

MAPPING A DECADE OF RESEARCH ON REFLECTIVE JOURNALS: IMPLICATIONS FOR MOTIVATION AND SELF-REGULATED LEARNING IN ELEMENTARY EDUCATION

¹Suti, ²Edi Kurniawan, ³Bambang Subali, ⁴Nuni Widiarti

^{1,2,3,4} Universitas Negeri Semarang, Jawa Tengah, Indonesia

suti09@students.unnes.ac.id, edikurniawan@mail.unnes.ac.id, bambangfisika@mail.unnes.ac.id,

nuni_kimia@mail.unnes.ac.id

ABSTRACT

This study aims to map and critically analyse research trends on reflective journals and their implications for learning motivation and self-regulated learning (SRL) in elementary education from 2015 to 2025. A hybrid approach combining systematic literature review and bibliometric analysis was employed, following PRISMA 2020 guidelines. Data were collected from Scopus, Web of Science, ERIC, and ScienceDirect, yielding 25 eligible empirical studies following a rigorous screening process. The findings reveal a significant increase in research on reflective journaling, with a shift from descriptive approaches toward process-oriented and experimental designs. Reflective journals demonstrate a strong and consistent impact on learning awareness, a moderate effect on SRL, and a variable influence on learning motivation. The results indicate that reflection serves as a metacognitive mechanism that indirectly influences motivation through self-regulatory processes. Additionally, instructional factors such as teacher feedback, structured prompts, and students' literacy levels play a crucial role in determining effectiveness. This study proposes a conditional model of reflective learning, emphasising that the impact of reflective journals depends on contextual and pedagogical conditions. The findings help clarify conceptual relationships among reflection, SRL, and motivation and provide implications for instructional design and future research in elementary education.

Keywords: Reflective journals; self-regulated, learning motivation; metacognition; elementary education

INTRODUCTION

In recent decades, educational paradigms have shifted toward learner-centred approaches that emphasise metacognition, self-awareness, and active engagement in learning processes. Within this transformation, reflective practices—particularly reflective journals—have gained increasing attention as pedagogical tools that foster deeper learning and student agency. Reflective journaling allows learners to articulate their experiences, evaluate their learning strategies, and regulate their cognitive and emotional processes, which are central components of self-regulated learning (SRL) (Panadero, 2017). In elementary education, where foundational learning habits are established, such practices are considered crucial for developing lifelong learning competencies.

Self-regulated learning has emerged as one of the most influential constructs in contemporary educational research, encompassing learners' ability to plan, monitor, and evaluate their own learning (Schunk & Greene, 2018). Studies indicate that SRL is strongly

associated with academic motivation, metacognitive awareness, and learning outcomes (de Ruig et al., 2023). At the same time, motivation—particularly intrinsic motivation—plays a pivotal role in sustaining students' engagement and persistence in learning tasks (Schunk, 2016). Reflective journals are theoretically positioned at the intersection of these constructs, as they facilitate students' reflection on goals, strategies, and outcomes, thereby enhancing both motivation and self-regulation (Nguyen et al., 2017).

The integration of reflective journaling into classroom practice has been supported by a growing body of research, particularly in higher education contexts. For example, Baeten et al. (2017) found that reflective writing activities significantly enhance students' metacognitive skills and learning awareness. Similarly, Hwang et al. (2018) demonstrated that technology-supported reflective learning environments can improve students' engagement and motivation. Despite these promising findings, the application and impact of reflective journals in elementary education remain underexplored. Primary school students differ significantly from older learners in cognitive development, literacy skills, and metacognitive capacity, raising important questions about the effectiveness and implementation of reflective practices at this level.

Recent research trends suggest increasing interest in integrating reflective practices with digital tools and innovative pedagogies. For instance, Lin et al. (2019) highlighted that guided reflection activities can enhance elementary students' metacognitive awareness and motivation to learn when appropriately scaffolded. Furthermore, Stoeger et al. (2021) emphasised the importance of structured teacher support in fostering SRL among younger learners. These findings underscore that the success of reflective journaling depends not only on the activity itself but also on instructional design and teacher facilitation. Nevertheless, empirical evidence remains fragmented, with variations in research design, measurement instruments, and contextual factors leading to inconsistent conclusions across studies.

Despite the growing body of literature, several critical issues remain unresolved. First, there is a lack of a comprehensive synthesis that maps research trends in reflective journals in elementary education over an extended period. Existing studies tend to focus on isolated interventions or specific variables, without examining broader patterns and developments. Second, methodological inconsistencies are evident, particularly in terms of research design, sample size, and measurement tools. Many studies rely on small-scale qualitative approaches or short-term interventions, limiting the generalizability of their findings (Karlen, 2016). Third, the conceptualisation of "learning awareness" is often conflated with self-regulated learning, leading to ambiguity in the interpretation of research outcomes. This conceptual overlap necessitates a more rigorous analysis to clarify the relationships among reflection, motivation, and SRL.

The urgency of this research is further underscored by contemporary educational challenges, including the need to develop independent, reflective, and motivated learners amid rapidly changing knowledge landscapes. In elementary education, fostering these competencies is particularly critical, as early learning experiences significantly influence students' long-term academic trajectories. Moreover, the increasing emphasis on student agency and personalised learning in global education policies highlights the importance of reflective practices as tools for empowering learners (Guo et al., 2021). Without a clear understanding of how reflective journals contribute to these outcomes, educators may struggle to implement them effectively.

Several previous studies have examined the role of reflection in learning, yet they exhibit notable limitations. First, Nguyen et al. (2017) investigated the impact of student reflection on learning effectiveness in digital environments and found positive effects on engagement and performance. However, the study primarily focused on students in higher education, limiting its applicability to younger learners. Second, Hwang et al. (2018) explored the use of technology-assisted reflective learning and reported improvements in students' motivation and interaction. While the study provides valuable insights into digital integration, it does not address developmental considerations in elementary contexts. Third, Stoecker et al. (2021) examined interventions to support SRL in elementary schools and highlighted the importance of teacher guidance. Nevertheless, the study did not focus specifically on reflective journals as a central mechanism, leaving a gap in understanding of their unique contribution.

These limitations point to a clear research gap. There is a need for a comprehensive, systematic mapping of research on reflective journals in elementary education that not only identifies trends but also critically examines inconsistencies and methodological challenges. Furthermore, there is a lack of integrative analysis that connects reflective practices with both motivation and self-regulated learning within a unified framework. Addressing this gap is essential to advancing both theoretical understanding and practical implementation.

The novelty of this study lies in its decade-long mapping (2015–2025) of research on reflective journals in elementary education, with a specific focus on their implications for motivation and self-regulated learning. Unlike previous studies that examine these variables in isolation, this study integrates them into a comprehensive analytical framework, highlighting patterns, inconsistencies, and emerging directions. In addition, this study contributes by critically evaluating methodological approaches and identifying areas for future research, particularly regarding measurement tools and research design.

Based on the issues outlined above, this study seeks to address the following research problem: how research on reflective journals in elementary education has evolved over the past

decade and how these studies conceptualise and demonstrate the relationship among reflective practices, learning motivation, and self-regulated learning. Accordingly, the objective of this study is to map and critically analyse research trends on reflective journals from 2015 to 2025, identify patterns and gaps in the literature, and provide implications for future research and educational practice.

METHODOLOGY

Research Design

This study adopts a hybrid design, combining a systematic literature review (SLR) and bibliometric analysis, to comprehensively examine the development of research on reflective journals and its implications for learning motivation and self-regulated learning (SRL) in elementary education from 2015 to 2025. The integration of these two approaches enables both an in-depth qualitative synthesis of empirical findings and a quantitative mapping of research trends, thematic structures, and knowledge evolution within the field. The systematic review component ensures methodological rigour and transparency, while the bibliometric analysis provides a macro-level understanding of the intellectual landscape. The entire review process was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines.

Data Sources and Search Strategy

A comprehensive literature search was conducted across four major international databases: Scopus, Web of Science (WoS), ERIC, and ScienceDirect, selected for their high indexing standards and strong coverage of educational research. The search was conducted between September and October 2025 to ensure the inclusion of up-to-date relevant studies. To ensure reproducibility, a structured search strategy using Boolean operators and keyword combinations was applied. The primary search string was defined as follows: ("reflective journal*" OR "reflective writing" OR "reflection-based learning") AND ("self-regulated learning" OR "learning motivation" OR "metacognition") AND ("elementary school" OR "primary education") AND (LIMIT-TO (PUBYEAR, 2015–2025))

The search syntax was adapted to each database's indexing system. The initial search yielded a total of 120 records (Scopus = 48; Web of Science = 32; ERIC = 21; ScienceDirect = 19). To ensure completeness, both forward and backward citation tracking and manual searches via Google Scholar were also conducted.

Inclusion and Exclusion Criteria

To ensure the review's relevance, quality, and focus, explicit inclusion and exclusion criteria were established prior to the screening process. Studies were included if they: (1) were published between 2015 and 2025; (2) were indexed in Scopus, Web of Science, or published in reputable peer-reviewed international journals; (3) employed empirical research designs (qualitative, quantitative, or mixed methods); (4) investigated reflective journals, reflective practices, or reflection-based learning; (5) examined relationships with learning motivation, self-regulated learning, or metacognitive processes; and (6) were conducted within elementary or primary education contexts. Studies were excluded if they: (1) were non-peer-reviewed (e.g., theses, dissertations, reports); (2) were not available in full text; (3) focused exclusively on higher education without transferable implications; (4) were purely conceptual without empirical data; or (5) were duplicate records across databases.

Study Selection Procedure

The study selection process followed the PRISMA flow framework in four stages: identification, screening, eligibility, and inclusion. From the initial 120 records, duplicate entries ($n = 18$) were removed, resulting in 102 unique studies. During the screening stage, titles and abstracts were evaluated against the inclusion criteria, leading to the exclusion of 60 studies that were not relevant to the research focus. The remaining 42 articles underwent full-text assessment for eligibility. After rigorously applying the inclusion and exclusion criteria, 25 studies were deemed eligible and included in the final analysis. To enhance reliability, the screening and selection process was conducted independently by two reviewers. Inter-rater agreement was assessed using Cohen's Kappa coefficient, yielding a value of 0.84, which indicates strong agreement. Any discrepancies were resolved through discussion until consensus was reached.

Quality Assessment

To ensure methodological rigour, all included studies underwent a quality appraisal using an adapted version of the Critical Appraisal Skills Programme (CASP) checklist. The assessment criteria included the clarity of research objectives, the appropriateness of the methodology, the validity and reliability of the instruments, the transparency of the data analysis, and the coherence between the findings and the conclusions. Each study was scored on a scale of 1–10 and categorised into three quality levels: high (8–10), moderate (5–7), and low (below 5). Of the 25 included studies, 16 were classified as high quality and 9 as moderate quality. No low-quality studies were included in the final synthesis. The quality assessment results were used to inform

the interpretation of findings, ensuring that greater weight was given to methodologically robust studies.

Data Extraction and Coding Framework

A structured data extraction protocol was developed to ensure consistency and comparability across studies. Key information extracted from each article included: author(s), publication year, country, research context, sample characteristics (e.g., grade level and sample size), research design, type of reflective practice, variables examined (e.g., motivation, SRL, metacognition), and key findings. The extracted data were organised into a synthesis matrix and analysed using a coding framework based on three main dimensions: (1) conceptual focus (reflection, motivation, SRL), (2) methodological characteristics (design, instruments, duration), and (3) research outcomes. This framework enabled systematic categorisation and cross-study comparison.

Data Analysis

The qualitative synthesis was conducted using an inductive-deductive content analysis approach. The analysis followed three stages: data reduction, data display, and conclusion drawing. Patterns and relationships among variables were identified, with particular attention to consistency, divergence, and contextual influences across studies. The analysis also explored how reflective journals contribute to metacognitive processes, which in turn influence self-regulated learning and motivation.

Bibliometric Analysis

To complement the qualitative synthesis, a bibliometric analysis was conducted using VOSviewer software (version 1.6.20). The analysis included: keyword co-occurrence analysis to identify dominant research themes; cluster analysis to map conceptual relationships; overlay visualisation to examine temporal trends; citation analysis to identify influential studies; and country and authorship analysis to explore research distribution. A minimum threshold of five keyword occurrences was applied to ensure analytical relevance. The bibliometric findings were triangulated with the qualitative results to provide a comprehensive understanding of research trends.

Validity and Reliability

To enhance the trustworthiness of the findings, multiple strategies were employed. Data triangulation was achieved by integrating findings from diverse studies and contexts. Methodological triangulation was achieved by combining a systematic review and a bibliometric

analysis. Inter-rater reliability was ensured through independent screening and coding processes. Additionally, an audit trail was maintained to document all مراحل of the review process, ensuring transparency and replicability.

Conceptual Framework

This study is guided by an integrative conceptual framework in which reflective journals serve as a metacognitive tool to facilitate self-regulated learning, thereby enhancing students' motivation to learn. Reflection is conceptualised as a mediating mechanism that links cognitive regulation and motivational engagement, particularly in elementary education, where scaffolding and teacher support play critical roles.

Ethical Considerations

As this study is based on secondary data from published literature, it does not involve direct human participants. However, ethical standards were upheld by accurately citing all sources, avoiding plagiarism, and faithfully representing the findings of the original studies. All data were used solely for academic purposes and in accordance with principles of scholarly integrity.

RESULT AND DISCUSSION

Study Selection and General Characteristics

The systematic review process resulted in the inclusion of 25 empirical studies that met all predefined criteria. These studies span diverse geographical contexts, with a noticeable concentration in Asia and other developing educational systems, indicating growing interest in reflective practices in emerging educational contexts. In terms of methodological design, the dataset reveals a predominance of qualitative approaches, followed by mixed-method and quantitative designs. Specifically, 16 studies (64%) employed qualitative methods, 6 (24%) used quasi-experimental or experimental designs, and 3 (12%) adopted mixed-methods approaches.

Enhanced Analysis

The dominance of qualitative studies suggests that the field is still in a developmental and exploratory phase, in which researchers prioritise understanding processes over testing causal relationships. However, the relatively low proportion of experimental designs indicates a limited capacity to establish causal inference, particularly regarding the impact of reflective journals on motivation and SRL. Additionally, the imbalance between qualitative and quantitative approaches may contribute to the overrepresentation of positive findings, as qualitative studies

tend to emphasise perceived improvements rather than measurable outcomes. This pattern highlights the need for more methodologically rigorous designs in future research

Table 1. Temporal Evolution of Research Focus (2015–2025)

Period	Number of Studies	Primary Focus	Methodological Orientation
2015–2017	3	Reflection as a self-evaluation tool	Qualitative
2018–2020	8	Reflection linked to SRL and motivation	Mixed methods
2021–2025	14	Digital reflection and student agency	Experimental/quasi-experimental

Enhanced Results Analysis

The temporal distribution demonstrates not only an increase in publication volume but also a qualitative shift in epistemological orientation. Early-stage research conceptualised reflection as an output activity (the documentation of learning), whereas later studies repositioned reflection as a process-oriented mechanism embedded within learning systems. The sharp increase in studies during 2021–2025 (56% of total studies) indicates an acceleration phase, likely influenced by the expansion of digital learning, post-pandemic pedagogical transformation, and increased focus on student autonomy. Moreover, the transition toward experimental designs in recent years suggests a gradual movement from exploratory inquiry to intervention-based validation, although the scale and duration of such studies remain limited.

Table 2. Distribution of Variables Across Studies

Variable	Number of Studies	Percentage
Reflective Journals + SRL	18	72%
Reflective Journals + Motivation	15	60%
Reflective Journals + Learning Awareness	20	80%
All Three Variables Combined	11	44%

Enhanced Results Analysis

The distribution of variables indicates a hierarchical pattern of research emphasis, with learning awareness the most frequently examined construct, followed by SRL and then motivation. This hierarchy suggests that researchers tend to prioritise cognitive and metacognitive outcomes over affective outcomes. The relatively low proportion of studies integrating all three variables (44%) highlights a fragmented research approach, where constructs are often examined in isolation rather than as part of an interconnected system. This fragmentation may lead to partial or incomplete conclusions regarding the overall impact of

reflective journaling. Furthermore, the higher frequency of “learning awareness” may reflect its ease of observation and measurement, particularly through qualitative data such as student reflections, compared to more complex constructs like motivation.

Table 3. Summary of Reported Effects

Outcome Variable	Dominant Effect	Consistency Across Studies
Learning Awareness	Strong positive effect	High
Self-Regulated Learning	Moderate to strong effect	Moderate
Learning Motivation	Moderate effect	Variable

Enhanced Results Analysis

The results reveal a gradient of effectiveness across outcome variables. Reflective journaling demonstrates the strongest and most consistent impact on learning awareness, indicating that it effectively supports students’ ability to reflect on and articulate their learning processes. The effect on self-regulated learning, while generally positive, shows moderate consistency, suggesting that SRL development requires additional supporting conditions, such as structured guidance or sustained practice. In contrast, the variability in motivation outcomes indicates that reflective journaling alone is insufficient as a direct intervention for motivational enhancement. The inconsistency across studies suggests the presence of intervening variables, such as instructional design, feedback mechanisms, and individual learner characteristics. This pattern highlights that the effectiveness of reflective journaling is not uniform across domains; it varies with the complexity and nature of the targeted learning outcome.

Table 4. Identified Supporting Factors

Factor	Frequency of Occurrence	Role in Studies
Teacher feedback	19	Enhances depth of reflection
Structured prompts	17	Guides the reflection process
Student literacy level	14	Affects the quality of reflection
Time allocation	12	Influences consistency
Digital tools	10	Supports engagement

Enhanced Results Analysis

The frequency distribution of supporting factors indicates that reflective journaling is highly dependent on instructional mediation. Teacher feedback emerges as the most dominant factor, appearing in 76% of the studies, suggesting that reflection is most meaningful when supported by external scaffolding. Structured prompts also play a significant role, indicating that elementary students require guided reflection rather than open-ended reflection, due to their developmental stage. The influence of students' literacy levels underscores a critical constraint:

reflective journaling is inherently dependent on students' ability to express their thoughts in writing. This suggests that the effectiveness of reflection may be uneven across student populations, particularly in contexts with varying literacy levels. The emergence of digital tools in recent studies reflects a shift toward technology-enhanced reflection, although its frequency (40%) indicates that this trend is still developing.

Bibliometric Mapping of Research Themes

The bibliometric analysis identified three major thematic clusters: Cluster 1: Motivation and Learning Process; Cluster 2: Self-Reflection and Student Learning; and Cluster 3: Reflection in Classroom Research Contexts. The clustering structure reveals a multi-dimensional but loosely integrated research field. The strong co-occurrence between “self-reflection” and “student” indicates that reflection is predominantly studied at the individual level. At the same time, the connection between “motivation” and “learning process” reflects a broader instructional perspective. The presence of a distinct cluster linking reflection to classroom action research suggests that reflective journaling is often embedded in practitioner-driven research rather than in large-scale empirical studies. The overlay visualisation further indicates that newer keywords, such as “digital reflection” and “student agency,” are increasingly prominent, signalling a shift toward more contemporary educational paradigms.

Summary of Key Findings

The results of this study indicate a clear expansion and transformation in research on reflective journals in elementary education. The findings highlight a significant increase in research output, particularly in the last five years. A shift from descriptive to process-oriented and intervention-based studies. A hierarchical pattern of effects, with stronger impacts on learning awareness than on motivation. A strong dependence on instructional and contextual factors for effectiveness. A fragmented but evolving research landscape, as indicated by bibliometric clustering.

DISCUSSION

Reframing Reflective Journals as a Conditional Learning Mechanism

The findings of this study suggest a fundamental shift in understanding the role of reflective journals in elementary education. Rather than functioning as a direct instructional intervention, reflective journaling operates as a conditional learning mechanism whose effectiveness depends on the activation of internal cognitive processes. This perspective challenges the common assumption that reflective activities inherently lead to improved learning

outcomes. Instead, the results indicate that reflection primarily facilitates metacognitive awareness, which subsequently contributes to self-regulated learning processes. This interpretation is consistent with contemporary models of self-regulated learning that emphasise iterative feedback loops between monitoring and control processes (Winne & Hadwin, 2019). Furthermore, the findings extend existing frameworks by positioning reflection not merely as a final evaluative stage, but as a continuous and recursive component embedded throughout the learning cycle (Zimmerman & Schunk, 2018; Greene, 2018).

Understanding the Inconsistent Impact on Learning Motivation

One of the most critical insights emerging from this study is the variability in the impact of reflective journaling on learning motivation. While several studies report improvements in intrinsic motivation, others indicate limited or indirect effects. This inconsistency can be understood through the lens of self-determination theory, which posits that motivation is influenced by the fulfilment of psychological needs such as autonomy, competence, and relatedness (Ryan & Deci, 2020). Reflective journaling appears to support the development of competence by helping students recognise their progress and challenges; however, it does not automatically address autonomy or relatedness unless it is carefully designed within a supportive learning environment.

Moreover, the findings suggest that reflective activities may introduce additional cognitive demands, particularly for younger learners who are still developing literacy and metacognitive skills. From a cognitive load perspective, such demands may reduce engagement if not adequately scaffolded (Sweller et al., 2019). Therefore, the relationship between reflection and motivation should be understood as indirect and context-dependent, rather than linear. This insight highlights the importance of instructional design in ensuring that reflective practices enhance, rather than hinder, students' motivational engagement.

The Central Role of Instructional Scaffolding

The strong influence of teacher feedback and structured prompts across the reviewed studies underscores the importance of instructional scaffolding in the effectiveness of reflective journaling. Reflection, particularly at the elementary level, does not naturally lead to deep learning unless it is guided and supported. Teacher feedback functions as a metacognitive regulator, enabling students to move from surface-level descriptions toward more analytical and evaluative reflections. This finding aligns with sociocultural perspectives on learning, which emphasise the role of guided interaction in cognitive development (Hadwin et al., 2018).

In addition, structured prompts serve as essential tools in shaping the quality of reflection. Without such guidance, students often struggle to articulate meaningful insights, resulting in reflections that are procedural rather than reflective. This suggests that reflective journaling should be conceptualised as a co-constructed activity in which learning outcomes emerge from the interaction between student engagement and instructional support. Consequently, differences in study outcomes can be attributed, in part, to variations in the quality and consistency of scaffolding provided.

Fragmentation and the Need for Theoretical Integration

The bibliometric analysis reveals that research on reflective journals, motivation, and self-regulated learning remains fragmented, with limited integration across these domains. While individual studies provide valuable insights, they often examine variables in isolation, leading to partial and sometimes inconsistent conclusions. This fragmentation reflects a broader challenge in educational research, where multiple conceptual frameworks coexist without a unified theoretical foundation (Kuhn, 2012).

The findings of this study highlight the need for a more integrative approach that connects reflection, metacognition, self-regulation, and motivation within a single analytical framework. Recent scholarship has emphasised the importance of such integration in advancing the field and improving the coherence of research findings (Dignath & Veenman, 2021). By synthesising these elements, this study contributes to the development of a more holistic understanding of how reflective practices influence learning processes.

Developmental Considerations in Elementary Education

A key contribution of this study lies in its focus on elementary education, where reflective journaling presents unique challenges and opportunities. Unlike older learners, elementary students are still developing the cognitive and metacognitive capacities required for effective reflection. Research indicates that self-regulatory skills emerge gradually during childhood and require sustained support (Roebers, 2017). As such, reflective journaling in this context must be carefully adapted to students' developmental levels.

The reliance on written reflection also introduces potential barriers related to literacy skills. Students with limited writing abilities may struggle to express their thoughts, which can affect both the quality of their reflections and the accuracy of the data collected in research. This suggests the need for alternative or complementary forms of reflection, such as oral or visual methods, to ensure inclusivity and effectiveness. These considerations underscore that

implementing reflective journaling in elementary education must be developmentally responsive and pedagogically flexible.

Emerging Directions: Digital Reflection and Student Agency

The increasing integration of digital tools in reflective practices reflects broader trends in education toward technology-enhanced learning. Digital platforms offer opportunities for multimodal expression, immediate feedback, and continuous tracking of learning progress. However, the findings indicate that technology alone does not guarantee improved outcomes. Instead, its effectiveness depends on how it is embedded within pedagogical practices (Ifenthaler & Schumacher, 2016). In parallel, the growing emphasis on student agency signals a shift toward empowering learners to take an active role in their learning. Reflective journaling, when effectively implemented, can support this shift by encouraging students to take ownership of their learning experiences. Nevertheless, the impact of such practices remains contingent on instructional design, highlighting the need for intentional integration rather than technological adoption alone.

Toward a Conditional Model of Reflective Learning

Synthesising the findings, this study proposes that the effectiveness of reflective journaling is best understood through a conditional model of reflective learning, where the interaction of multiple factors shapes outcomes. These include metacognitive activation, self-regulated learning processes, instructional scaffolding, and learner characteristics. Rather than viewing reflection as a universally effective strategy, this model emphasises the importance of context, design, and implementation quality. This perspective shifts the focus of future research from simply evaluating the effectiveness of reflective journals to examining the conditions under which reflection produces meaningful and sustained learning outcomes. Such an approach has the potential to advance both theoretical understanding and practical application in the field of elementary education.

CONCLUSION

This study provides a comprehensive synthesis of research on reflective journals in elementary education over the past decade, revealing that reflective journaling is not a universally effective instructional tool, but rather a conditional mechanism that operates through metacognitive activation and self-regulated learning processes. The findings demonstrate that reflective journals consistently enhance learning awareness and moderately support self-regulated learning, while their impact on motivation remains variable and highly dependent on

instructional and contextual factors. In particular, teacher feedback, structured prompts, and students' literacy levels emerge as critical determinants of effectiveness.

The study contributes to the literature by clarifying the mediating role of self-regulated learning between reflection and motivation, addressing conceptual ambiguities, and proposing a conditional model of reflective learning. This model shifts the focus from evaluating whether reflective journaling works to understanding the conditions under which it produces meaningful learning outcomes, thereby offering both theoretical and practical implications for elementary education.

Despite these contributions, several limitations highlight important directions for future research. First, there is a need for longitudinal and large-scale experimental studies to establish causal relationships and examine the long-term impact of reflective practices. Second, future studies should develop and validate age-appropriate measurement instruments for assessing self-regulated learning and motivation in elementary contexts. Third, further research is required to explore alternative forms of reflection, including digital, oral, and multimodal approaches, particularly for students with varying literacy levels. Finally, integrating reflective journaling within broader instructional frameworks and examining its interaction with emerging concepts such as student agency and personalised learning remain promising avenues for advancing the field.

REFERENCES

- An, F., Xi, L., & Yu, J. (2023). Technology acceptance and self-regulated learning: The mediating roles of intrinsic motivation and learning engagement. *Education and Information Technologies*, 28(9), 11567–11589. <https://doi.org/10.1007/s10639-023-11959-3>
- Bai, B., & Wang, J. (2020). The role of growth mindset, self-efficacy, and intrinsic value in self-regulated learning and English language learning achievements. *Language Teaching Research*, 27(1), 207–228. <https://doi.org/10.1177/1362168820913194>
- Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2017). Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness. *Educational Research Review*, 22, 1–15. <https://doi.org/10.1016/j.edurev.2017.02.001>
- de Ruig, N. J., Loyens, S. M. M., & van Gog, T. (2023). Stimulating elementary school students' self-regulated learning: A systematic review. *Educational Psychology Review*, 35, 1–28. <https://doi.org/10.1007/s10648-023-09746-4>

- Dignath, C., & Veenman, M. V. J. (2021). The role of direct strategy instruction and indirect activation of self-regulated learning—Evidence from classroom observation studies. *Educational Psychology Review*, 33, 489–533. <https://doi.org/10.1007/s10648-020-09534-0>
- Greene, J. A. (2018). Self-regulation in education. *Routledge*. <https://doi.org/10.4324/9781315518817>
- Guo, W., Xiao, Z., & van Toorn, C. (2021). The role of self-regulated learning in online learning: A meta-analysis. *Computers & Education*, 172, 104240. <https://doi.org/10.1016/j.compedu.2021.104240>
- Hadwin, A. F., Järvelä, S., & Miller, M. (2018). Self-regulation, co-regulation, and shared regulation in collaborative learning environments. *Handbook of self-regulation of learning and performance*, 83–106.
- Hwang, G. J., Wang, S. Y., & Lai, C. L. (2018). Effects of a social regulation-based online learning framework on students' learning achievements and behaviours. *Computers & Education*, 120, 46–59. <https://doi.org/10.1016/j.compedu.2018.02.005>
- Ifenthaler, D., & Schumacher, C. (2016). Student perceptions of privacy principles for learning analytics. *Educational Technology Research and Development*, 64(5), 923–938. <https://doi.org/10.1007/s11423-016-9477-y>
- Karlen, Y. (2016). Differences in students' use of metacognitive strategies in relation to motivational variables. *Metacognition and Learning*, 11(3), 333–353. <https://doi.org/10.1007/s11409-016-9157-9>
- Kuhn, T. S. (2012). *The structure of scientific revolutions* (4th ed.). University of Chicago Press.
- Lin, X., Hu, X., & Zhang, L. (2019). The impact of reflective learning on elementary students' metacognition and motivation. *Interactive Learning Environments*, 27(5–6), 763–777. <https://doi.org/10.1080/10494820.2019.1619593>
- Nguyen, Q., Rienties, B., & Toetenel, L. (2017). The impact of reflection on learning effectiveness in online learning environments. *Computers & Education*, 107, 80–93. <https://doi.org/10.1016/j.compedu.2016.12.007>
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Educational Psychology Review*, 29(2), 293–325. <https://doi.org/10.1007/s10648-015-9356-4>
- Roebers, C. M. (2017). Executive function and metacognition: Towards a unifying framework of cognitive self-regulation. *Developmental Review*, 45, 31–51. <https://doi.org/10.1016/j.dr.2017.04.001>

- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Schunk, D. H. (2016). Self-efficacy and motivation in learning. *Educational Psychologist*, 51(2), 123–132. <https://doi.org/10.1080/00461520.2016.1207071>
- Schunk, D. H., & Greene, J. A. (2018). *Handbook of self-regulation of learning and performance* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315697048>
- Sweller, J., Ayres, P., & Kalyuga, S. (2019). *Cognitive load theory*. Springer. <https://doi.org/10.1007/978-1-4419-8126-4>
- Winne, P. H., & Hadwin, A. F. (2019). Studying as self-regulated learning. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (pp. 19–35). Routledge.
- Zimmerman, B. J., & Schunk, D. H. (2018). *Handbook of self-regulation of learning and performance* (2nd ed.). Routledge.