intellectual engagement, adds further conceptual complexity to the study of student engagement. These constructs focus on students' agency in shaping their learning and their deep intellectual involvement, yet they remain underrepresented in the literature. Addressing this gap could provide valuable insights into how students actively participate in their learning processes.

Implications

Future studies should prioritize using a framework and measuring engagement with a clear tool that incorporates multiple dimensions, rather than relying on a holistic approach to engagement. This means recognizing that students might be deeply engaged in learning through emotional connections - such as feeling motivated or connected to a task, even if their cognitive engagement or active participation is less prominent at that moment. By measuring each dimension- behavioral, cognitive, affective/emotional, and social/collaborative, researchers can better understand how different forms of engagement are supported and how they contribute uniquely to students' learning experiences and outcomes. Future studies should also explore how distinct types of student engagement are influenced by co-creation processes involving external stakeholders. Such research could yield valuable insights into how different forms of engagement are activated through these interactions, providing a more comprehensive picture of what makes collaborative learning most effective, including whether partnerships with external stakeholders particularly strengthen cognitive engagement through exposure to real-world problem-solving or whether they foster emotional engagement by allowing students to feel more connected to societal impacts and the industry challenges. These insights could inform the development of more targeted and effective strategies for integrating external collaborations into higher education, which might provide students a more engaging learning experience and ensure that engagement is maximized across all dimensions.

Summary of the Gaps Identified

The systematic scoping review and evidence gap map revealed several gaps in the empirical evidence concerning the relationship between collaborative learning activities and student engagement in higher education. These gaps highlight areas where further research is needed to deepen our understanding of how collaborative learning is related to student engagement. The first gap identified concerns the disjointed investigation of student engagement as a framework. Although the concept of student engagement is defined, it lacks consistent operationalization across studies. The limited number of studies properly measured student engagement across different subject areas. There appears to be a lack of consistent measurement tools or approaches that can be applied across disciplines, making it challenging to compare results or generalize findings. Addressing this gap would involve developing more robust and standardized measures of student engagement that can be used across a range of subject areas. To address this, it is also essential to establish a clearer link between how collaboration could be shaping the student engagement process within the framework.

The second gap relates to the limited involvement of other external stakeholders in studies on collaborative learning. Few studies include the perspectives or roles of these stakeholders in the collaboration process, which could provide valuable insights into how collaborative learning initiatives are planned, facilitated, and evaluated. Broadening the scope of research to incorporate these additional perspectives could improve the understanding of how various stakeholders influence student engagement outcomes in collaborative learning settings. While there is a general focus on collaboration in existing literature, few studies examine specific variations of collaborative learning, such as co-design, and co-construction. More research is needed to explore these different types of collaborative learning activities to understand which approaches can be most effective in fostering student engagement. This could also help identify the key aspects in collaborative learning practices that lead to higher levels of engagement and more meaningful learning experiences. Overall, addressing these gaps would enhance the understanding of the intersection between collaborative learning and student engagement, providing a more comprehensive framework for designing effective educational practices in higher education.

Limitations

This review has several limitations that should be considered in evaluating our findings. While the chosen databases for an extensive search provided broad coverage, excluding other databases may limit the comprehensiveness of the review, as relevant studies from other sources might have been overlooked. Furthermore, this review included studies published only in English, introducing potential language bias, and excluding valuable research conducted in other languages, particularly from non-English-speaking regions. In line with the scoping review methodology, the quality of the studies included was not assessed. Moreover, focusing solely on peer-reviewed publications may exclude valuable insights from grey literature, such as reports, policy documents, and non-peer-reviewed studies, which might provide alternative perspectives on collaborative learning and student engagement. Finally, three articles were inaccessible due to cost restrictions, which may have led to the omission of critical evidence that could have influenced the overall conclusions.

Conclusions

This systematic scoping review provides a broad overview of the current research on collaborative learning and student engagement in higher education. We mapped the characteristics of empirical studies in this field, explored the different concepts and stakeholder roles in collaborative learning processes, and examined the dimensions of student engagement most frequently assessed. These findings highlight several important gaps in the extant literature. Although there is growing interest in collaborative learning, the lack of consistent operationalization of student engagement and the limited exploration of specific forms of collaboration hinder a comprehensive understanding of their association. Furthermore, the underrepresentation of diverse stakeholders and the insufficient measurement across various subject areas further restrict the insights that can be drawn. Addressing these gaps will be crucial for advancing collaborative learning practices and enhancing student engagement in higher education.

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