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Variables influencing students' learning motivation: critical literature review

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This study presents a critical literature review exploring the variables influencing student learning motivation between 2017 and 2023. The study analyzes 84 empirical studies to identify trends and patterns across diverse demographics, including varied age groups and cultural backgrounds, focusing on contrasting Eastern and Western educational contexts. This study aims to fill the existing gap by examining a wider range of populations in recent years to assess the relationship between learning motivation and the factors that influence it. Six pivotal factors influencing learning motivation were identified: psychological values, cognitive factors, social and environmental influences, demographic factors, academic background and study habits, and interventions and programs, each contributing uniquely to the understanding of student motivation. Moreover, the findings underscore the predominance of psychological values in Eastern countries, whereas the Western literature focuses on social and environmental influences. This review acknowledges the nuanced relationship between cultural constructs and learning motivation research, emphasizing the need for culturally sensitive educational policies and practices. Additionally, by taking into account the recent advancements in technology and the effects of global events such as the COVID-19 pandemic, this study considers additional motivational factors, presenting a holistic view that could inform future educational interventions and academic policies. For example, the revised categorization in our study emphasizes the complex and interconnected nature of the factors affecting learning motivation, highlighting the interaction among psychological, social, cognitive, and demographic dimensions.

KEYWORDS

motivation, learning, external influences, systematic literature review, academic motivation

1 Introduction

Learning motivation has been extensively researched in the fields of education, psychology, neuroscience, and sociology. The research also crosses multiple academic and applied fields to understand the drive of individuals toward learning. Previous studies have suggested a relationship among learning motivation, academic achievement, and lifelong learning (Amrai et al., 2011; Cetin, 2015; Gupta and Mili, 2017). Research on learning motivation not only contributes to understanding how individuals' personal growth and wellbeing can be fostered, but also in developing educational programs and public policies.

The origins of learning motivation research can be traced back to early behavioral theories, whereby researchers focused on the impact of external stimuli and reinforcement on motivation as responses to rewards and punishment. Notable researchers such as

Skinner (1938) explored the role of positive and negative reinforcements in shaping behavior. This was followed by the cognitive revolution of the 1960s and 1970s. A significant study from this period was Mischel et al.'s (1972) Marshmallow Experiment, which demonstrated the influence of children's motivation and self-control on long-term outcomes such as academic achievement and success in life, known as delayed gratification. Subsequently, self-determination theories highlighted the role of intrinsic motivation, autonomy, competence, and relatedness in driving behavior. Following these, social cognitive theories, the expectancy-value theory, and goal-orientation theory emerged as prominent research topics. Over the years, there has been increasing focus on the impact of environmental factors such as technology and cultural differences on motivation within diverse educational contexts. Additionally, contemporary research has increasingly recognized the dynamic interaction between intrinsic and extrinsic motivational factors, emphasizing how these elements work together to influence student engagement and learning outcomes. Currently, motivation is understood as reflecting the social and cultural contexts of the larger ecosystem in which the learner exists rather than an isolated individual phenomenon.

While a large body of research has examined the relationships between learning motivation and various factors and outcomes, few studies have systematically reviewed the learning motivation literature. To provide some examples of literature review, Aryadoust et al. (2023) conducted a meta-analysis review that explained the interactions between micro- and macro-structures surrounding the learner in influencing language learning motivation. The review suggests that most studies have focused on the second language motivational self-system or teaching experience. Jansen et al.'s (2022) meta-analytic review focusing on the K-12 population indicates that student variables (achievement, socioemotional variables, and background) and instructional variables (teacher factors, interventions, and technology) were both similarly related to academic motivation. Specifically, socioemotional and achievement variables for students, and instructional variables for teachers were important. Meanwhile, analyzing publications from 2000 to 2017, Yilmaz et al. (2017) categorized research purposes/subjects into five categories: teacher classroom management skills, teacher teaching methods, parent communication, student features, and school environment.

Although these literature reviews provide essential insights, few studies have focused on this topic in recent years. Yilmaz et al. (2017) study focused on literature from 20000 to 2017. For this reason, we focus on literature published after 2017, comparing the results with previous reviews, including those by Yilmaz et al. (2017) and Jansen et al. (2022). It is particularly important to evaluate recent literature to consider technological advancements, global events (such as COVID-19), and recent trends and theories. Previous reviews also lacked a comparative perspective between Eastern and Western aspects influencing learning motivation. The current study, therefore, aims to address this gap by reviewing a broader range of populations in recent years to evaluate the relationship between learning motivation and its influencing factors. The research questions examined by the study are as follows:

RQ1. Which factors have been most studied within learning motivation research in recent years (2017–2023)?

RQ2. Are there particular student motivation variables that are significant in specific countries?

The results of this literature review could provide a comprehensive overview to help develop evidence-based academic policies and practices in creating motivating learning environments.

2 Methodology

This study critically analyzed the literature using a systematic review method to identify and evaluate the research question in a structured manner. The review followed the PRISMA flow (Liberati et al., 2009; Moher et al., 2010), which consists of four significant steps: identification, screening, eligibility, and inclusion. It is an evidence-based set of items for reporting in systematic reviews, originally developed by the researcher to improve their report's clarity, transparency, and completeness. The following search syntax was used on the Web of Science search engine for this study: (predict* OR forecast*) AND ("academic motivation" or "learning motivation") AND (variable* OR factor* OR environment* OR influence* OR "indicator").

The eligibility criteria based on the Population, Intervention, Comparison, Outcome (PICO) framework (Richardson et al., 1995), and inclusion and exclusion criteria are listed in Table 1. The PICO framework was originally developed to improve the quality of clinical question formulation and literature search in evidence-based practice, then expanded to include the study design, recognizing the importance of specifying the type of studies relevant to the review. For the population, the study included studies with learners from various educational levels and demographics, such as elementary school and university students, with diverse characteristics, including age, gender, and socio-economic background. For intervention, enhanced learning motivation was considered, including different psychological values, social influences, and environmental influences that impact student motivation. For comparison, students of different groups were compared, such as students with high or low parental support in learning. Lastly, for the primary outcome, differences in learning motivation were measured.

A total of 570 results were identified at the initial search on the Web of Science search engine. Limited to articles in English and a publication date between 2017–2023, the results were narrowed to 335. The intention behind narrowing the date range was to focus on more recent studies that reflect current trends in learning motivation research. Non-English articles were excluded due to language constraints, although some of the excluded studies were written in other languages and may have contributed valuable insights into culturally diverse perspectives on learning motivation. Subsequent screening narrowed it down to 84 articles. Three hundred and five articles were assessed in full text to determine if they met the inclusion criteria, and 251 were excluded for reasons such as lacking relevant outcomes.

TABLE 1 The eligibility criteria and inclusion/exclusion criteria.

The eligibility criteria	
PICO	Details
Population/Problem	Students
Intervention	External factors such as teaching methods, family support, peer influence, technological resources, school environment, societal pressure, etc.
Comparison	Students with and without these factors
Outcome	Learning motivation
Inclusion and exclusion criteria	
Inclusion criteria	Description of criteria
Focus of study	Studies that influence students' motivation with external influences
Empirical evidence of prediction	Studies that contained empirical evidence of the learning motivation
Language of publication	Only articles written in English are considered.
Year of publication	Studies published between 2017 and 2023 (both years inclusive)
Publication venue	Studies published in peer-reviewed scientific venues (e.g., conference or journal) Only original papers were included in the review.
Availability	The full text is accessible for analysis.

3 Results

3.1 Data set characteristics

This study reviewed a total of 84 empirical studies on learning motivation published between 2017 and 2023. Of these, 80 were articles, three were proceedings papers, and one was a review article.

The temporal distribution of these publications suggests a consistent and steady growth in scholarly interest and research output on learning motivation from 2017 to 2023. In terms of disciplinary distribution, the studies were conducted in a diverse array of academic fields. Specifically, 34 were from education, 12 from multidisciplinary psychology, 11 from educational psychology, 10 from linguistics, six from environmental science, six from public environment and occupational health, four from educational scientific disciplines, four from language linguistics, and the rest from various disciplines. Each journal can be assigned to one or more (up to six) Web of Science Categories, with considerations such as subject matter and scope of the journal, author and editorial board affiliations, funding agencies providing grant support, etc.

Geographically, the research landscape was vast, with studies originating from multiple continents: Asia (31), Europe (30), North America (19), Oceania (4), South America (2), and the Middle East (3). Examine the countries or regions mentioned in author affiliations rather than focus on the countries or regions where the research studies were conducted. As such, some studies were classified as belonging to more than one country. However, there is a noticeable distribution of research on learning motivation across continents, with Asia, Europe, and America having a significantly higher number of studies. Some of the highest-publication countries were the USA (16), China (15), Spain (8), Germany (5), and Australia (4).

While most (83) of the reviewed studies were quantitative, one study used both quantitative and qualitative methods. Five of the studies were longitudinal. The diverse demographics of the participants provided comprehensive insights into the multifaceted nature of learning motivation across ages. Just over half (56%; 47) of the studies focused on university students or college students, 38% (32) focused on secondary or middle school, and 6% (5) focused on other learners.

While this review focused on overall learning motivation, certain studies focused on specific types of learning motivation, such as language learning motivation (20), STEM-related learning motivation (6), and autonomous motivation (2). The majority (56) of the studies focused on general learning motivation or academic motivation.

3.2 (RQ1) variables influencing learning motivation

Regarding our first research question, factors influencing learning motivation were methodically categorized into subthemes and subsequently grouped into broader themes. The analysis organized these elements into seven overarching themes and 16 specific subthemes, as shown in Table 2. Some articles contained multiple subthemes; thus, a total of 163 subthemes were evaluated from the 84 articles reviewed.

Psychological values comprising emotions, attitudes, self-perception, and goal orientation appeared most frequently. Variables related to social and environmental influences also assumed a significant role, emphasizing their substantial impact on learning motivation. Within this context, the pivotal role of teachers and family influence stood out as crucial contributors to learning motivation. Demographic factors such as age, socioeconomic status, gender, and cognitive factors related to abilities and perceived competence were also featured as influencing motivation.

3.3 (RQ2) Eastern countries and Western countries learning motivation studies

To answer our research question on particular student motivation variables that are significant to specific countries, an examination was conducted comparing countries from East and Southeast Asia, and Europe and Anglo-Saxon countries. The comparison was based on the countries or regions indicated in the authors' addresses rather than the locations where the studies were conducted. The analysis included 31 articles from Eastern countries

TABLE 2 Research themes and subthemes of variables relating to learning motivation.

Theme	F	Subtheme	F
Psychological values	54	Emotions and attitudes	22
		Self-perception and identity	24
		Goal orientation	8
Cognitive factors	20	Cognitive	6
		Competence	14
Social influences and environmental influences	48	Learning environments	8
		Teacher influence	11
		Family influence	12
		Peer influence	7
		Others social influences	10
Demographic factors	21	Age	8
		SES	3
		Gender	8
		Other	2
Academic background and study habits	9	Academic background and study habits	9
Interventions and programs	11	Interventions and programs	11

and 60 articles from Western countries. Eastern countries included China (15), South Korea (3), Taiwan (3), Japan (2), Singapore (2), Thailand (2), Indonesia (2), and the Philippines (1). Western countries included the United States (16), Spain (8), Germany (5), the United Kingdom (5), Australia (4), Italy (3), Turkey (3), Canada (3), the Netherlands (2), Belgium (2), Portugal (2), Ukraine (2), and one each from Albania, Austria, Finland, Hungary, Ireland, Lithuania, and Poland.

In Western countries, social and environmental influences (51.13%) were the most studied, followed by psychological values (15.79%), demographic factors (13.16%), and academic backgrounds and study habits (9.21%). In Eastern Asian countries, psychological values (37.25%) were studied more extensively than social and environmental influences (25.49%), followed by cognitive (19.61%) and demographic factors (7.84%).

4 Discussion

4.1 (RQ1) variables influencing learning motivation

According to Yilmaz et al. (2017), who reviewed the literature from 2000 to 2017, teacher classroom management skills and teaching methods were prominent variables in past research. However, psychological values such as self-perception/identity and emotions/attitudes have been researched more in the recent literature compared to teacher-related factors. One of the reasons for this shift could be due to stronger empathy for students' emotional and psychological impact on their learning. Another reason is the difference in the categorization process. Yilmaz et al. (2017) categorized it into four themes: teacher classroom management skills, teacher teaching methods, parent communication, student features, and school. Therefore, other themes that were not relevant to these were not focused. In addition, our investigation showed that while teacher influence has been surpassed in prominence by family influence, it remains a significant category within the broader domains of social and environmental influences. Considering publications from 2017 to 2023, our review notes a shift in the research focus to encompass a broader spectrum of influences, including family and peer dynamics. This shift acknowledges the intricate interplay between the numerous factors that collectively affect an individual's learning motivation. Thus, the current study adds to Yilmaz et al.'s (2017) study by providing data from an extended period of time, with a position of the social factors such as parents and teachers within the broader themes.

In their 2022 meta-analysis, Jansen et al. highlighted the comparable impact of student and instructional variables on the academic motivation of K-12 students. They found that students' perceptions of their competencies and achievements were paramount in driving their academic motivation, whereas background factors played a lesser role. Regarding instructional variables, the quality of teacher-student relationships and instructional practices emerged as more potent motivators than interventions or technology use. This study provides a comprehensive overview of the factors influencing learning motivation among a diverse age-range. More than half of the reviewed studies focused on university students. The results provided six themes, with 16 subthemes, encompassing psychological values, cognitive factors, social and environmental influences, demographic factors, academic background and study habits, and interventions and programs. Our study identified social and environmental influences, alongside psychological variables, as popular research areas. These findings offer valuable insights for stakeholders such as teachers and policymakers, enabling the development of targeted interventions and initiatives considering these multifaceted factors.

This study contributes to the scholarly landscape by presenting a holistic perspective on student motivation and incorporating a broader spectrum of influences. These contributions yield insights with potential implications for educational practices and interventions, particularly in diverse sociodemographic backgrounds. The revised categorization in our study underscores the intricate and interconnected nature of the elements influencing learning motivation, highlighting the interplay among psychological, social, cognitive, and demographic dimensions. Moreover, by extending the timeframe to include studies from 2017 to 2023, this study aimed to acknowledge the multifaceted nature of the influences affecting motivation. The broader scope of influences considered in this study provides valuable insights into the complex dynamics shaping

learning motivations. Additionally, it emphasizes the need to comprehend the diverse factors at play, offering a more comprehensive understanding of how interventions and academic experiences impact motivational dynamics, particularly within learning-motivation contexts.

4.2 (RQ2) comparison between Eastern and Western learning motivation variables

The literature review revealed intriguing cultural nuances in variables linked to learning motivation. As Klassen et al. (2013) mentioned, attitudes and motivations toward academic learning are shaped intricately by cultural influences. A comparative analysis between Eastern and Western countries revealed differences in the investigated factors. Psychological values were most observed in studies from Eastern countries, followed by social influences and environmental factors. In contrast, Western countries exhibited a different pattern, with social influences and the environment being the most prevalent, followed by psychological values. This comparative analysis illuminates the varying emphases in motivational research across different geographical regions.

This divergence in scholarly focus reflects geographical disparities and sheds light on the underlying cultural philosophies: the Western penchant for egalitarianism, and the Eastern veneration of communal and hierarchical societal structures. Eastern research has accentuated psychological values, suggesting a predilection toward understanding the inner workings of the student psyche. Western researchers, meanwhile, have given precedence to social and environmental aspects, hinting at a collective concern for external influences on learning. As a dynamic construct, culture encompasses shared thoughts, emotions, and actions within a group, thereby influencing psychological wellbeing, goal orientation, motivation, and study approaches (Gong and Fan, 2006; Hsin and Xie, 2014; Manikutty et al., 2007). These differences underline the importance of cultural sensitivity in examining the multifaceted concepts of learning motivation. The spectrum ranging from "individualist" to "collectivist," "independent" to "interdependent," or "Western" to "Eastern" transcends simple binaries, calling for a nuanced interpretation that acknowledges cultural fluidity. Moreover, examining cultures that do not fit neatly within conventional Western and Eastern paradigms is essential, thereby broadening our perspective to include diverse educational motivations from societies that may embody the unique syntheses of these traditions or represent entirely distinct cultural frameworks.

In conclusion, the synthesis of our findings not only advances our understanding of how demographic and socioeconomic contexts affect motivation, but also emphasizes the cultural tapestry essential to the pedagogical framework. It is imperative for educational research and practice to integrate cultural diversity, thereby enriching the learning environment and fostering a more globally conscious and adaptive educational system.

4.3 Limitations and future studies

Although this study uncovered valuable insights, it is essential to recognize its limitations and suggest directions for future research. First, the current study was limited in the scope of literature sources. The study primarily relied on the Web of Science to identify relevant studies. Including databases such as Google Scholar, Scopus, or domain-specific repositories could include the diversity of the literature. The restriction to English-language literature in this systematic review introduces a language bias that may exclude valuable studies from non-English-speaking countries, leading to a skewed perspective dominated by Western contexts and underrepresenting cultural, regional, or societal differences in learning motivation, which future research should address by incorporating studies published in other languages for a more global and diverse understanding. Expanding the literature from more sources could help to capture a broader range of studies and reduce language biases. Future studies should include a more continuous and diverse population to gain deeper insights into macro-factors such as culture and societal impacts on individual learning motivation. We also aim to provide more detailed statistical coefficients and markers for significant variables to better highlight the critical predictors of learning motivation. Additionally, embracing various research approaches can offer a more holistic understanding of this field. Recent studies have focused on various demographic groups, including those with low income. The investigations have delved into demographics such as low socioeconomic status (SES), first-generation university students, Latinos, and migrant workers, all of whom possess unique situational variables that significantly influence their learning motivation. It is vital to acknowledge the diversity within the population, as prior research has indicated differences in learning motivation due to background factors, including cultural impact.

Some studies have examined student motivation during significant life events, such as the COVID-19 pandemic, including research on remote learning and pandemic-induced anxiety's impact on academic motivation. Longitudinal studies have monitored how motivation fluctuates throughout enrollment in educational programs. These findings highlight the need for further exploration of these themes to better understand their influence on motivation. More in-depth investigation of diverse factors can lead to strategies and interventions to enhance student engagement, requiring an adaptable research framework to address the complexities of learning motivation across varied contexts.

Author contributions

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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