



Trends in TaRL-Based Student Worksheet Development for Indonesian Language Learning in Elementary Schools: A Systematic Literature Review (2020–2025)

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ABSTRACT

This study examines trends in the development of Teaching at the Right Level (TaRL)-based student worksheets and their relationship with collaboration skills in Indonesian language learning at the elementary school level during the 2020–2025 period. The main issue is the limited integration of collaboration skills in student worksheets, particularly in lower grades, causing learning to emphasize cognitive aspects. This study employed a Systematic Literature Review (SLR) and bibliometric analysis using VOSviewer software. Data were collected through the Publish or Perish application connected to Google Scholar and Scopus. An initial search identified 300 articles, which were filtered based on inclusion criteria to obtain 100 eligible studies. From these, 25 representative articles were selected for qualitative analysis. The results show that: (1) TaRL effectively improves basic literacy-numeracy skills; (2) student worksheets development focuses mainly on cognitive domains, with limited attention to social and affective aspects; (3) collaboration skills among lower-grade elementary learners remain underexplored; and (4) comprehensive integration of TaRL, student worksheets, and collaboration skills in Grade I Indonesian language learning has not yet been comprehensively addressed. These findings indicate a research gap and opportunities for developing collaboration-oriented TaRL-based student worksheets to support 21st-century skills.

1. Introduction

21st century education requires learners to develop literacy, numeracy, critical thinking, communication, creativity, and collaboration skills. In the context of elementary education, these competencies serve as a fundamental foundation enabling learners to respond to increasingly complex global challenges. In line with

this demand, the Merdeka Curriculum emphasizes learner-centered and differentiated instruction while supporting the development of social skills. However, classroom practices indicate that learning in lower elementary grades remains predominantly individual and teacher-centered, limiting opportunities for learners to develop collaboration skills optimally. One instructional innovation that has gained attention over the past decade is Teaching at the Right Level (TaRL). This approach enables teachers to adjust learning materials and activities based on learners' actual ability levels. Several studies have demonstrated that TaRL is effective in improving basic literacy and numeracy skills (Fitriani & Syamsul, 2023). Nevertheless, TaRL implementation has largely focused on cognitive outcomes, with limited integration of social skills, particularly collaboration.

One of the most widely developed instructional components supporting elementary learning is student worksheets. The use of student worksheets has been shown to enhance learner engagement, facilitate both individual and group learning activities, and serve as an effective tool for differentiated instruction (Putri et al., 2025). However, literature reviews reveal that most student worksheets development still emphasizes academic content mastery (Suryani & Wahyuni, 2022), while only a small proportion explicitly incorporates collaborative activities in their design. Collaboration is a key 21st century competence essential for learners' holistic development. According to Greenstein (2012), collaboration indicators include active participation, responsibility, flexibility, compromise, and mutual respect. Santosa and Mulyadi (2021) further argue that collaboration skills should be fostered from an early age to become sustainable learning habits. Unfortunately, research findings indicate that collaborative learning is still rarely implemented in lower elementary grades, as teachers tend to prioritize early literacy achievement (Firmansyah, 2022).

Bibliometric analysis of publications from 2020 to 2025 reveals a shift in research trends. While earlier studies primarily focused on basic literacy and student collaboration (2020–2021), research since 2023 has increasingly emphasized effectiveness, project-based learning, and data-driven collaboration skills. Bibliometric visualizations show that keywords such as *collaboration skill*, *project*, and *problem solving* have become more prominent, whereas themes related to *cooperative work* and *student collaboration* have declined. This trend indicates a movement toward strengthening project-based collaboration supported by measurable instruments. Despite this positive development, a clear research gap remains. To date, no study has comprehensively integrated TaRL, student worksheets, and collaboration skills within instructional practices, particularly for lower elementary grades. In fact, the integration of these three elements holds significant potential: TaRL ensures instructional differentiation, student worksheets provide structured learning support, and collaboration fosters essential social skills required to meet 21st century educational demands.

Based on this background, this article aims to examine research trends related to the development of TaRL based student worksheets and their relationship with collaboration skills in elementary school learning during the 2020–2025 period. The selection of this period is intentional, as it captures a critical phase in which

educational research has increasingly shifted toward competency-based and learner-centered approaches to instructional material design. By focusing on elementary school learning, this review addresses a foundational stage of education in which both academic skill development and social-emotional growth are of paramount importance. The analysis draws on a systematic selection of studies that explore how TaRL principles have been embedded within student worksheet design to accommodate diverse learner ability levels. In addition to examining individual academic outcomes, this review pays particular attention to the ways in which collaborative skills have been integrated as a core learning objective within TaRL-based instructional frameworks.

2. Methodology

This study examines trends in the development of Teaching at the Right Level (TaRL)-based student worksheets and their relationship with collaboration skills in elementary school learning. The study employs a Systematic Literature Review (SLR) approach combined with bibliometric analysis to critically examine previous research findings and map publication trends during the 2020–2025 period. Data were obtained through the Publish or Perish application from Google Scholar and Scopus databases using the following keywords: “*student worksheets*”, “*Teaching at the Right Level*” or “*TaRL*”, “*collaboration skill*”, and “*elementary school*”. From an initial pool of 300 articles, a selection process was conducted based on inclusion criteria—namely publications from 2020–2025, relevance to student worksheets, TaRL, or collaboration in elementary education, availability of full-text articles, and indexing in SINTA or Scopus as well as exclusion criteria, including studies not conducted at the elementary school level, those lacking empirical data, or duplicate publications.

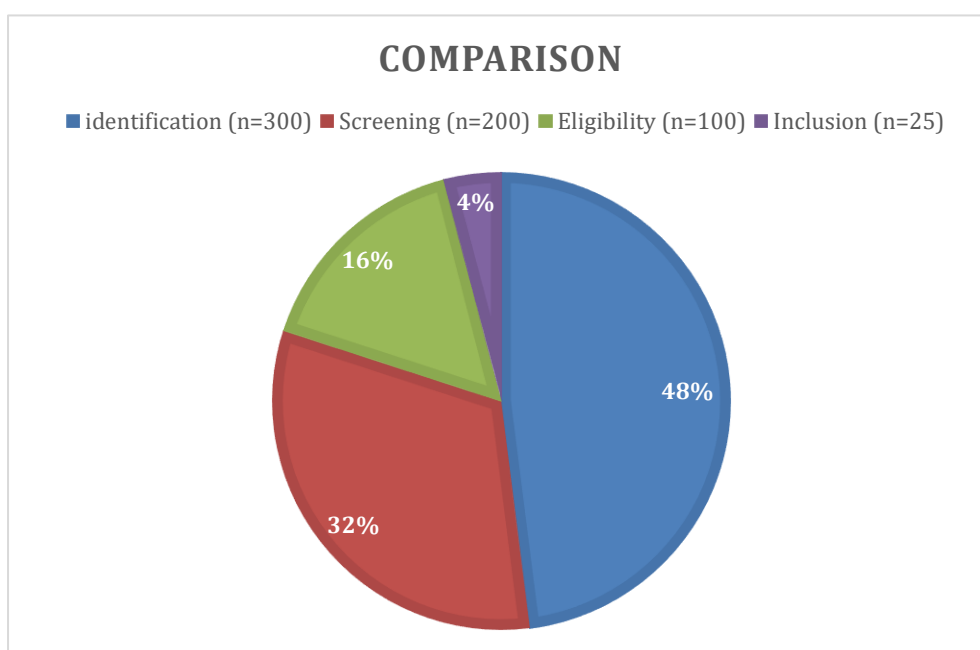


Figure 1. PRISMA Flowchart of Article Selection Process (Page et al., 2021)

This process resulted in 100 relevant articles. Subsequently, 25 representative articles were selected for qualitative analysis using a literature analysis instrument that had been validated by experts. The analysis was conducted in three stages: (1) descriptive analysis to identify publication patterns and research topics; (2) bibliometric analysis using VOSviewer to map keywords and research trends; and (3) qualitative analysis to examine student worksheets design, TaRL implementation, and collaboration skill indicators in elementary school learning. To clarify the article selection and screening process, the PRISMA flowchart illustrates the stages of data collection and reduction in this study.

3. Results and Discussion

The development of elementary education studies over the past five years has indicated a paradigm shift toward learning practices that are more adaptive, participatory, and oriented to the learning needs of students. Learning is no longer viewed merely as a process of delivering instructional content, but rather as an activity that fosters critical thinking skills, collaboration, and the ability to adapt to diverse learning contexts (Kemdikbudristek, 2023). This literature review was conducted to examine and map research trends related to the development of Teaching at the Right Level (TaRL) based Student Worksheets in elementary schools during the period 2020–2025. In addition, this review seeks to identify research gaps that may serve as a foundation for the development of instructional innovations at the elementary education level.

The review process was carried out systematically through the identification and selection of relevant articles indexed in both national and international databases. The analysis focused on trends in research topics, implementation contexts, and the contributions of the TaRL approach to twenty-first-century learning. Accordingly, the findings of this study are expected to provide a comprehensive overview of the direction of TaRL based student worksheets development, while also identifying opportunities to strengthen the collaborative dimension in students' learning processes.

The results of this literature review are presented in three main sections. First, a descriptive analysis is provided to illustrate the distribution of articles based on year of publication, research topic focus, and grade level. Second, a bibliometric analysis is conducted to map dominant keywords and research trends using VOSviewer. Third, a qualitative analysis of representative articles is undertaken to identify patterns in the development of TaRL-based student worksheets and their relationship with collaboration skills. The initial stage of the analysis aims to map the development of research on student worksheets and TaRL over the last five years. This analysis highlights the distribution of articles by year of publication in order to examine the dynamics of research trends. The results of the article distribution analysis are presented in Table 1.

Table 1. Distribution of Research Articles (2020–2025)

Publication Year	Number of Articles	Percentage (%)
2020	18	6
2021	35	12
2022	70	23
2023	85	28
2024	65	22
2025*	27	9
Total Articles	300	100

Table 1, which presents the distribution of research articles from 2020 to 2025, indicates a consistent increase in the number of publications since 2020, with the highest number recorded in 2023. This trend suggests that issues related to the development of Student Worksheets, the implementation of the Teaching at the Right Level (TaRL) approach, and the strengthening of collaboration skills have received increasing attention over the past five years. This increase is in line with the direction of twenty first century education policies and the implementation of the Merdeka Curriculum, which emphasizes the importance of differentiated learning and the development of students' social competencies. In addition, many researchers have begun to view student worksheets not only as a cognitive support tool, but also as an instructional medium capable of accommodating ability based approaches and fostering collaboration among students.

An analysis of research topics reveals that issues of literacy and numeracy continue to dominate the domain of TaRL development. This dominance reflects national education policy priorities that focus on strengthening foundational skills. However, the integration of TaRL with student worksheets and collaborative learning remains limited, indicating opportunities for the development of instructional materials that balance academic and social-emotional aspects. Therefore, the increasing number of publications reflects a growing academic awareness of the importance of integrating the TaRL approach with the development of collaboration skills in elementary education.

Subsequent analysis was conducted on the main focus of the reviewed studies. The purpose of this analysis was to identify the most frequently investigated research topics and to determine existing research gaps. Understanding the thematic distribution of research is essential for mapping the trajectory of scholarly inquiry and recognizing which areas have received disproportionate attention relative to their educational significance. By systematically categorizing each article according to its primary research focus, this analysis provides a structured basis for evaluating the breadth and depth of current knowledge on TaRL-based student worksheet development and collaboration skills. Furthermore, this thematic mapping serves as a foundation for identifying underrepresented topics that warrant greater scholarly attention in future research endeavors. The results of the distribution of articles by research topic are presented in Table 2.

Table 2. Results of Article Distribution

Research Focus/Topic	Number of Articles	Percentage (%)
TaRL and Literacy-Numeracy	110	37
Development of Student Worksheets	95	32
Collaboration Skill	70	23
Integration of TaRL, Studen Worksheets and Collaboration Skill	25	8
Total Articles	300	100

As shown in Table 2 on the distribution of research articles, studies focusing on the Teaching at the Right Level (TaRL) approach and the strengthening of literacy and numeracy skills continue to dominate publications over the past five years. This trend is consistent with national and global education policy priorities that position literacy and numeracy as the foundational pillars of learning at the elementary school level (Kemdikbudristek, 2023). Through the TaRL approach, educators are encouraged to adjust instructional strategies based on students' actual levels of ability rather than solely adhering to grade-level curriculum demands. This model has been proven effective in improving basic learning outcomes, particularly among students with lower levels of achievement (Hossain et al., 2023).

Meanwhile, research on the development of Student Worksheets also accounts for a substantial proportion of the analyzed studies, representing approximately 32% of the total articles reviewed. This finding indicates that student worksheets is still regarded as an effective instructional medium for supporting the implementation of differentiated learning in classroom settings. According to Prastowo (2023), student worksheets plays a crucial role in facilitating active and independent learning among students, while also enabling teachers to tailor learning activities to students' varying levels of ability. Several recent studies further confirm that the development of student worksheet based on students' learning needs and diagnostic assessment can enhance student engagement and participation in the learning process (Rahmawati & Yuliana, 2024). Therefore, the combination of the TaRL approach and adaptive students worksheets design provides a strong foundation for inclusive and student-centered learning.

Research that explicitly integrates the three main components TaRL, student worksheets development, and collaboration skills remains very limited, accounting for only about 8% of the total publications analyzed. This condition indicates that collaboration competence, as a key component of twenty first century social-emotional skills, has not yet become a primary focus within the implementation of TaRL at the elementary school level (Suryani & Fitriyah, 2024). In fact, collaboration is an essential skill that supports students' social development, effective communication, and problem-solving abilities within active learning contexts (Hidayati et al., 2023). The integration of TaRL, student worksheet, and collaborative learning has the potential to foster more meaningful, participatory, and ability-responsive learning experiences. The limited number of studies in this area therefore presents significant opportunities for future instructional innovation, particularly in the context of implementing the Merdeka Curriculum, which emphasizes differentiated learning and the Pancasila Student Profile.

The next stage of analysis focuses on the distribution of articles based on the grade levels that served as the research context. This analysis is important for understanding whether existing studies are predominantly conducted in lower or upper elementary grades. Examining the grade-level distribution of research provides critical insight into the extent to which TaRL-based instructional approaches have been explored across different developmental stages of elementary education. Such information is particularly valuable given that students in lower and upper elementary grades differ substantially in terms of cognitive maturity, social-emotional development, and learning readiness, all of which have direct implications for the design of appropriate instructional materials. Identifying the grade levels that have been underrepresented in existing research also enables scholars and practitioners to prioritize future investigations in contexts where evidence-based instructional guidance is most needed. The results of this distribution are presented in Table 3.

Table 3. Distribution of Articles by Grade Level

Elementary School Grade Level	Number of Articles	Percentage (%)
Grade I–II	11	11
Grade III–IV	35	35
Grade V–VI	54	54
Total	100	100

The distribution of articles based on grade levels, as presented in Table 3, indicates that research has predominantly been conducted at the upper elementary level, namely Grades V and VI, accounting for 54% of the studies. In contrast, studies conducted at the middle grades (Grades III–IV) represent 35%, while those focusing on the lower grades (Grades I–II) comprise only 11%. This imbalance in distribution reflects a tendency among researchers to focus on students who have more mature cognitive abilities and relatively stable literacy and numeracy skills (Nugraha & Setiani, 2023).

This phenomenon highlights a research gap in the implementation of the Teaching at the Right Level (TaRL) approach in early-grade classrooms. In fact, the lower elementary grades particularly Grades I and II—constitute a critical period in students' foundational development, encompassing literacy, numeracy, social, and emotional competencies (Hurlock, 2022; Rahmawati & Yuliana, 2024). At this stage, differentiated instruction and learning approaches that are aligned with students' actual levels of ability are especially important, as their cognitive structures are still situated at the concrete operational stage according to Piaget's theory (Santrock, 2021). Therefore, the application of the TaRL approach in lower grades not only facilitates the acceleration of basic literacy development but also fosters students' self-confidence and collaborative learning dispositions (Banerjee et al., 2022; Widodo & Salsabila, 2024).

The limited number of studies conducted at the lower grade level may be attributed to methodological challenges and the limited availability of diagnostic assessment instruments that are appropriate for early childhood learners (Setiawan et al., 2023). In addition, teachers in early grade classrooms tend to prioritize the mastery of basic

reading and numeracy skills, resulting in social aspects such as collaboration receiving less emphasis (Hidayati et al., 2023). However, findings from UNESCO (2023) emphasize that social-emotional and collaborative skills developed during the early years of elementary education have long-term effects on students' learning readiness and academic success at subsequent educational levels. This underscores the importance of not overlooking collaborative dimensions in early-grade instruction.

Accordingly, the results of this analysis underscore that the lower grades particularly Grades I and II represent an area with substantial potential for further research and innovation in Teaching at the Right Level (TaRL) based instructional practices. The limited volume of research at this level also presents significant opportunities to design learning models that are more adaptive to the cognitive and social-emotional developmental characteristics of young learners. The development of TaRL-based Student Worksheets in lower grades can be directed toward integrating concrete learning activities, educational games, and simple collaborative tasks that promote social interaction and cooperation among students (Widodo & Salsabila, 2024; Hidayati et al., 2023). This approach is consistent with Piaget's view (Santrock, 2021) that early elementary learners remain at the concrete operational stage, thereby requiring meaningful learning experiences supported by direct and contextual activities.

Furthermore, expanding research at the lower grade level is essential for strengthening the foundations of literacy and numeracy through differentiated approaches that are aligned with students' actual levels of ability (Rahmawati & Yuliana, 2024). When students are accustomed from an early age to working in small groups, communicating, and completing tasks collaboratively, collaboration skills are more likely to develop naturally and continuously across subsequent educational levels (UNESCO, 2023; Kemdikbudristek, 2023). Such an approach not only supports the achievement of basic learning mastery but also fosters mutual cooperation and respect as core values of the Pancasila Student Profile (Purnamasari et al., 2024).

Bibliometric analysis was also conducted to examine the interrelationships among keywords and research trends through visual mapping. This analysis aims to reveal how key concepts such as TaRL, student worksheets, and collaboration are positioned within the research landscape. Keyword co-occurrence mapping enables researchers to identify which concepts are most central to the field, which are peripheral, and how strongly various themes are interconnected within the body of literature under review. By visualizing these relationships, the bibliometric approach offers a more objective and data-driven perspective on the intellectual structure of research, complementing the qualitative synthesis conducted in subsequent stages of this review. The results of the bibliometric visualization using VOSviewer are presented as follows.

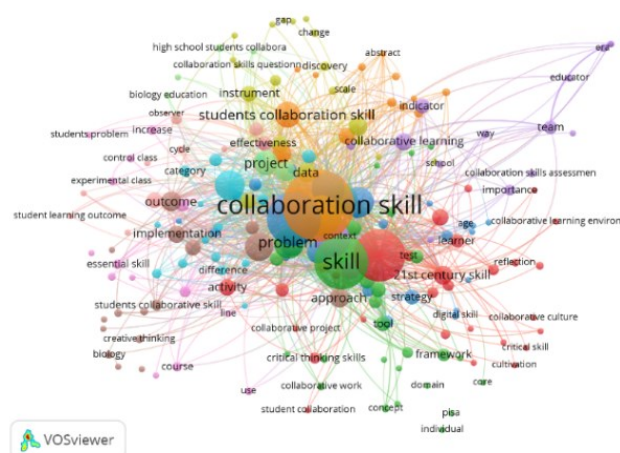


Figure 2. Bibliometric Visualization

The VOSviewer mapping results reveal five main clusters that illustrate the conceptual relationships among research topics, as indicated by differences in color, node size, and link strength between keywords. These clusters include: (1) basic literacy (reading, writing, comprehension, and basic numeracy); (2) Student worksheet-based learning (worksheets, instructional material, and student engagement); (3) collaboration and social skills (collaboration, teamwork, and communication); (4) effectiveness and differentiation (effectiveness, differentiated learning, and TaRL); and (5) 21st-century innovation (project, problem solving, innovation, and 21st-century skills). Visually, node size represents the frequency of keyword occurrence, line thickness (link strength) indicates the degree of interconnection among topics, and node color represents thematic clusters that are automatically generated based on conceptual proximity (van Eck & Waltman, 2021).

The green and orange clusters, characterized by large nodes labeled "collaboration skill," "students' collaboration skill," and "collaborative learning," occupy a central position in the map, indicating the dominance of collaboration-related issues in 21st-century educational research (Kurniawan et al., 2023; Suharti & Pratiwi, 2024). These nodes are strongly connected to keywords such as "project," "activity," and "problem," suggesting that project based learning and problem based learning have become popular approaches for fostering students' collaborative skills (Rahardjo & Winata, 2023; Widodo & Salsabila, 2024).

The pink and light-blue clusters demonstrate a close relationship between collaboration and keywords such as "21st-century skills," "critical thinking," and "digital skills," reinforcing the notion that recent studies position collaboration as an integral component of 21st-century competencies that are closely linked to critical thinking and digital literacy (Trilling & Fadel, 2022; Hidayati et al., 2023). Meanwhile, the keywords "assessment" and "evaluation" appear as relatively small nodes with limited connections, indicating a scarcity of research focusing on the assessment of collaborative skills (Arifin et al., 2022; Setiawan et al., 2023). This finding is noteworthy, as formative assessment plays a crucial role within the

The overlay visualization map in Figure 3 illustrates the temporal dynamics of research development. The analysis of this overlay visualization reveals the progression of research trends from 2020 to 2025. The color gradients represent the time range of keyword emergence, where blue green shades indicate earlier studies, while yellow signifies more recent topics. Overall, the color shift from blue to green and yellow across several key nodes indicates a transition in research focus from conceptual discussions toward more concrete applications in 21st-century learning (van Eck & Waltman, 2021).

Notably, the terms “*collaboration skill*,” “*project*,” and “*problem solving*” dominate the map during the 2023–2025 period, as reflected by their greenish-yellow coloration. This phenomenon suggests that current research trends are increasingly oriented toward strengthening project based and problem-solving-based collaboration as core strategies in modern learning (Rahardjo & Winata, 2023; Widodo & Salsabila, 2024). This approach aligns with the active learning paradigm, which encourages learners to collaborate, communicate, and solve challenges collectively key elements of 21st-century skills (Trilling & Fadel, 2022).

Other nodes colored light green, such as “*framework*,” “*implementation*,” and “*assessment*,” indicate a growing interest in research related to instructional design frameworks, model implementation, and the evaluation of collaborative skills, although the scale of these studies remains limited (Setiawan et al., 2023; Hidayati et al., 2023). In contrast, keywords such as “*Teaching at the Right Level*” and “*worksheets*” still appear in blue-green hues, suggesting that research on TaRL and student worksheets has not experienced significant growth over the past two years. This finding reinforces earlier observations that the integration of TaRL, student worksheets, and collaboration remains an underexplored research area (Nugraha & Setiani, 2023; Purnamasari et al., 2024).

Based on the color tendencies and node distribution, it can be concluded that recent research directions primarily emphasize implementative strategies to develop learners’ collaboration skills, yet relatively few studies connect these strategies with instructional differentiation as conceptualized in the TaRL approach. In fact, combining these two dimensions could generate adaptive learning innovations, where collaborative projects and activities are structured according to learners’ ability levels. Future research opportunities are therefore wide open, particularly in developing TaRL-based student worksheets that foster collaborative skills from the early grades of elementary school, enabling learning processes to become more meaningful and developmentally appropriate (Banerjee et al., 2022; Suharti & Pratiwi, 2024).

The final stage involved a qualitative analysis of 25 representative articles. This analysis aimed to explore in depth the approaches used by researchers in developing TaRL-based student worksheets and the ways in which collaborative skills were integrated. The qualitative review of these 25 articles published between 2020 and 2025 indicates a significant paradigm shift in research on the development of Teaching at the Right Level (TaRL)-based student worksheets. During the early period (2020–2021), studies predominantly focused on the effectiveness of student

worksheets as instructional support tools for accommodating diverse learner ability levels (Banerjee et al., 2022; Santosa & Mulyadi, 2021). However, in the subsequent period (2022–2025), research shifted toward designing student worksheets that are more contextual, collaborative, and adaptive to the characteristics of 21st-century learning. This transition reflects a broader recognition among researchers that student worksheets should not merely serve as differentiation tools, but also as structured platforms for fostering collaborative engagement and higher-order thinking skills among learners at varying proficiency levels.

Studies by Anggraini and Lestari (2023) as well as Prastowo et al. (2024) emphasize that the TaRL approach not only helps reduce academic achievement gaps in heterogeneous classrooms but also contributes to increased motivation and active participation among learners, particularly those at lower ability levels. Most studies employed a Research and Development (R&D) design using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) due to its flexibility in accommodating the characteristics of elementary school learners (Sari et al., 2022; Wahyuni & Putra, 2025). The 4D model (Define, Design, Develop, Disseminate) was also used in several studies to strengthen validation and practicality testing stages (Utami et al., 2023), while the Borg & Gall model was less frequently applied because it is considered relatively complex for elementary school contexts. These findings indicate a trend toward selecting more pragmatic and efficient development models that align with the practical needs of educators in the field.

In terms of content and development objectives, 17 out of the 25 articles focused primarily on improving cognitive learning outcomes, such as conceptual understanding, mastery of subject matter, and critical thinking skills (Rahmawati, 2023; Jannah & Nugroho, 2024). Meanwhile, only eight articles explicitly integrated collaborative skills into student worksheets design. This integration was implemented through group discussions, simple projects, pair work, and joint reflection activities (Rahayu & Hidayat, 2023; Kusuma et al., 2024). Several studies even combined TaRL principles with collaborative learning models such as project-based learning and cooperative learning, which were shown to enhance shared responsibility and communication skills among learners (Herlina et al., 2023; Fitriyani & Yusuf, 2024). This trend reflects a new direction in student worksheets development research that extends beyond academic adaptation to include the formation of social and collaborative skills, which are central to 21st-century competencies (Trilling & Fadel, 2021).

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Nevertheless, research trends still reveal an imbalance in implementation contexts. Of the 25 articles analyzed, 17 were conducted in upper elementary grades (IV–VI), five in middle grades (III), and only three focused on lower grades (I–II). This disparity indicates that younger learners who are at a crucial stage for developing foundational collaborative and social skills have not received sufficient attention in TaRL-based implementation. Previous research by Hidayati (2024) highlights that the concrete thinking patterns and experiential learning characteristics of lower-grade learners are highly compatible with the *learning by doing* principles embedded in collaborative approaches. This suggests a significant research gap in the application of TaRL-based student worksheets in lower elementary grades, particularly in the context of Indonesian language learning, which provides rich opportunities for developing collaboration through shared speaking, listening, reading, and writing activities.

In addition to identifying research gaps, the literature analysis also reveals the potential for novelty in integrating the TaRL approach with collaborative skill development. Whereas previous studies generally positioned TaRL-based student worksheets as tools for adapting individual academic abilities, future research should reconceptualize student worksheets as social learning instruments that encourage learners to support one another throughout the learning process. This perspective aligns with the OECD (2023), which argues that equity in 21st-century education cannot be achieved solely through ability-based differentiation, but must also be supported by collaborative learning that fosters empathy, social responsibility, and communication skills. Accordingly, the thesis entitled “*The Development of TaRL-Based Students Worksheets to Enhance Learners’ Collaboration Skills in Indonesian Language Learning for Grade I Elementary School*” holds a strategic position in addressing existing research gaps. The novelty of this study lies in the development of student worksheets that not only adapt to the academic ability levels of first-grade learners but also systematically integrate collaborative activities into Indonesian language learning. Through this approach, the study is expected to contribute an adaptive, inclusive, and learner-centered instructional model that strengthens the foundation of collaborative skills from the early stages of elementary education.

4. Conclusion

The results of the literature review of 300 articles published between 2020 and 2025 indicate that research on Teaching at the Right Level (TaRL) and the development of student worksheets remains predominantly focused on improving literacy and numeracy skills. The integration of collaboration skills within the context of TaRL-based student worksheets is still limited, as evidenced by bibliometric analysis

showing weak connections among the keywords *collaboration skill*, *TaRL*, and *student worksheets*. Qualitative analysis of 25 representative articles further confirms that most studies emphasize cognitive and affective learning outcomes, while social dimensions such as communication, cooperation, and empathy have not yet become primary research focuses. In addition, the review reveals that the implementation of the TaRL approach is more frequently conducted in upper elementary grades (IV–VI) than in lower grades (I–II). In fact, the early years of elementary education represent a fundamental phase for establishing learners' literacy, numeracy, and social-emotional foundations. This condition indicates a clear research gap in the development of instructional materials that integrate TaRL-based differentiated learning principles with the strengthening of collaboration skills among lower-grade learners.

Therefore, the synthesis of the literature underscores the urgency of further research focusing on the development of TaRL-based student worksheets oriented toward enhancing collaboration skills in lower elementary grades. Developmental research articulated in the title “*Development of TaRL-Based Student Worksheets to Improve Collaboration Skills in Grade I Indonesian Language Learning at Elementary Schools*” represents a relevant research direction to address the gaps identified in this review. This study aims not only to offer novelty in adaptive instructional design but also to respond to the demands of 21st century learning, which emphasizes the early development of social, communication, and collaboration competencies.

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