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Navigating learning agility: insights from research on K–12 teachers

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Highlights:

- TLA is a growing area of interest but currently lacks global representation.
- Theoretical fragmentation in TLA highlights its early stage and the need for unified models.
- TLA is associated with positive outcomes, including lifelong learning, job performance, and adaptability.
- TLA is a multi-layered competency that professional development, leadership, and positive school climate support.

Abstract

This study aimed to identify, synthesize, and critically analyze the existing scholarly sources on teachers' learning agility (TLA) within K–12 education. First, the characteristics of the eligible sources on TLA were descriptively explored. Then, the outcomes and implications of these studies were qualitatively analyzed. The findings highlighted that studies have been conducted since 2019, and the topic is a contemporary and emerging area of inquiry. All the eligible studies were conducted in the Asian context. The studies covered the academic fields of general education, educational technology, and lifelong learning, and this highlighted the interdisciplinary nature of the concept. Although learning agility was the central concept across all studies, there was no consensus on a shared theoretical framework. The outcomes of the publications associated learning agility with positive educational and professional outcomes, and the implications reinforced the importance of TLA as a crucial, context-sensitive, and multifaceted 21st-century competency. Finally, the study suggested the need for further research to contribute theoretical clarity, explore underrepresented contexts, and provide practical strategies for fostering TLA.

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1. Introduction

Since the beginning of the century, multiple changes and transformations have occurred in the field of education. The current education ecosystem is perhaps more dynamic than ever, with technological advancements, social and cultural changes, and evolving pedagogical approaches. This environment requires a paradigm shift in the role of the teacher (Gentile et al., 2023; Rodney, 2020). Teachers must transition from being a dispenser of knowledge to a facilitator of learning, continually adapting, taking initiative, and innovating (Mishra, 2024; Zhai, 2024). Therefore, teachers require more than simply the knowledge of the subject; they also need to be able to cope with uncertainty, accept change, and learn from their experiences. Due to this necessity, the concept of teachers' learning agility (TLA) has emerged as a significant focus in education, emphasizing the need for teachers to quickly adapt their skills and techniques to meet the evolving demands of their students.

Learning agility is a multifaceted concept that encompasses various interconnected abilities, actions, and ways of thinking. These skills can help people adjust, learn, and perform effectively in new and changing environments. Lombardo and Eichinger (2000) described it as "the willingness and ability to learn new skills in order to do well in new, difficult, or first-time situations." This description highlights two key foci: adopting a proactive attitude toward learning and effectively applying new information in novel or challenging situations. It is a deliberate shift away from behavioral skills toward adaptive skills, and it is the ability to think about not only what happened, but also why it happened (Mitchinson & Morris, 2012).

Lombardo and Eichinger (2000) were the first to divide learning agility into four distinct but related dimensions. These dimensions provide a comprehensive view of how agile individuals learn from experiences and apply what they have learned in new situations (De Meuse, 2017; De Meuse et al., 2011; Kaya, 2023). People agility, also known as human relations agility, involves being highly self-aware and capable of handling challenging interactions with others. People who demonstrate this actively seek feedback, are open to different viewpoints, and promote teamwork and trust among team members. The second dimension, mental agility, refers to the ability to think flexibly enough to manage complexity and uncertainty. Mentally agile teachers can think critically, connect diverse concepts, and view issues in innovative and creative ways. Change agility refers to a person's receptivity to change and their willingness to continue learning. It encompasses natural curiosity, a desire to try new things, and the ability to thrive in environments of change and transformation. The final dimension, results agility, involves performing well even in new or challenging settings. Teachers with results agility are recognized for motivating colleagues and achieving impactful results while focusing on educational goals. Researchers have described learning agility as a critical future core competency that involves quickly and flexibly assessing new conditions and adapting one's mindset to fit the learning context (Fayda-Kınık, 2024; Kaya, 2023; Mitchinson & Morris, 2012; Shin & Jun, 2019). Mitchinson and Morris (2012) characterized learning agility as a distinct way of thinking, accompanied by a specific set of behaviors. They identified five key "enablers" that an agile learner practices: innovation, questioning existing methods to find improved approaches; performing, staying composed and adaptable when faced with new problems; reflecting, intentionally analyzing experiences to gain insight and knowledge; risking – stepping into challenging environments to learn and grow; and, contrary to its name, defending – resisting the impulse to react defensively when encountering challenges.

As educational settings undergo constant transformation, there is an increasing demand for teachers to exhibit a heightened level of adaptability to new challenges and methodologies. In such a context, TLA emerges as a critical professional competence defined as the willingness and ability to learn from experience and successfully apply that learning, often rapidly, to new conditions (Kaya, 2023; Lombardo & Eichinger, 2000; Yazıcı & Özgenel, 2024). An agile-learner teacher has a growth mindset, which is a powerful predictor of lifelong learning tendencies, organizational commitment, readiness for change, and teacher performance (Kaya, 2023; Mahmutoğlu et al., 2024; Shin & Jun, 2019; Yazıcı & Özgenel, 2024). Such a teacher is therefore characterized not just by a single skill but by a combination of dynamic capabilities, which include mental agility to navigate cognitive complexity, people agility for effective collaboration, change agility to embrace pedagogical innovation, and results agility to maintain performance under pressure (Lombardo & Eichinger, 2000). Such teachers are described as open-minded and they develop their agility through life-long learning, questioning, and experiencing. These skills enable them to be flexible and resilient in the face of emerging problems (Yazıcı & Özgenel, 2024). Therefore, understanding and cultivating TLA is a critical strategy for enhancing the effectiveness of teaching and a driving force behind successful educational reform, which in turn contributes to favorable student learning outcomes (Lubis et al., 2025; Susanto et al., 2024; Yazıcı & Özgenel, 2024).

The majority of existing studies on learning agility have focused on the domains of human resource management and leadership (e.g., Eichinger & Lombardo, 2004; De Meuse, 2017). In the field of education, there has been a significant concentration of research aimed at understanding the dynamics of students transforming into agile learners, alongside investigations into the school administrators (e.g., Breakspear et al., 2017; Fernandes et al., 2023; Kim et al., 2018). This highlights the growing interest in agility within educational contexts and its implications for both student development and administrative practices. However, there is an absence of a consolidated knowledge base on TLA. With the current systematic review, it is deemed necessary to learn, understand, and comprehensively synthesize what kind of knowledge production is done in terms of TLA in the field. Therefore, it is possible to understand which core variables influence TLA, which methodologies have been commonly employed and most importantly, what are the consistently reported outcomes of high learning agility in teachers, and what interventions are proven to foster it.

2. Method

A systematic literature review locates and evaluates eligible studies in detail by addressing specific research questions. This process involves identifying all relevant primary studies associated with the review question, critically assessing these studies, and synthesizing their findings (Gough et al., 2017; Pollock & Berge, 2017; Xiao & Watson, 2019). Systematic reviews are thorough and methodical investigations that generally follow a set of clearly established phases. Although these phases differ based on the specific discipline and the types of studies involved, they typically adhere to a systematic sequence of steps. This study's systematic literature review followed the stages of planning, conducting, and reporting (Butarbutar et al., 2023; Williams Jr. et al., 2021). In the planning phase, the research questions were designed. During the phase of conducting the search, the approach was decided upon, including the databases to be used, the inclusion and exclusion criteria, and the assessment of articles based on quality criteria. Subsequently, in the reporting phase, the results, discussion, and conclusion were presented in detail.

2.1. Planning

The planning phase encompasses multiple steps. It began with the formulation of research objectives and questions, which were derived from a gap identified in the existing literature—namely, the limited understanding of TLA. Accordingly, the main aim of this study is to systematically identify, synthesize, and critically evaluate research related to TLA, guided by the following research questions (RQs):

RQ1: What are the key characteristics of studies focusing on TLA in K-12 education?

RQ1.1: How are these studies distributed across publication years?

RQ1.2: What is the geographical distribution of these studies?

RQ1.3: Which academic journals have published research on TLA?

RQ1.4: What are the main citation topics referenced in these studies?

RQ1.5: What is the research aim in these studies?

RQ1.6: What research variables have been explored in these studies?

RQ1.7: What research methodologies have been employed in these studies?

RQ1.8: What sampling strategies and sample characteristics (e.g., sample size, groups of participants, school level) have been reported in these studies?

RQ2: What are the outcomes and implications of the studies on TLA in K-12 education?

The research questions acted as a framework for deciding keywords. The review utilized the Web of Science (WoS) and Scopus databases because they are two of the main bibliometric databases, with a comprehensive emphasis (Karasözen et al., 2011; Kumpulainen & Seppänen, 2022). The Boolean method was consistently employed across both WoS and Scopus databases to arrange the keywords and reach the most efficient search string, which was:

(("teacher*" OR "educator*" OR "schoolteacher*" OR "teaching staff*" OR "tutor*" OR "professor*") AND ("learning agility" OR "agile learning"))

2.2. Conducting

Databases were checked in July 2025 using the PRISMA framework. The PRISMA framework and statement offer important recommendations for systematic reviews to be transparent, evidence-based, and complete, and to be reported accordingly (Sarkis-Onofre et al., 2021; Tricco et al., 2018). The PRISMA chart guiding the study is presented in Figure 1. Publications included in the WoS and Scopus databases, without any year restriction, were screened and underwent an eligibility check. All publications were checked according to the inclusion and exclusion criteria shown in Table 1.

Table 1. Inclusion and exclusion criteria for publications

Inclusion Criteria	Exclusion Criteria
Inc-1 WoS Category: Education Educational Research + Education Scientific Disciplines / Scopus Subject Area: Social Sciences	Exc-1 Not WoS Category: Education Educational Research + Education Scientific Disciplines / Not Scopus Subject Area: Social Sciences
Inc-2 Document type: Research Article	Exc-2 The publications, such as book chapters, book series, reviews, editorials, and conference papers are excluded
Inc-3 Full text is available	Exc-3 Full text is not available
Inc-4 In English and/or Turkish language	Exc-4 Not in English or Turkish language
Inc-5 Situated in the scope of TLA	Exc-5 Out of scope (not related to TLA)

The conducting process began with the identification phase, following the PRISMA flowchart. A total of 87 publications were collected from the WoS database (n = 39) and the Scopus database (n = 48) in Excel format and then combined into a single sheet. Duplicate studies were removed (n = 9), and all studies not categorized under the Education, Educational Research, and Education Scientific Disciplines in WoS, as well as those outside the Social Sciences area in Scopus, were eliminated (n = 37). Screening was then conducted using other eligibility criteria (Exc-2, Exc-4, and Exc-3), resulting in a final selection of 17 studies. After the eligibility check, the final stage of screening, Exc-5 criterion, was applied, and 12 studies were eliminated because they did not fall within the scope of K-12 TLA.

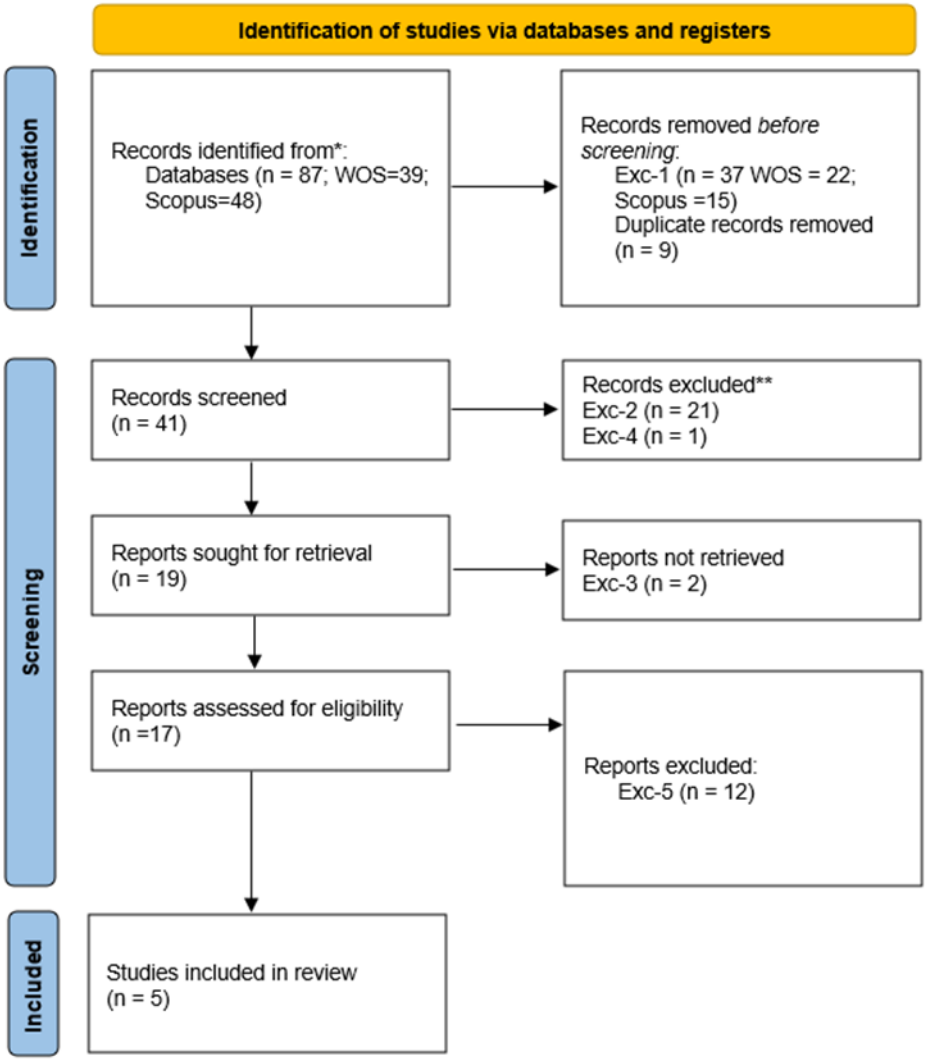

Figure 1. PRISMA flow chart. Adapted from PRISMA flow chart © 2020 http://www.prisma-statement.org/.

To ensure the methodological rigor of the included studies, a quality assessment was crucial (Kmet et al., 2004). Accordingly, the following criteria were applied to conduct the quality assessment: (1) clear

research objectives, (2) a research design appropriate to the objectives, (3) documentation of validity and/or reliability measures, (4) a clear and coherent presentation of results, and (5) a well-articulated contribution to the field. Table 2 illustrates the five criteria and the scores assigned to each publication:

Table 2. Quality appraisal of the publications

Publications	Clarity of Research Objectives	Suitability of Research Design	Evidence of Validity and Reliability	Clarity and Coherence of Results	Contribution to the Field	Proportion (0-1.00)
Kamilah et al. (2025)	2	2	2	2	2	1
Lee & Jun (2023)	2	2	2	2	2	1
Lubis et al. (2025)	2	2	2	1	2	0.9
Shin & Jun (2019)	2	2	2	2	2	1
Susanto et al. (2024)	1	2	1	2	2	0.8

Note. 0=No, 1=Partial, 2=Yes

As Table 2 shows, each publication was assessed against five quality criteria. Each criterion was scored on a three-point scale (0 = No, 1 = Partial, 2 = Yes). The scores across the five criteria were summed for each study, and the cumulative scores were then proportioned to a 0–1.00 scale. A minimum threshold of 0.70 was established as the cut-off for quality appraisal (Kmet et al., 2004). Overall, the results confirmed that all studies were of sufficient quality for inclusion in the review.

2.3. Analysis

Eligible publications obtained after the identification, screening, and quality control processes were analyzed descriptively to reveal their key characteristics. In this analysis, publication years, geographical distribution, citation topics, academic journals, research aim, research variables, research methodologies, sampling strategies, sample characteristics, and reported outcomes of the studies were analyzed, respectively, in line with the RQs.

3. Results

In the Results section, the research questions (RQs) are addressed in order. First, RQ1, which aimed to detail the key characteristics of TLA studies in K-12 education, is presented. Then, RQ2, which aimed to reveal the outcomes of the TLA studies in K-12 education, is presented.

3.1. Key characteristics of TLA studies in K-12 education

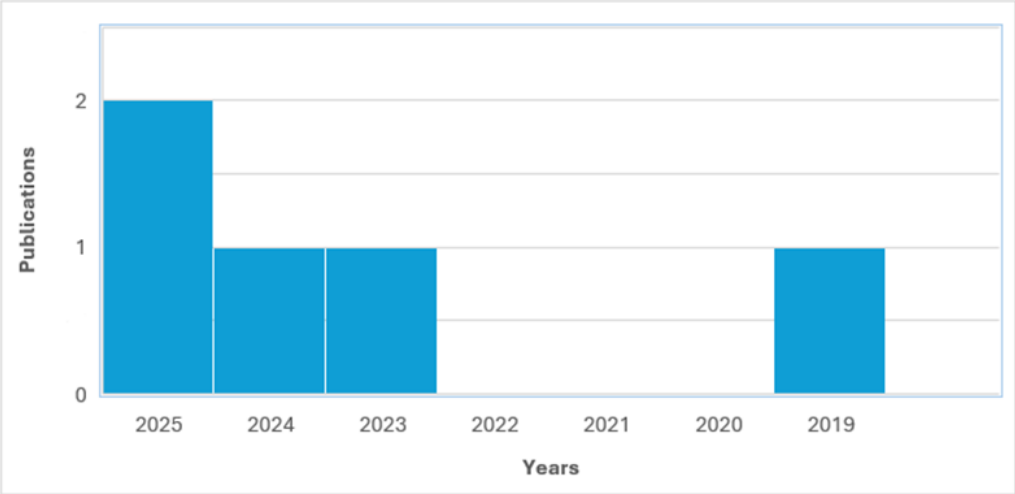

Figure 2. The distribution of eligible studies across publication years

According to Figure 2, the majority of studies were published in 2025 (n = 2), while one study was published in each of the years 2019, 2023, and 2024. Besides, no eligible studies were identified between 2020 and 2022. The country distribution of these eligible studies (RQ1.2) was then examined, and it is shown in Table 3:

Table 3. Country distribution of TLA studies

Publications	Country	No. of publications per country	Continent
Kamilah et al. (2025)	Malaysia	1	Asia
Lee & Jun (2023)	South Korea	2	Asia
Lubis et al. (2025)	Indonesia	2	Asia
Shin & Jun (2019)	South Korea	2	Asia
Susanto et al. (2024)	Indonesia	2	Asia

As shown in Table 3, all studies were conducted in Asian countries, with South Korea and Indonesia each contributing two publications. This indicates an interest in the topic within East and Southeast Asia. To provide an overview of peer-reviewed journals that have featured studies on TLA (RQ1.3), the key details of the journals are depicted in Table 4:

Table 4. Academic journals publishing TLA studies

Publications	Journal Title	Discipline of Journal	Publisher
Kamilah et al. (2025)	Bulletin of the Technical Committee on Learning Technology	Learning Technology	IEEE Technical Committee on Learning Technology
Lee & Jun (2023)	International Journal of Educational Methodology (IJEM)	Education	Eurasian Society of Educational Research
Lubis et al. (2025)	APTISI Transactions on Technopreneurship (ATT)	Technopreneurship (technology-based entrepreneurship)	Pandawan Sejahtera Indonesia
Shin & Jun (2019)	International Electronic Journal of Elementary Education	Elementary education	Kura Publishing House
Susanto et al. (2024)	Journal of Education and Learning (EduLearn)	Education	Intellectual Pustaka Media Utama (IPMU) in collaboration with the Institute of Advanced Engineering and Science (IAES)

Table 4 presents the academic journals indexed in WoS or Scopus that have published TLA studies. Accordingly, the journals span diverse disciplines including learning technology, education, technopreneurship, and elementary education, reflecting the interdisciplinary nature of research on TLA. Following the analysis of journal sources, the citation topics (RQ1.4) of the publications on TLA were analyzed. This synthesis provides a clear understanding of the theoretical foundations and conceptual frameworks that underpin each study. Table 5 presents the relevant findings:

Table 5. Citation topics referenced in TLA studies

Publications	Main Citation Topics Referenced	Key References
Kamilah et al. (2025).	- Learning Agility (general and digital) - Digital Learning Agility (DLA) - Data-driven decision-making	Hoff & Burke (2017); Khambari et al. (2022); Kovanovic et al. (2021)
Lee & Jun (2023)	- Learning Agility as predictor of job behavior - Organizational Citizenship Behavior (OCB) - Teacher's Self Efficacy -Transformational Leadership	Lombardo & Eichinger (2000); Organ (1988); Holzberger et al. (2013); Burns (1978)
Lubis et al. (2025).	- Learning Agility - Organizational Citizenship Behavior (OCB) - Synergy and Work Commitment - IB Curriculum and Pedagogical Innovation	Kumar et al. (2023); Grego-Planer, (2019); Kondratiev et al. (2022); Maire & Windle (2022)

Shin & Jun (2019).	- Lifelong Learning Competence - Learning Agility - Positive Psychological Capital - Knowledge Sharing - Learning Organization Culture - Instructional Management	Delors et al. (1996); Im et al. (2017); Luthans et al. (2007); Bock et al. (2005); Watkins & Marsick (2003); Hallinger & Murphy (1985)
Susanto et al. (2024).	- Learning Agility (core concept and 4 dimensions) - Islamic education transformation	De Meuse (2017, 2022; Kim et al. (2018); Sabic-El-Rayess (2020)

According to Table 5, the research by Kamilah et al. (2025) focuses on learning agility and its digital dimension, and its application in data-driven decision-making. This study was built upon the foundational work of scholars such as Hoff and Burke (2017), Khambari et al. (2022), and Kovanovic et al. (2021). Lee and Jun (2023) investigated Learning Agility as a predictor of various job-related behaviors. Their research explored the interplay between Learning Agility and concepts like Organizational Citizenship Behavior (OCB), Teachers' Self-Efficacy, and Transformational Leadership. The key references for this study are works by Lombardo and Eichinger (2000), Organ (1988), Holzberger et al. (2013), and Burns (1978). The work of Lubis et al. (2025) also examined Learning Agility and OCB, and extended the scope to include Synergy and Work Commitment, as well as IB Curriculum and Pedagogical Innovation. This research was informed by recent literature from Kumar et al. (2023), Grego-Planer (2019), Kondratiev et al. (2022), and Maire and Windle (2022). Shin and Jun (2019) situated Learning Agility within the broader context of Lifelong Learning Competence. Their study integrated Positive Psychological Capital, Knowledge Sharing, Learning Organization Culture, and Instructional Management. The theoretical framework for this research drew on a wide range of influential authors, such as Delors et al. (1996), Im et al. (2017), Luthans et al. (2007), Bock et al. (2005), Watkins and Marsick (2003), and Hallinger and Murphy (1985). Finally, Susanto et al. (2024) focused on the core concept and four dimensions of Learning Agility, and its role in Islamic education transformation. Their research was grounded in the work of De Meuse (2017, 2022), Kim et al. (2018), and Sabic-El-Rayess (2020).

Having established the core concepts and theoretical foundations cited in these eligible studies, the current analysis outlines the research aims (RQ1.5) and key research variables (RQ1.6) investigated. Table 6 presents the research aims and variables of eligible studies:

Table 6. Research aims and key variables in TLA studies

Publications	Research Aim	Key Research Variables
Kamilah et al. (2025)	To explore how information gathering enhances teachers' digital learning agility in Malaysian schools	Digital Learning Agility, Information Gathering Behavior
Lee & Jun (2023)	To identify job behavior types of Gen Z elementary teachers and examine predictors influencing those types	Learning Agility, Teacher Efficacy, Organizational Commitment, Transformational Leadership, Job Behavior Type
Lubis et al. (2025)	To examine how the IB curriculum enhances educator performance via learning agility and other behavioral factors	Learning Agility, Synergy, Organizational Citizenship Behavior, Teacher Work Commitment, IB curriculum
Shin & Jun (2019)	To analyze the hierarchical effects of individual and organizational factors on teachers' lifelong learning competence	Lifelong Learning Competence, Individual Level Variables, Organizational Variables, Socio-psychological Variables
Susanto et al. (2024)	To analyze the role of TLA in supporting Islamic education success in Indonesia	Learning Agility (People, Change, Mental, Results Agility), Descriptive Variables (e.g., Gender, School Level)

According to Table 6, the research aims range from exploratory studies, such as Kamilah et al.'s (2025) investigation into how information gathering enhances digital learning agility, to more analytical and predictive research. For instance, Lee and Jun (2023) aimed to identify distinct job behavior typologies among Gen Z teachers and their predictors, while Lubis et al. (2025) examined the mediating role of learning agility in the context of the IB curriculum's effect on educator performance. Furthermore, the aims

encompass multi-level analyses, as seen in Shin and Jun's (2019) study on hierarchical factors affecting lifelong learning competence, and contextual applications, such as Susanto et al.'s (2024) analysis of the role of learning agility in the success of Islamic education.

According to the key research variables column, learning agility serves as the central, unifying variable across all five studies. The other variables comprise a wide array of individual, socio-psychological, and organizational factors. These include individual attributes like teacher efficacy and positive psychological capital (Lee & Jun, 2023; Shin & Jun, 2019); organizational and behavioral dynamics such as Organizational Commitment, transformational leadership, and organizational citizenship behavior (Lee & Jun, 2023; Lubis et al., 2025); and broader professional constructs like lifelong learning competence (Shin & Jun, 2019). Table 7 offers a comprehensive overview of the methodologies, sampling strategies, participants' characteristics, and the school level (RQ1.7 and RQ1.8) reported in the reviewed publications on TLA.

Table 7. Research methodologies and sampling characteristics in TLA studies

Publications	Methodology, method(s)	Sampling Strategy	Groups and Size of Participants	School Level
Kamilah et al. (2025)	Qualitative case study, Semi-structured interviews, Observation, Photographs, Thematic analysis	Purposive sampling	Teachers (*n=10*), school administrators (*n=5*), parents (*n=20*)	Primary and secondary school
Lee & Jun (2023)	Quantitative survey design, Latent profile analysis, Multinomial logistic regression analysis	Purposive sampling	Teachers (*n=375*)	Primary school
Lubis et al. (2025)	Quantitative survey design, Structural Equation Modelling	Purposive sampling	Teachers (*n=210*), school principals (*n=3*), vice principals (*n=11*), administrative staff (*n=23*)	Primary, secondary and high school
Shin & Jun (2019)	Quantitative survey design, Hierarchical linear modeling	Multi-stage stratified sampling and random sampling	Teachers (*n=1077*)	Primary school
Susanto et al. (2024)	Quantitative survey design, Descriptive analysis (e.g., T-test, ANOVA)	Random sampling	Teachers (*n=433*) and lecturers (*n=138*)	Primary, secondary, and high school; university

According to Table 7, the publications on TLA used a variety of research approaches and methodologies. For instance, Kamilah et al. (2025) employed a qualitative case study design, incorporating semi-structured interviews, observations, photographs, and thematic analysis. In contrast, Lee and Jun (2023) and Lubis et al. (2025) used a quantitative survey design. Lee and Jun used latent profile and multinomial logistic regression analysis, and Lubis et al. applied structural equation modelling. Shin and Jun (2019) and Susanto et al. (2024) similarly conducted quantitative survey designs—Shin and Jun (2019) applied hierarchical linear modeling, and Susanto et al. (2024) used descriptive analysis. Regarding sampling strategies, purposive sampling was a common approach. It was used by Kamilah et al. (2025), Lee and Jun (2023), and Lubis et al. (2025). Other strategies included the multi-stage stratified and random sampling used by Shin and Jun (2019) and the random sampling employed by Susanto et al. (2024). The study participants were mostly teachers. The sample sizes were from 35 in the study by Kamilah et al. (2025) to 1077 in the study by Shin and Jun (2019). Three studies included other educational stakeholders such as school administrators, parents, principals, vice principals, administrative staff, and university lecturers. The publications were carried out at different school levels. The studies by Lee and Jun (2023) and Shin and Jun (2019) focused on primary schools. Other studies had a broader scope. The eligible studies focused on other school levels, including primary and secondary schools (Kamilah et al., 2025), primary, secondary,

and high schools (Lubis et al., 2025), as well as a combination of primary, secondary, high school, and university levels (Susanto et al., 2024).

3.2. Outcomes and implications of TLA studies in K-12 education

To investigate RQ2, the eligible studies were qualitatively synthesized and categorized under themes of outcomes and implications. Table 8 exhibits the summary of the outcomes and implications of the related publications:

Table 8. Key outcomes and implications of TLA studies

Publications	Key Outcomes	Implications for Practice and Policy
Kamilah et al. (2025)	The effective use of gathered data empowered educators to make informed decisions, which is essential for improving student engagement and learning outcomes.	The study highlighted the necessity for educational institutions to prioritize the development of digital learning agility (DLA).
Lee & Jun (2023)	The active job behaviors of Generation Z elementary school teachers were influenced by teacher self-efficacy, learning agility, organizational commitment, and principals' transformational leadership.	To improve Gen Z teachers' job behaviors, schools should enhance their self-efficacy, foster learning agility, and promote transformational leadership, while providing targeted interventions for less engaged teachers.
Lubis et al. (2025)	Learning agility and synergy strongly enhanced IB curriculum effectiveness and work commitment, and the IB curriculum effectiveness mediated this impact.	To optimize IB programs, schools should prioritize fostering learning agility and synergy. Systemic improvements like training and resource allocation are crucial for effective curriculum implementation.
Shin & Jun (2019)	Individual-level variables had a more significant positive impact on teachers' lifelong learning competence than organizational-level variables.	To enhance teachers' lifelong learning competence, it is necessary to improve individual socio-psychological factors and create school climates that promote active knowledge sharing.
Susanto et al. (2024)	High learning agility in Indonesian educators, especially lecturers and women, correlated with successful work performance and adaptability.	To improve educational quality, educational institutions must actively foster TLA. This enhances creativity and student outcomes and can prepare a resilient generation that adapt to modern educational changes.

As Table 8 shows, Kamilah et al. (2025) discovered that teachers could make better judgments when they use the data they gather well. This is essential for enhancing student engagement and improving educational outcomes. The study also highlighted that utilizing data fosters a culture of data-driven decision-making. Additionally, the school administrative body's support and parents' collaboration were considered important variables that strengthened the process of obtaining information. The implications of this study emphasize the need for educational institutions to prioritize the development of data literacy and DLA. Teachers could proactively seek information from diverse sources and equip themselves with the necessary skills to use data effectively.

Lee and Jun (2023) classified the active job behaviors of 375 Generation Z elementary school teachers. As a result, they found that teacher efficacy, learning agility, organizational commitment, and the principal's transformational leadership significantly influence the type of active job behavior a teacher exhibits. They indicated that higher administrative work efficacy, a strong pursuit of reflection—a sub-variable of learning agility—and high emotional commitment to the school were significant predictors for being in the "ideal job performance type" group. The study's implications include recommendations to enhance teachers' self-efficacy, foster a culture of learning agility, and promote transformational leadership among school principals.

According to Lubis et al. (2025), learning agility was a major factor and had a strong and positive influence on both IB curriculum and work commitment. Organizational citizenship behavior was found to enhance work commitment directly, but it did not have a significant direct impact on the effectiveness of the IB curriculum. Learning agility and synergy both indirectly influenced work commitment. The

effectiveness of the IB curriculum partially mediated the relationship between learning agility and work commitment and the effect of synergy on work commitment. Ultimately, the study emphasized the importance of prioritizing learning agility and synergy to foster a collaborative and adaptive educational environment. The limited direct effect of organizational citizenship behavior on curriculum effectiveness indicated the necessity of systemic improvements, such as enhanced training programs and resource allocation.

Shin and Jun (2019) found the hierarchical effects of individual and organizational variables on teachers' lifelong learning competence. They concluded that individual-level variables had a more significant positive impact on teachers' lifelong learning competence than organizational-level variables. These influential individual factors were learning agility, learning motivation, positive psychological capital, lifelong learning experience, and gender. Additionally, the study indicated that the influence of socio-psychological variables - learning agility, motivation, positive psychological capital- was greater than that of demographic variables. At the organizational level, only "knowledge sharing" had a statistically significant positive effect on teachers' lifelong learning competence. Principals' educational leadership and learning organization culture did not have a direct, considerable effect. The study suggested a focus on improving individual socio-psychological factors and creating school climates that promote active knowledge sharing to enhance teachers' lifelong learning competence.

Susanto et al. (2024) concluded that learning agility is a key determinant of success for educators. More specifically, the research demonstrated that outstanding educators in Indonesia possessed a high degree of learning agility, and over half of the respondents actively applied learning agility to respond to current educational developments. Lecturers, particularly at the postgraduate level, demonstrated the highest levels of learning agility, and female educators showed a higher dominance in all variables of learning agility compared to their male counterparts. The study concluded that TLA had a positive influence on the quality of Islamic education in Indonesia. Fostering TLA for creating a generation of students who are resilient, agile, and adaptive was the main implication of the study.

4. Discussion

The current study aimed to systematically identify, synthesize, and critically evaluate research related to TLA. In this context, several RQs were addressed to analyze and synthesize first the key characteristics of the eligible studies and next, the outcomes and implications of these studies. In this section, all the findings were further discussed and synthesized to highlight their significance and practical implications.

Regarding the publication timeline of the relevant studies, the research on TLA is a contemporary field of inquiry. All eligible studies were published between 2019 and 2025. This indicates a notable concentration of scholarly output in recent and forthcoming years, suggesting a growing academic interest in the topic. The geographical distribution of these studies demonstrates a regional focus. All five studies were conducted in Asian countries, specifically in East and Southeast Asia. South Korea and Indonesia are the most represented countries with two publications each, followed by Malaysia with one. This situation shows that TLA is a current and prominent issue in the Asian educational context. Still, it also indicates that this issue has not received the same level of interest in other continents. According to the overview of the publication outlets, studies on TLA appear in a diverse range of peer-reviewed journals. The research is not limited to a single academic discipline; instead, it spans fields such as learning technology, general education, and elementary education. This variety suggests that TLA is an interdisciplinary topic, attracting the interest of scholars from technology, pedagogy, and educational innovation.

Analysis of the main citation topics and key references revealed the extensive and multifaceted theoretical foundations of studies concerning TLA. Although "Learning Agility" is the central concept in all five studies, its conceptual framing varies based on the eligible research contexts: as a predictor of job behaviors (Lee & Jun, 2023), a component of lifelong learning competence (Shin & Jun, 2019), a mediator of curriculum effectiveness (Lubis et al., 2025), and a catalyst for digital transformation (Kamilah et al., 2025). The varied foundational literature further explains the conceptual diversity; there is not a single, universally cited work in all five studies. Instead, authors built on the work of seminal authors, such as Lombardo and Eichinger (2000) and De Meuse (2017). This theoretical and conceptual variety provides significant implications for the field. First, research on TLA is still in its early stages and has not yet come together around a widely recognized model. This approach from other fields adds to the idea by drawing on concepts from leadership, technology, and pedagogy. However, it also makes it harder to create a unified body of knowledge with standard definitions and ways to measure things, as Smith and Watkins (2024) indicated in their research on measuring learning agility. Second, this difference also highlights the importance of combining and synthesizing research on TLA. The lack of a shared theoretical foundation

makes it even more crucial for thorough evaluations, such as the current study, to map the landscape and establish common ground.

A synthesis of the research aims, variables, and methodologies revealed a thematically similar but methodologically heterogeneous field. Thematically, the studies were underpinned by the concept of learning agility as a foundational principle. However, its application varied from being an outcome of information gathering (Kamilah et al., 2025) to a predictor of job behaviors (Lee & Jun, 2023) and a mediator of curriculum effectiveness (Lubis et al., 2025). This result also contributes to the concept's versatility. The concept was consistently linked with a wide array of personal attributes, such as teacher efficacy, organizational dynamics, and professional outcomes, including lifelong learning competence. The distribution of research across school levels within the K–12 spectrum revealed an emphasis on primary and secondary education, whereas early childhood education appears to be underrepresented. This indicates a potential research gap in understanding how learning agility is conceptualized and practiced among early childhood teachers.

The outcomes of the five studies revealed that TLA was a significant predictor of many positive professional and organizational outcomes. Specifically, higher learning agility was directly linked to enhanced lifelong learning competence (Shin & Jun, 2019), superior job performance and commitment (Lee & Jun, 2023; Lubis et al., 2025), and effectiveness in navigating curriculum and educational change (Lubis et al., 2025). Furthermore, it was identified as a key determinant of overall success in diverse educational contexts, whether in digital transformations or specific cultural settings (Kamilah et al., 2025; Susanto et al., 2024). This result also showed that learning agility is not a single, uniform concept. It consists of different personal and social-psychological factors, such as reflection and positive psychological capital (Shin & Jun, 2019). Therefore, it deems important for educational institutions to actively cultivate TLA through fostering individual socio-psychological factors (Shin & Jun, 2019), implementing systemic improvements like enhanced training in data literacy (Kamilah et al., 2025; Lubis et al., 2025), and creating supportive school climates characterized by knowledge sharing and transformational leadership (Lee & Jun, 2023; Shin & Jun, 2019).

Collectively, the implications of these five studies suggested that learning agility is a fundamental, context-sensitive, and multi-layered 21st-century skill as emphasized in different studies (e.g., Kaya, 2023; Milani et al., 2021; Yazıcı & Özgenel, 2024). These are the characteristics that are frequently called for in TLA in educational institutions. Educational institutions, administrations, and policymakers should not only acknowledge the importance but also actively develop it through professional development. They should provide targeted professional development, structural support, and an adaptable school environment (Milani et al., 2021; Tripathi et al., 2020). Finally, these overall implications are significant for this systematic study, as they demonstrate the need for this research. Additionally, putting together all the studies on TLA is not just an intellectual exercise, but an important step toward revealing a crucial approach in teachers' professional development and lifelong learning.,

5.1. Limitations and further considerations

The findings of the study should be evaluated in light of its limitations. The current research is a systematic review that only searched for publications indexed in the WoS and Scopus databases. From these publications, eligible publications were identified by applying specific inclusion and exclusion criteria. In this respect, although the study presents the outcomes and implications of all empirical publications about TLA, without any year restrictions, these results do not claim to reveal all effective practices that work well in the field. Second, all the eligible studies included in the analysis were conducted exclusively in the Asian context. As a result, the outcomes and implications of the review are constrained by geographic and cultural factors. Third, while the review focused on K–12 education, no studies addressing the preschool level were identified. This situation thereby limits the scope of the analysis and the applicability of the outcomes and implications across K-12 education.

Therefore, after these limitations listed above, the primary recommendation for future research and reviews to address the gaps in the literature is that studies on TLA should be conducted on other continents and at the preschool level. Additionally, the apparent predominance of quantitative survey research within the eligible publications suggests that the field is currently focused on broad and generalizable relationships between TLA and other key variables. While valuable, this implies a critical need for more qualitative and mixed-methods studies to provide richer and more contextualized narratives that can explain the "how" and "why" behind them. Moreover, it is crucial to include studies written in various languages and to analyze other databases in future reviews. This approach will lead to more comprehensive and generalizable outcomes.

5. Conclusion

This study systematically identified, explored, and synthesized the scholarly publications on TLA in the K–12 education context. The findings indicated a growing interest and conceptual variety in the topic. Accordingly, TLA is not a singular concept, but a multifaceted and context-sensitive competency. It is closely associated with outcomes like lifelong learning competency, job performance, and adaptability to educational change. The study also identified gaps in academic literature regarding geographical distribution and educational level. Moreover, there is a lack of a shared theoretical framework and a measurement approach.

The outcomes of the eligible studies reflected a common understanding of learning agility as a critical competency for educators who are facing the demands of rapidly evolving education. Additionally, the current review emphasized the importance of cultivating learning agility in teachers through professional development, supportive leadership, and data-informed practices. Learning agility, as a foundational 21st-century skill, requires further exploration and integration into teacher education and policy frameworks.

Statement of Researcher
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The author solely conducted all stages of the research, including the conceptualization, design, data collection, analysis, and manuscript preparation.
Conflict statement:
The author declares that she has no conflict of interest.
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