

# A Systematic Literature Review of Empirical Studies on Learning Engagement in Educational Settings

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## Abstract

Learning engagement is a crucial aspect of educational success, yet its complexities remain a subject of ongoing investigation. This systematic literature review presents a comprehensive synthesis of empirical research on learning engagement, meticulously curated through a thorough review process. Drawing upon a diverse array of scholarly works, this review delves into the antecedents and outcomes of learning engagement, shedding light on its multifaceted nature. Various measurement methods, including surveys, interviews, and observation, are explored, emphasizing the diverse approaches to understanding and assessing engagement. Key findings underscore the pivotal roles of intrinsic motivation, perceived value, self-regulation, and social support in nurturing learning engagement among learners. Moreover, methodological considerations are critically examined, paving the way for future research avenues aimed at deepening our comprehension of learning engagement dynamics within diverse educational contexts. This review serves as a valuable resource for educators, researchers, and policymakers seeking to enhance student engagement and academic outcomes.

**Keywords:** Systematic literature review, learning engagement, empirical research

## Abstrak

Penglibatan pembelajaran adalah aspek penting dalam kejayaan pendidikan, namun kerumitannya masih menjadi subjek penyiasatan yang berterusan. Kajian literatur sistematik ini membentangkan sintesis komprehensif penyelidikan empirikal mengenai penglibatan pembelajaran, disusun dengan teliti melalui proses semakan yang menyeluruh. Dengan menggunakan pelbagai karya ilmiah, ulasan ini menyelidiki antededen dan hasil penglibatan pembelajaran, menjelaskan sifatnya yang pelbagai rupa. Pelbagai kaedah pengukuran, termasuk tinjauan, temu bual dan pemerhatian, diterokai, menekankan pendekatan yang pelbagai untuk memahami dan menilai penglibatan. Penemuan utama menggariskan peranan penting motivasi intrinsik, nilai yang dirasakan, pengawalan sendiri, dan sokongan sosial dalam memupuk penglibatan pembelajaran dalam kalangan pelajar. Selain itu, pertimbangan metodologi diteliti secara kritis, membuka jalan untuk jalan penyelidikan masa depan yang bertujuan untuk memperdalam pemahaman kami tentang dinamik penglibatan pembelajaran dalam konteks pendidikan yang pelbagai. Semakan ini berfungsi sebagai sumber yang berharga untuk pendidik, penyelidik dan penggubal dasar yang ingin meningkatkan penglibatan pelajar dan hasil akademik.

**Kata kunci:** Tinjauan literatur sistematik, penglibatan pembelajaran, penyelidikan empirikal

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## 1.0 INTRODUCTION

Learning engagement stands as a critical determinant of students' academic success, persistence in learning endeavors, and overall educational fulfillment (Fredricks et al., 2005; Fredricks et al., 2004). Self-determination theory (Deci & Ryan, 1985) and theories of effectance motivation suggest that it is the degree of attention, interest, and enthusiasm students invest in their learning activities, shaping their academic performance and long-term educational outcomes (Halverson & Graham, 2019; Hiver et al., 2024; Trowler, 2010). Recognizing the multifaceted nature of learning engagement, it becomes imperative for educators, policymakers, and researchers to unravel the myriad factors influencing learners' active involvement in educational pursuits. These factors range from individual attributes such as motivation, self-efficacy, and personality to contextual elements such as interaction with instructors, classroom environment, and technological integration (Hiver et al., 2024; Trowler, 2010). By comprehensively understanding these determinants, stakeholders can devise tailored interventions to foster a conducive learning environment, thereby promoting students' academic achievement and overall academic success.

While the significance of learning engagement is widely acknowledged, the literature lacks a consolidated synthesis of empirical research in this domain. Numerous studies have delved into various facets of learning engagement (Alemayehu & Chen, 2023; Breien & Wasson, 2021; Bryson & Hand, 2007; Nkhoma et al., 2014), yet a systematic integration of these findings is missing, preventing a holistic

understanding. This systematic literature review aims to bridge this gap by undertaking a comprehensive analysis of empirical studies on learning engagement. Specifically, this review has the following objectives:

1. To identify the main characteristics of empirical research on learning engagement, including research publication and citation trends, research distribution, research methodology, research design.
2. To analyze the subjective and objective factors affecting students' learning engagement and outcomes of learning engagement.

Through this synthesis, the review seeks to offer valuable insights for educators, policymakers, and researchers to inform evidence-based practices and initiatives aimed at enhancing students' learning experiences and fostering academic success.

## ■2.0 METHODOLOGY

### 2.1 Search Strategy

This review adheres to the systematic review guidelines (Page et al., 2021) to identify, select, and synthesize relevant empirical studies on learning engagement. The search strategy involved comprehensive searches of electronic databases, including Elsevier ScienceDirect, Springer Link, Wiley Online Library, EBSCO ERIC, and Web of Science. Each covers a broad range of disciplines, ensuring a diverse and comprehensive collection of studies relevant to learning engagement. The journals indexed in these databases typically adhere to strict peer-review processes, ensuring the inclusion of high-quality and rigorously evaluated research. Many of the journals and articles within these databases are of high impact, significantly contributing to the advancement of knowledge in their respective fields. Additionally, these databases are readily accessible to researchers, providing an extensive and easily navigable repository of scholarly articles and empirical studies.

Furthermore, this review uses predefined search terms, including "Learning Engagement," "Academic Engagement," "Student Engagement," and "School Engagement" (Reschly & Christenson, 2012). While terms such as "Involvement" and "Participation" are also used in the literature, "Engagement" was predominantly employed by researchers to describe students' learning engagement, as highlighted by Henrie et al. (2015). Therefore, this study focused on the keyword "Engagement" to ensure a comprehensive retrieval of empirical research articles related to learning engagement. To capture a wide range of relevant studies and facilitate a thorough analysis of learning engagement in educational contexts, the search was limited to articles published between January 1, 2010, and February 29, 2024, resulting in a total of 3,468 articles retrieved.

### 2.2 Inclusion and Exclusion Criteria

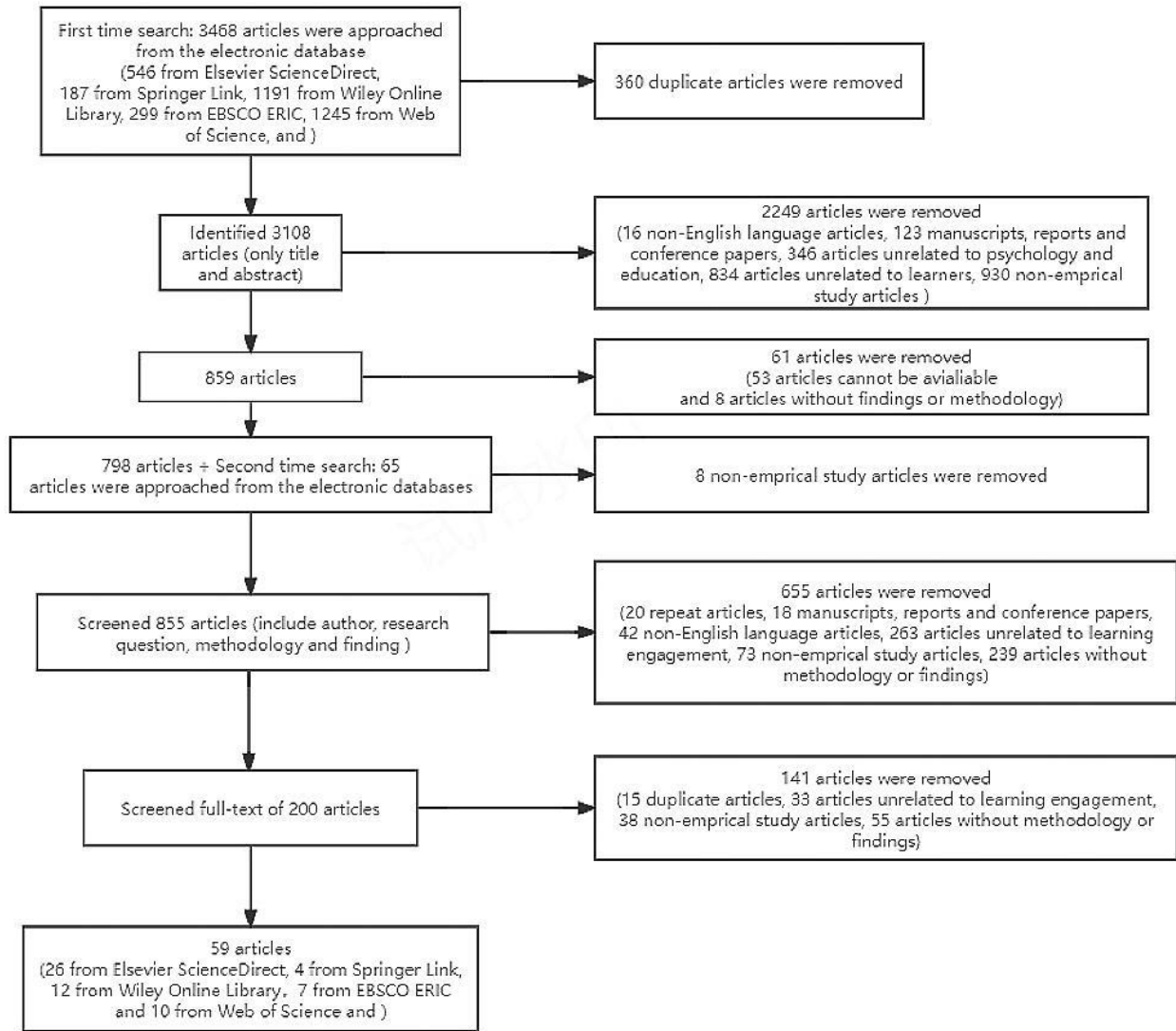
To ensure the selection of high-quality empirical research relevant to the research question, enhancing the reliability and validity of the literature analysis, as show in Table 1, this study developed inclusion/exclusion criteria based on the research question (Indriasari et al., 2020). The inclusion criteria encompass empirical studies published by English language in peer-reviewed journals from diverse disciplinary perspectives, including medicine, education, psychology, linguistics, and computer science. Studies focusing on learners of all ages and races are considered. Besides, the literature on indicators, influencing factors, and measurement methods related to learning engagement are included while studies that treat learning engagement as an unprimary variable are excluded

**Table 1** Inclusion and exclusion criteria

No.	Inclusion criteria	Exclusion criteria
1	Empirical studies	Non-empirical studies
2	Published in English language	Published in non-English language
3	Peer-reviewed journal	Manuscripts, reports and conference papers
5	learners of all ages and races	Non-learners
6	learning engagement as the primary research variable	learning engagement as the unprimary research variable

### 2.2 Study Selection Procedures

This study followed the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PRISMA is a commonly used method, consisting of 27 items covering various aspects such as title, abstract, methods, results, discussion, and four stages as outlined by Page et al. (2021). Following this approach, the study ultimately identified 59 eligible articles. Specifically, 26 articles were sourced from Elsevier ScienceDirect, 4 articles from Springer Link, 12 articles from Wiley Online Library, 7 articles from EBSCO ERIC, and 10 articles from Web of Science. Among these, 2 articles were indexed in SSCI, 7 in SCI, 11 in both SSCI and SCI, and 1 in neither SSCI nor SCI. The PRISMA flow diagram detailing the study selection process is depicted in Figure 1. Subsequently, the selected 59 articles underwent coding analysis across various dimensions including authorship, publication year, country, indicator, disciplinary background, research context, study population, study period, research methodology, factors, and research findings.



**Figure 1** PRISMA Flow diagram

**Table 2** Summary of included studies

Author and year	Discipline/field	Study design	Sample information	Duration of study	Predictors/factors of learning engagement	Outcome of learning engagement
Bergdahl et al. (2020)	Technology	Mix research	Secondary school student-410	At a single point in time	NA	Grades
Bond and Bedenlier (2019)	Technology	Non-experimental research	Varied	Varied	<ul style="list-style-type: none"> <li>• Internal psychosocial</li> <li>• Learning environment and technology</li> <li>• Teacher</li> <li>• Curriculum/activity</li> <li>• Peers</li> <li>• Family</li> </ul>	<ul style="list-style-type: none"> <li>• Mental health</li> <li>• Interpersonal relationship</li> <li>• Academic motivation, performance and so on.</li> </ul>
De Carolis et al. (2019)	Computer science	Experimental research	Undergraduate students-19	NA	<ul style="list-style-type: none"> <li>• Low stress</li> <li>• High relaxation</li> </ul>	NA
Casey et al. (2011)	Nursing	Qualitative research	Undergraduate students-37	2 months	Peer assessment	NA
D'Mello et al. (2017)	Varied	Non-experimental research	Varied	Varied	NA	NA
Darnell and Krieg (2019)	Varied	Experimental research	Undergraduate students-15	At a single point in time	NA	NA
Filsecker and Hickey (2014)	Science	Quasi-experimental research	Primary school students-106	2 weeks	External Rewards	NA
Göksün and Gürsoy (2019)	Science	Mix research	Pre-service teachers-71	6 weeks	Gamified learning experiences	NA
Hew (2016)	Education	Mix research	Undergraduate student-965	NA	<ul style="list-style-type: none"> <li>• Learning environment and technology</li> <li>• Teacher</li> <li>• Curriculum/activity</li> <li>• Peers</li> <li>• Family</li> </ul>	NA
Junco et al. (2011)	Biology and chemistry	Experimental research	Undergraduate students-125	14 weeks	Twitter	NA
Jung and Lee (2018)	Education	Quasi-experimental research	Undergraduate students-306	At a single point in time	<ul style="list-style-type: none"> <li>• Academic self-efficacy</li> <li>• teaching presence</li> <li>• perceived usefulness</li> </ul>	NA
Koltovskaia (2020)	English	Case study	Undergraduate students-2	16 weeks	NA	NA

Author and year	Discipline/field	Study design	Sample information	Duration of study	Predictors/factors of learning engagement	Outcome of learning engagement
Ninaus et al. (2019)	Math	Mix research	Undergraduate students-122	NA	Game-based learning	NA
Sinha et al. (2015)	Science	NA	High school students-36	NA	Computer supported collaborative learning environment	NA
Soffer and Cohen (2019)	Education	Learning analysis	Undergraduate students-646	NA	NA	Academic performance
Steen-Utheim and Foldnes (2018)	Math	NA	Undergraduate students-12	2 semesters	Flipped classroom	NA
Xie et al. (2020)	General	Survey research	High school students-10527	At a single point in time	Academic motivation	GPA
Zhang et al. (2019)	Business	Survey research	Postgraduate students-181	8 weeks	<ul style="list-style-type: none"> <li>• Mutual trust</li> <li>• Social influence</li> <li>• Reward valence</li> </ul>	<ul style="list-style-type: none"> <li>• Learning</li> <li>• Work satisfaction</li> </ul>
Yang (2011)	English	Experimental research	Undergraduate students-118	18 weeks	Online situated language learning environment	NA
Ward et al. (2016)	Psychology	NA	Undergraduate students-186	NA	Virtual online simulation	NA
Walji et al. (2016)	General	NA	Undergraduate students-NA	NA	<ul style="list-style-type: none"> <li>• Teacher presence,</li> <li>• Social learning and</li> <li>• Peer learning</li> </ul>	NA
Sun and Rueda (2012)	General	Survey	Graduate students-203	At a single point in time	<ul style="list-style-type: none"> <li>• Situational interest</li> <li>• Computer self-efficacy and</li> <li>• Self-regulation</li> </ul>	NA
Stott (2016)	Science	NA	Undergraduate students-465	NA	NA	NA
Scogin and Stuessy (2015)	Science	Case study	Primary school students-10	6 weeks	Online scientist-mentors	NA
Phan et al. (2016)	Digital storytelling	Quasi-experimental research	Undergraduate students-573	5 weeks	NA	Performance
Pellas and Kazanidis (2015)	Computer science	Comparative study	Undergraduate students-125	6 weeks	Online learning	NA

Author and year	Discipline/field	Study design	Sample information	Duration of study	Predictors/factors of learning engagement	Outcome of learning engagement
Pellas (2014)	Online course	Survey research	Undergraduate students-305	At a single point in time	<ul style="list-style-type: none"> <li>• Computer self-efficacy</li> <li>• Self-esteem</li> <li>• Metacognitive self-regulation</li> </ul>	NA
Mello (2016)	Bioinformatics	Action research	Postgraduate students-121	5 years	Online resources	NA
Ma et al. (2015)	Multi-disciplines	Learning analysis	Undergraduate students-NA	8 months	Instructors' role	NA
Ma et al. (2021)	Information engineering	Experimental research	Undergraduate students-112	At a single point in time	video feature fusion of online learning	GPA
Dewan et al. (2018)	Online course	Experimental research	Undergraduate students-112	At a single point in time	E-environments	NA
Dubbaka and Gopalan (2020)	Psychology	Experimental research	Undergraduate students-26	At a single point in time	<ul style="list-style-type: none"> <li>• Instructors</li> <li>• Learning materials</li> </ul>	MOOC completion
Katsioudi and Kostareli (2021)	Biomedical/medical science	Experimental research	Undergraduate students-99	1 week	Educational technology: <ul style="list-style-type: none"> <li>• personal response systems</li> <li>• sandwich model</li> </ul>	<ul style="list-style-type: none"> <li>• Academic performance</li> <li>• Learning satisfaction</li> </ul>
Smiderle et al. (2020)	Computer	Quasi-experimental research	Undergraduate students-40	4 months	<ul style="list-style-type: none"> <li>• Personal characteristics</li> <li>• Gamified learning environment</li> </ul>	NA
Ke et al. (2016)	Computer	Multiple-case study	Undergraduate students-5	2 weeks	Gameplay environment	Multiple learning process
Xu et al. (2020)	Psychology	Quasi-experimental research	Undergraduate students-46	1 semester	<ul style="list-style-type: none"> <li>• Semi-synchronous online discussion setting</li> <li>• Group interaction and cooperation</li> <li>• Teachers</li> </ul>	NA
Li et al. (2022)	Language	Experimental research	Undergraduate students-36	At a single point in time	Experiential learning-based VR approach	Academic performance
Talan and Gulsecen (2019)	Computer	Experimental research	Undergraduate students-119	1 semester	<ul style="list-style-type: none"> <li>• Blended learning</li> <li>• Flipped classroom</li> </ul>	Quiz Learning activities Homework

Author and year	Discipline/field	Study design	Sample information	Duration of study	Predictors/factors of learning engagement	Outcome of learning engagement
Chen and Chiu (2016)	NA	Quasi-experimental research	Primary school students-58	9 weeks	Design based learning method Intergroup competition	<ul style="list-style-type: none"> <li>• Learning achievement</li> <li>• Creativity</li> </ul>
Zhang et al. (2020)	Computer	Experimental research	Undergraduate students-47	At a single point in time	<ul style="list-style-type: none"> <li>• Learning engagement detection algorithm</li> <li>• Online learning environment</li> </ul>	Performance
Gu et al. (2022)	Morden educational technology	Quantitative classroom observation framework	Undergraduate students-36	1 semester	Flipped classroom approach	NA
Tsai et al. (2020)	Computer	Experimental research	Undergraduate students-163	1 semester	<ul style="list-style-type: none"> <li>• Activity based learning</li> <li>• Meaningful learning</li> <li>• Students' skills in using PowerPoint and Word</li> </ul>	NA
Hu and Hui (2012)	Computer	Experimental research	Undergraduate students-212	At a single point in time	Technology-mediated learning Computer self-efficacy	Perceived effectiveness and satisfaction
Khaleel et al. (2020)	Programming language course	Mixed research	Undergraduate students-60	At a single point in time	Gamification technique	Learning progress
Neugebauer et al. (2016)	NA	Experimental research	Undergraduate students-124	At a single point in time	Cooperative learning task,	Final test performance
Goldberg et al. (2011)	NA	Experimental research	Learners-17	At a single point in time	Personality factors Web-based training system	NA
Motz et al. (2017)	English	Experimental research	Undergraduate students-79	At a single point in time	NA	<ul style="list-style-type: none"> <li>• Student achievement</li> <li>• Test performance</li> </ul>
Sullivan et al. (2017)	Physics	Quasi-experimental research	Secondary school students-100	1 year	virtual experiments materials	Academic performance
Kraft and Dougherty (2013)	English/Mathematics	Mixed research	Secondary school students-140	1 semester	<ul style="list-style-type: none"> <li>• Teacher-family communication</li> <li>• Motivation</li> </ul>	NA
Chen et al. (2019)	Digital learning course	Quasi-experimental research	Undergraduate students-38	18 weeks	<ul style="list-style-type: none"> <li>• Flipped learning</li> <li>• Reflective thinking promoting approach</li> </ul>	Academic performance

Author and year	Discipline/field	Study design	Sample information	Duration of study	Predictors/factors of learning engagement	Outcome of learning engagement
Reeve et al. (2022)	NA	Quasi-experimental research	Undergraduate students-242	At a single point in time	<ul style="list-style-type: none"> <li>Supportive learning environment</li> <li>Motivational satisfaction</li> </ul>	NA
Ribeiro et al. (2019)	Medicine	Experimental research	Undergraduate students-72	6 days	deliberate reflection	<ul style="list-style-type: none"> <li>Motivation</li> <li>Test scores</li> </ul>
Foldnes (2016)	Mathematics	Case study	Undergraduate students-1569	16 weeks	<ul style="list-style-type: none"> <li>Flipped classroom environment</li> <li>Teamwork</li> </ul>	Exam performance
Sung et al. (2010)	History	Quasi-experimental research	Undergraduate students-62	At a single point in time	Mobile electronic guidebook based on Human-computer-context interaction (HCCI) framework	NA
Sun et al. (2020)	English	Quasi-experimental research	Undergraduate students-69	At a single point in time	Virtual reality technology based English learning system	Learning effectiveness
Fatawi et al. (2020)	Web Programming course	Quasi-experimental research	Undergraduate students-81	6 weeks	Web-based Learning Management System	Test scores
Lackmann et al. (2021)	Psychology	Experimental research	Undergraduate students-26	At a single point in time	<ul style="list-style-type: none"> <li>Lecture capture</li> <li>Infographic video</li> </ul>	Learning performance
Lo and Hew (2021)	Mathematics	Design-based research approach	Secondary school students-183	1 year	Flipped learning	NA
Shi et al. (2018)	Chinese	Quasi-experimental research	Undergraduate students-96	Three months	Smart classroom-based instructional approach	Test scores

### 2.3 Data Extraction and Synthesis

The data were extracted by the first author into a shared Excel spreadsheet and verified by the second author. The extraction table included the characteristics of publication, author, study design, research methodology at baseline



### 3.0 RESULTS

#### 3.1 The Publication and Citation Trends of Empirical Research

The publication and citation trends of empirical research on learning engagement depict a consistent upward trajectory over the years, as illustrated in Figure 2. This suggests a sustained and rising interest among researchers in the phenomenon of learning engagement. In terms of journal distribution, out of the 59 articles, 43 were published across different educational journals (72.9%), 7 in psychology journals (11.9%), with the others in interdisciplinary and computer science journals (15.2%). The top three journals in terms of publication count are "Computers & Education," "British Journal of Educational Psychology," and "Journal of Computer-Assisted Learning," which also happen to be the sources of the highest cited articles. Regarding citation rates, 12 articles have been cited more than 22 times, with 5 articles exceeding 60 citations. Notably, the most cited article by Junco et al. (2011) explores the impact of social media tools, particularly Twitter, on student learning engagement and academic performance (2668 citations), followed by Filsecker and Hickey (2014) study on the effects of external rewards in gamified teaching on student learning engagement (381 citations). It is evident that highly cited articles predominantly focus on factors influencing learning engagement and strategies for enhancement. It's worth noting that articles cited over 55 times were predominantly published between 2011 and 2018, potentially due to recent publications not having had sufficient time to accumulate a higher number of citations.

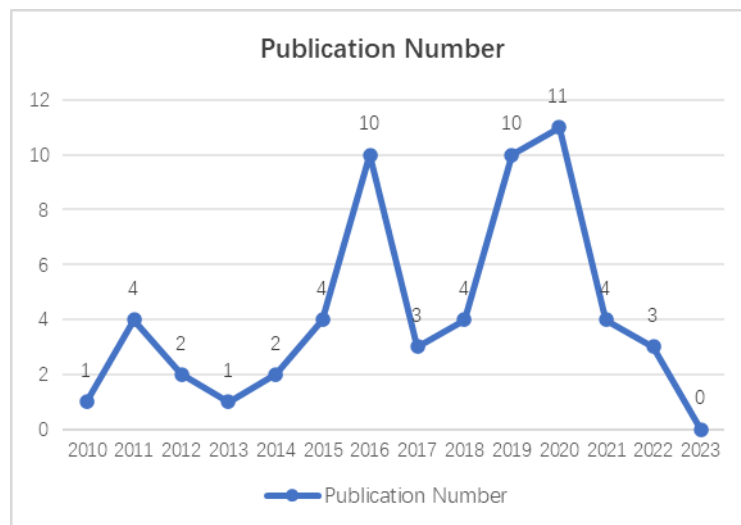


Figure 2 The publication trends of empirical research on learning engagement

#### 3.2 Characteristics of Author Distribution

To illustrate the distribution of authors in empirical research on learning engagement, the study analyzed the first authors of the 59 sampled articles. It was found that the authors hailed from a total of 20 different countries, with regional distributions as follows: North America (n=26, 44.1%), Europe (n=18, 30.5%), Asia (n=11, 18.6%), Oceania (n=2, 3.4%), and South America (n=2, 3.4%). In terms of the number of contributing authors, there were a total of 20 authors from the United States, constituting 41.7% of the total author count. This indicates that scholars from the United States are the primary contributors to empirical research on learning engagement, holding a significant presence in the field.

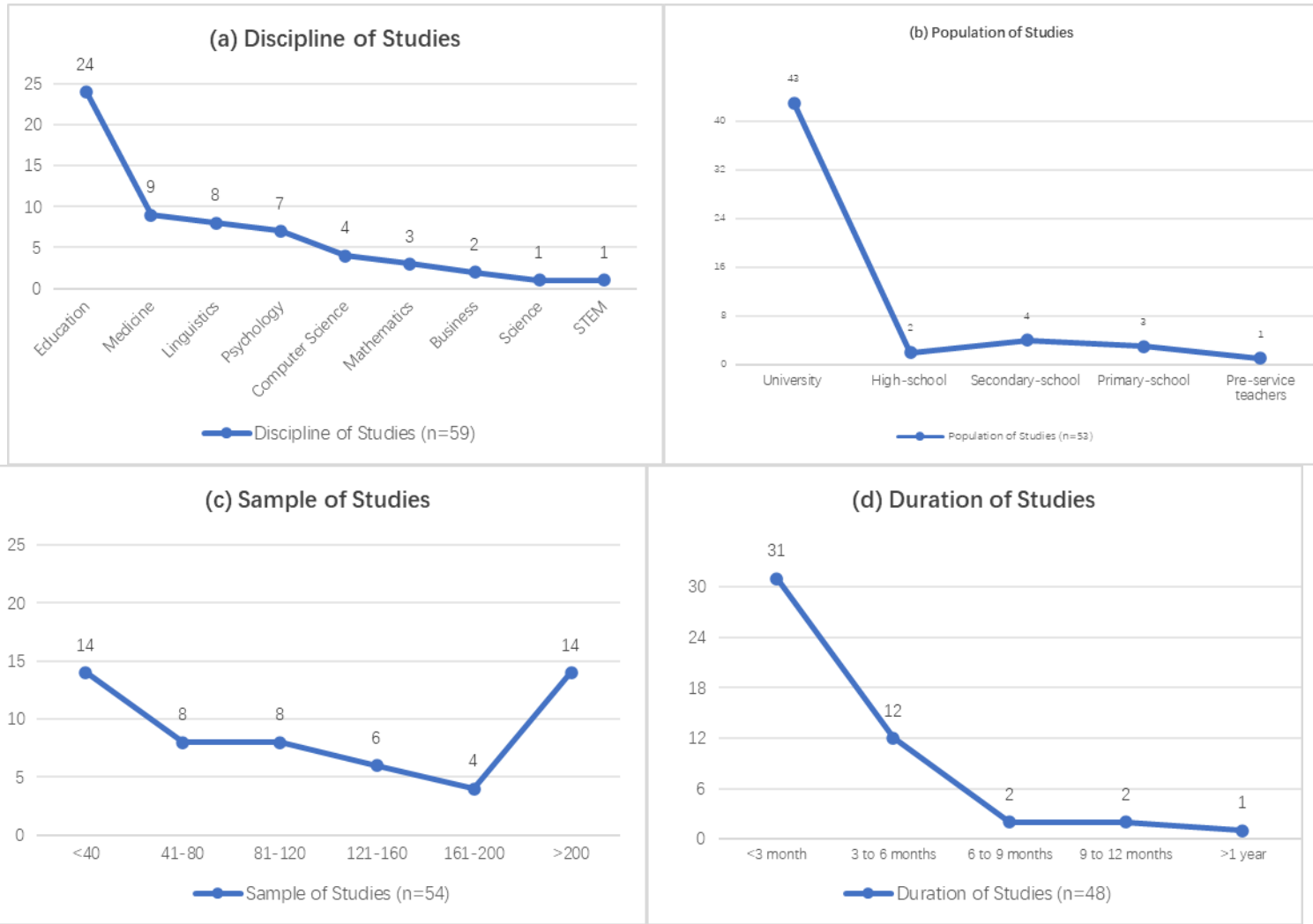
#### 3.3 Characteristics of Research Methodology

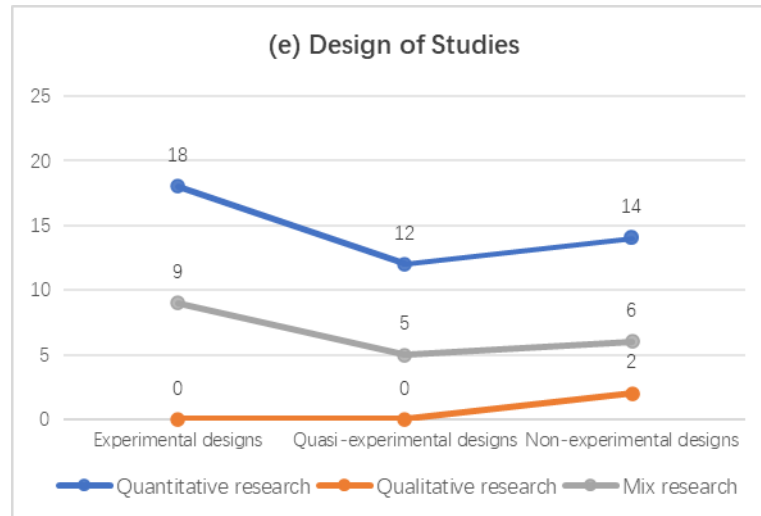
To further analyze the research context and experimental designs related to learning engagement, this study conducted a systematic analysis of indicators such as disciplinary of studies, population of studies, sample of studies, and duration of studies among the sampled literature. The analysis of disciplinary backgrounds revealed that empirical research on learning engagement over the past decade is not confined to the field of education alone. Scholars from disciplines such as medicine, education, psychology, linguistics, and computer science have also shown interest in learning engagement. However, researchers from the fields of education, medicine, and linguistics exhibit the highest level of interest and have contributed extensively to the research, as depicted in Figure 3a. Regarding the categories of study populations, it was observed in empirical research on learning engagement over the past decade, university students constituted the majority at 72.9% (n=43), followed by high school students at 3.4% (n=2), primary school students at 5.1% (n=3), and others (pre-service teachers) at 1.7% (n=1), as shown in Figure 3b. This indicates that the primary focus of empirical research on learning engagement is university students, with relatively lesser attention paid to middle and primary school students. This could be attributed to the added complexity involved in conducting experimental research with younger students, which often necessitates obtaining consent from teachers or parents. In terms of sample size, the analysis revealed that in empirical research on learning engagement over the past decade, 23.7% (n=14) of studies had sample sizes of fewer than 40 participants, while 23.7% (n=14) had sample sizes exceeding 200 participants. Besides, the distribution of sample sizes in other studies was relatively equal, as depicted in Figure 3c. This suggests that the sample sizes in empirical research on learning engagement are primarily controlled to around one class size, facilitating study design and control of

relevant variables while avoiding the limitations associated with excessively small sample sizes. However, some studies had sample sizes exceeding 200 participants, indicating long-term tracking surveys targeting large student populations. Furthermore, the majority of studies (79.7%,  $n=47$ ) having research durations of less than one year. Among these, studies with durations of 3 to 6 months were the most prevalent, accounting for 20.3% ( $n=12$ ), as illustrated in Figure 3d. It is evident that current empirical research on learning engagement mainly spans between 3 to 12 months, allowing for well-designed iterative designs and intervention optimizations while ensuring the reliability of research outcomes.

### **3.4 Characteristics of Research Design**

This study categorizes empirical research design into three types: experimental designs, quasi-experimental designs, and non-experimental designs (Flynn et al., 1990). Experimental designs involve controlling experimental conditions and arranging experimental procedures to analyze the relationship between experimental conditions and outcomes, typically employing random assignment. Quasi-experimental designs refer to studies where the independent variable cannot be directly manipulated, and additional variables in the study cannot be strictly controlled. These designs do not use random assignment but involve multiple groups and measurements, such as setting control groups and comparison groups. Other designs fall under non-experimental designs. Upon analyzing the empirical research methods of the 59 empirical research articles (see Figure 3e), it was found that 18 articles employed experimental designs (30.50%), 13 articles used quasi-experimental designs (22%), and 14 articles belonged to non-experimental designs (23.7%). Regarding data analysis methods, experimental designs predominantly utilized mixed analysis methods combining quantitative and qualitative approaches ( $n=9$ , 50%), while quasi-experimental designs primarily relied on quantitative research ( $n=12$ , 70.6%) and mixed methods ( $n=5$ , 29.4%). Non-experimental designs tended to favor quantitative research ( $n=21$ , 72.4%). Overall, the majority of studies primarily employed quantitative research ( $n=44$ , 74.6%) and mixed methods ( $n=20$ , 33.9%). This analysis highlights the diverse methodological approaches employed in empirical research on learning engagement, emphasizing the prevalence of quantitative research methods and the incorporation of mixed methods to provide comprehensive insights into learning engagement.





**Figure 3.** Characteristics of study methodology

### 3.5 Antecedents of Learning Engagement

The factors affecting learning engagement have always been the focus of researchers. An analysis of the 59 retrieved articles found that 51 (86.4%) articles involved research on the factors affecting learning engagement. Referring to the definition of the factors affecting learning engagement, this study divides the factors affecting learning engagement into teachers, students, courses/activities, environment/technology, and peers, and sorts out the specific indicators of the factors affecting learning engagement based on the literature (see Table 2). Intrinsic motivation emerges as a key predictor of learning engagement, reflecting learners' inherent interest and enjoyment in activities (Filsecker & Hickey, 2014; Ninaus et al., 2019; Xie et al., 2020). Perceived value, self-efficacy beliefs, and goal orientation also play crucial roles in shaping individual engagement trajectories (Göksün & Gürsoy, 2019; Hew, 2016; Koltovskaia, 2020; Ma et al., 2015; Sun & Rueda, 2012). Furthermore, social support from teachers, peers, and family members fosters a supportive learning environment conducive to engagement and motivation (Bergdahl et al., 2020; Casey et al., 2011; Sinha et al., 2015; Zhang et al., 2019). Starting from the factors affecting learning engagement, we can further explore the strategies or measures to improve students' learning engagement. For teachers, students' learning engagement can be improved in three ways: (1) Improve the quality of course design and leveraging exploratory learning activities in promoting students' learning engagement (Diana et al., 2019); (2) At the same time, learners' learning engagement can be promoted through gamified classroom situations (Göksün et al., 2019); (3) Provide robust guidance and support throughout the learning process to assist students better understand and integrate into course content and improve their participation in classroom activities; (4) Utilize online forums and social media in promoting students' learning engagement and designing teaching situations that integrate multiple media tools. For students, their learning engagement can be improved in two ways: (1) Enhance students internal initiative and promoting learning engagement by cultivating interest and improving intrinsic motivation in learning; (2) Leverage the external role of peer support and promoting learning engagement through actively cooperating, communicating, sharing, and evaluating with peers.

### 3.6 Outcomes of Learning Engagement

Learning engagement is associated with a myriad of positive outcomes, including academic achievement, language proficiency, and psychological well-being (Boulton et al., 2019; Fredricks et al., 2004; Mello, 2016; Pellas & Kazanidis, 2015). Engaged learners demonstrate higher levels of cognitive engagement, persistence, and adaptive learning strategies, leading to improved learning outcomes over time (Lackmann et al., 2021; Phan et al., 2016; Scogin & Stuessy, 2015; Wang & Degol, 2014). This heightened cognitive engagement not only facilitates a deeper understanding of the subject matter but also encourages the development of critical thinking and problem-solving skills, which are essential for academic and professional success. Moreover, learning engagement enhances intercultural competence, empathy, and social connectedness (Chen & Chiu, 2016; Gu et al., 2022; Katsioudi & Kostareli, 2021; Stott, 2016). In an increasingly globalized world, the ability to interact and collaborate with individuals from diverse backgrounds is crucial. Engaged students are more likely to interact with peers from various cultural contexts, promoting the exchange of cultural perspectives and fostering a more inclusive and empathetic educational atmosphere. This intercultural interaction helps students develop a greater understanding and appreciation of different cultures, essential for personal and professional growth. Additionally, engaged learners often exhibit better psychological well-being. They typically report higher levels of satisfaction with their educational experiences and a stronger sense of purpose and fulfillment. This positive emotional state can reduce stress and anxiety, leading to better overall mental health. The sense of community and belonging that comes with active engagement also provides students with a support network, helping them cope with academic and personal challenges. Furthermore, learning engagement significantly contributes to the development of social skills and relationships. Engaged students are more likely to collaborate with their peers, participate in group activities, and engage in meaningful

discussions, enhancing their social connectedness and communication skills. These interactions not only enrich the learning experience but also prepare students for collaborative and team-based work environments in their future careers.

#### ■4.0 DISCUSSION

Despite significant advancements in understanding learning engagement, several methodological challenges and gaps in the literature warrant attention. This review highlights the need for future research to adopt longitudinal designs to examine the dynamic nature of engagement processes over time. Longitudinal studies can provide valuable insights into how engagement evolves, is sustained, or fluctuates across different stages of learning and development. Understanding these temporal dynamics is crucial for developing interventions that foster sustained engagement and academic success. Additionally, studies employing mixed-methods approaches can offer comprehensive insights into the complex interplay of individual, contextual, and instructional factors shaping learning engagement. Combining quantitative and qualitative methods allows for a more nuanced exploration of engagement, capturing both measurable outcomes and the underlying experiences and perceptions of learners. Such approaches can bridge the gap between large-scale generalizations and in-depth, context-specific understandings, providing a holistic view of engagement phenomena.

Furthermore, cross-cultural investigations are needed to elucidate cultural variations in engagement patterns and their implications for learning pedagogy and practice. Engagement is influenced by cultural norms, values, and educational systems, which can vary significantly across different regions and societies. By examining engagement in diverse cultural contexts, researchers can identify universal principles and culturally specific strategies that enhance engagement. This knowledge is essential for developing culturally responsive pedagogies that cater to the diverse needs of learners in a globalized world.

Moreover, the review underscores the importance of intrinsic motivation, perceived value, self-regulation, and social support in nurturing learning engagement. However, the interplay between these factors and their collective impact on engagement remains underexplored. Future research should delve deeper into the synergies and potential conflicts among these elements, investigating how they can be harnessed together to create a supportive and motivating learning environment. Understanding these interactions can inform the design of interventions and instructional strategies that effectively enhance engagement.

In short, this systematic literature review provides a comprehensive synthesis of the antecedents and outcomes of learning engagement, highlighting key factors that contribute to its development. However, significant methodological challenges and research gaps remain. Addressing these challenges through longitudinal studies, mixed-methods approaches, cross-cultural investigations, and innovative measurement techniques will enhance our understanding of learning engagement and inform the development of effective strategies to promote it across diverse educational contexts. This knowledge is crucial for educators, researchers, and policymakers striving to improve student engagement and academic outcomes.

#### ■5.0 CONCLUSION

In conclusion, this systematic literature review provides a comprehensive synthesis of empirical research on learning engagement. By mainly examining the antecedents and outcomes of learning engagement, this review offers valuable insights for educators, researchers, and policymakers seeking to promote effective learning experiences. Moving forward, interdisciplinary collaborations and methodological innovations are essential for advancing our understanding of learning engagement dynamics and optimizing educational practices in diverse cultural contexts.

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