# Teaching at the Right Level (TaRL) as a Potential Solution for Improving Middle School Education: A Systematic Review of the Literature

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_**Abstract:** Ensuring quality education at the middle school level is pivotal in fostering students' academic success and personal growth. However, many educational systems grapple with the challenge of delivering effective and tailored instruction to students with diverse learning needs and abilities. A significant issue in middle school education is the persistent achievement gap between students, often exacerbated by socioeconomic status, language barriers, and learning disabilities. Traditional "one-size-fits-all" teaching approaches frequently fail to address these disparities, leaving some students struggling to keep up while others remain unchallenged. Teaching at the Right Level (TaRL) has emerged as a promising pedagogical approach to address the educational challenges faced in middle schools. This methodology emphasizes tailoring instruction to students' current learning levels rather than relying solely on age-based or grade-level curricula. By assessing students' proficiency and grouping them according to their competency levels, TaRL aims to provide targeted instruction that meets each student's unique needs. The implementation of TaRL involves several key steps: (1) conducting periodic assessments to determine students' current learning levels, (2) reorganizing classrooms into temporary, skill-based groups, and (3) delivering targeted instruction using appropriate learning materials and teaching strategies. Numerous studies have demonstrated the efficacy of TaRL in improving student achievement, particularly among low-performing and disadvantaged students. By addressing the diverse needs of middle school students through personalized instruction, TaRL holds promise as a transformative approach to narrowing achievement gaps and ensuring equitable access to quality education. As educational systems strive to enhance their pedagogical practices, TaRL presents a compelling solution for fostering inclusive and effective learning environments, empowering every student to reach their full potential._

**Keywords— Achievement gap, Teaching at the Right Level (TaRL), Personalized instruction, Targeted teaching**

## 1. INTRODUCTION

Education is a fundamental pillar that shapes the future of individuals and societies alike. It plays a pivotal role in equipping individuals with the necessary knowledge, skills, and values to navigate the complexities of life and contribute positively to their communities. In Indonesia, the education system has undergone significant reforms and transformations, yet challenges persist, particularly in the realm of middle school education. The concept of "Teaching at the Right Level" (TaRL) has emerged as a promising approach to address the prevalent learning gaps and improve educational outcomes for students in this critical stage of their academic journey.

The Indonesian education system has long been grappling with challenges such as disparities in educational quality, limited resources, and inadequate teacher training (World Bank, 2020). These issues are especially pronounced in middle schools, where students transition from primary education to more advanced and specialized curricula. During this crucial phase, learning gaps can widen, and students may struggle to keep up with the demands of the curriculum, leading to disengagement and poor academic performance (Gustine & Insawan, 2019).

The TaRL approach, developed by the non-profit organization Pratham, has gained global recognition for its innovative and evidence-based strategies aimed at addressing learning deficiencies (Banerjee et al., 2017). By employing targeted instruction tailored to students' actual learning levels, rather than adhering strictly to grade-level curricula, TaRL seeks to bridge the gaps and ensure that no child is left behind (Banerji & Chavan, 2016).

In Indonesia, where educational disparities are prevalent across different regions and socioeconomic strata, the TaRL approach holds significant promise. Many students in middle schools face challenges in mastering foundational skills in core subjects like mathematics and language arts, which can hinder their ability to progress academically (Suryadarma et al., 2021). TaRL's focus on meeting students at their current learning levels and providing targeted instruction has the potential to address these gaps and ensure that students acquire the necessary skills to succeed in their educational journey (Banerjee et al., 2016).

This systematic review of the literature aims to explore the effectiveness of the TaRL approach in improving middle school education in Indonesia. By synthesizing the available research and evidence from various contexts, this review seeks to provide a comprehensive understanding of the principles,

implementation strategies, and outcomes associated with TaRL. The primary objectives of this systematic review are:

1. To examine the theoretical foundations and pedagogical principles underlying the TaRL approach and its alignment with established learning theories and best practices in education (Pritchett & Beatty, 2015; Duflo et al., 2020).

2. To analyze the existing empirical evidence on the implementation and effectiveness of TaRL programs in middle school settings, with a particular focus on studies conducted in Indonesia or similar contexts (Mullis et al., 2020; Banerjee et al., 2017).

3. To identify the key factors contributing to the success or challenges of TaRL implementation, including teacher training, resource allocation, and community engagement (Duflo et al., 2019; Mbiti et al., 2019).

4. To evaluate the potential impact of TaRL on various educational outcomes, such as academic achievement, student engagement, and long-term learning trajectories (Singh, 2019; Banerjee et al., 2016).

5. To explore the scalability and sustainability of TaRL programs within the Indonesian educational system, considering factors such as policy implications, resource requirements, and stakeholder buy-in (World Bank, 2020; Duflo et al., 2020).

By addressing these objectives, this systematic review aims to contribute to the ongoing discourse on educational reform and provide evidence-based insights that can inform policymakers, educators, and stakeholders in Indonesia as they strive to enhance the quality and effectiveness of middle school education. The review will follow a rigorous and transparent methodology, adhering to established guidelines for systematic reviews in the field of education. It will encompass a comprehensive search and screening process to identify relevant studies from various academic databases, government reports, and organizational publications. The included studies will be critically appraised for their methodological quality and synthesized using appropriate data extraction and analysis techniques.

Through this systematic review, researchers and policymakers will gain a comprehensive understanding of the potential of TaRL as a solution for improving middle school education in Indonesia. The findings will contribute to the existing body of knowledge and provide valuable insights for decision-makers to develop evidence-based strategies and interventions tailored to the unique challenges and contexts of the Indonesian education system.

## 2. LITERATURE REVIEW

### 2.1 The Challenges of Middle School Education

Middle school education in Indonesia, known as Sekolah Menengah Pertama (SMP), represents a critical juncture in students' academic journeys. As students transition from elementary to secondary education, they encounter a myriad of challenges that can significantly impact their learning, engagement, and overall development. Addressing these challenges is crucial for ensuring a solid foundation for students' future academic and personal growth.

One of the most pressing challenges in Indonesia's middle school education is the persistent achievement gap among students from diverse socioeconomic backgrounds and geographic locations (Suryadarma et al., 2021; Toyamah et al., 2009). This gap is often exacerbated by disparities in access to quality education, particularly in rural and underprivileged areas (Susenas et al., 2020; World Bank, 2020). Students from low-income families and remote regions face additional barriers, such as limited access to educational resources, inadequate infrastructure, and a shortage of qualified teachers (Suryadarma et al., 2021; World Bank, 2020).



**Figure 1**. A Teacher facing the challenge of middle school education

The quality of instruction and teaching practices in middle schools is another significant challenge (Gustine & Insawan, 2019; Chang et al., 2014). Many teachers struggle to adapt their pedagogical approaches to meet the diverse learning needs and developmental stages of early adolescent students (Eccles & Roeser, 2011; Gustine & Insawan, 2019). Inadequate teacher training, limited professional development opportunities, and a lack of resources often hinder effective teaching and learning in middle school classrooms (Chang et al., 2014; World Bank, 2020). Furthermore, the transition from elementary to middle school itself presents unique challenges for Indonesian students (Sofyan & Susilawati, 2021; Gustine & Insawan, 2019). The shift from a familiar, single-classroom environment to a more complex and demanding schedule with multiple teachers and subjects can be overwhelming (Cauley & Jovanovich, 2006; Akos et al., 2015). This transition is further complicated by the physical, cognitive, and social-emotional changes that students experience during early adolescence (Eccles & Midgley, 1989; Eccles et al., 1993).

Maintaining student engagement and motivation is another critical challenge in Indonesia's middle school education (Sofyan & Susilawati, 2021; Gustine & Insawan, 2019). As students progress through middle school, their intrinsic motivation and interest in academic pursuits tend to decline, potentially leading to disengagement, poor academic performance, and increased risk of dropping out (Wigfield et al., 2006; Fredricks et al., 2004). This decline in motivation can be attributed to factors such as a mismatch between instructional practices and students' developmental needs, lack of relevance in the curriculum, and diminished support systems (Eccles et al., 1993; Wigfield et al., 2015).

Disciplinary issues and behavioral problems pose significant challenges in Indonesian middle schools (Gustine & Insawan, 2019; Sofyan & Susilawati, 2021). The transition to middle school often coincides with a period of increased risk-taking behavior, peer influence, and identity exploration (Eccles et al., 1993; Steinberg, 2005). Inadequate support systems, such as counseling and mentorship programs, can exacerbate these challenges, leading to disruptive behaviors, absenteeism, and potential long-term consequences for students (Gottfredson et al., 2005; Theriot & Dupper, 2010).

Limited resources, including inadequate funding, outdated facilities, and a shortage of qualified teachers, present another obstacle to effective middle school education in Indonesia (World Bank, 2020; Suryadarma et al., 2021). These resource constraints can hinder the implementation of effective instructional practices, limit access to technology and learning materials, and contribute to larger class sizes, which can negatively impact student achievement and engagement (Bohrnstedt & Stecher, 2002; Darling-Hammond, 2000).

Additionally, the diverse cultural and linguistic backgrounds of students in Indonesia pose unique challenges for middle school education (Zein, 2017; Kusumaningrum et al., 2019). With over 700 living languages spoken across the archipelago, ensuring effective communication and instruction in the national language (Bahasa Indonesia) can be a significant hurdle, particularly in remote and indigenous communities (Zein, 2017; Kusumaningrum et al., 2019). Culturally responsive teaching practices and inclusive learning environments are essential to address this challenge and promote equitable educational opportunities (Gay, 2018; Ladson-Billings, 1995).

Addressing the challenges in Indonesia's middle school education is crucial for ensuring student success and promoting social mobility. Failure to address these challenges can have long-lasting consequences, such as increased dropout rates, diminished academic success, and limited opportunities for personal and professional growth (Balfanz et al., 2007; Rumberger, 2011). Researchers and educators in Indonesia have proposed various strategies and interventions to mitigate the challenges faced in middle school education. These include implementing comprehensive school transition programs to support students as they move from elementary to middle school (Cauley & Jovanovich, 2006; Akos et al., 2015; Sofyan

& Susilawati, 2021). Additionally, promoting culturally responsive teaching practices and fostering inclusive learning environments can help address the achievement gap and enhance student engagement (Gay, 2018; Ladson-Billings, 1995; Zein, 2017).

Adopting student-centered pedagogies, such as project-based learning and inquiry-based approaches, has been shown to increase motivation and engagement among middle school students in Indonesia (Ertmer & Simons, 2006; Blumenfeld et al., 1991; Gustine & Insawan, 2019). Furthermore, implementing comprehensive school-wide positive behavior support systems and restorative justice practices can help address disciplinary issues and promote a positive school climate (Bradshaw et al., 2008; Gonzalez, 2012; Sofyan & Susilawati, 2021).

Effective teacher professional development and support systems are also crucial in addressing the challenges faced in Indonesia's middle school education (Darling-Hammond et al., 2017; Desimone et al., 2002; Chang et al., 2014). Providing teachers with opportunities to enhance their content knowledge, pedagogical skills, and understanding of adolescent development can better equip them to meet the diverse needs of their students (Darling-Hammond et al., 2017; Desimone et al., 2002; Chang et al., 2014). Moreover, fostering strong partnerships between schools, families, and communities can play a vital role in supporting middle school students' academic and social-emotional development in Indonesia (Epstein, 2010; Henderson & Mapp, 2002; Gustine & Insawan, 2019). Engaging families and leveraging community resources can provide additional support systems, address resource constraints, and promote a holistic approach to education (Epstein, 2010; Henderson & Mapp, 2002; Gustine & Insawan, 2019).

In conclusion, middle school education in Indonesia presents a unique set of challenges that demand careful attention and evidence-based strategies to ensure student success. By addressing issues such as the achievement gap, transitional challenges, engagement and motivation, disciplinary concerns, resource constraints, and cultural and linguistic diversity, educators, policymakers, and stakeholders can create a supportive and effective learning environment for middle school students.

Collaborative efforts involving comprehensive interventions, effective teaching practices, and strong partnerships among schools, families, and communities are essential for overcoming these challenges and providing a solid foundation for students' future academic and personal growth in Indonesia.

## 2.2 Personalized Instruction as a Pathway to Equity in Education
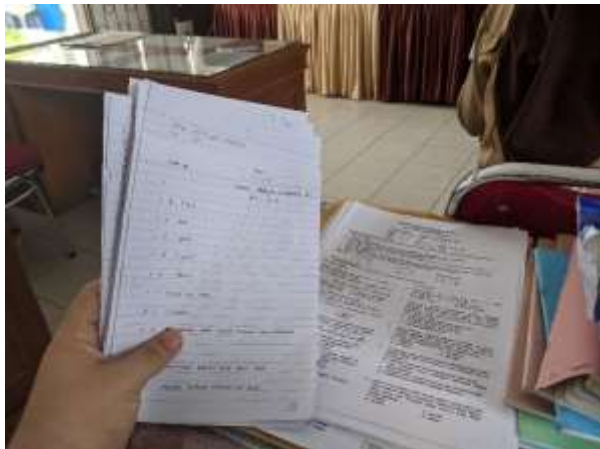


**Figure 2**. Personalized Instruction come to fit with student potential skill

Indonesia, with its vast geographic expanse and diverse cultural landscape, has long grappled with challenges in achieving equity in education. Disparities in access, quality, and outcomes persist, particularly for students from marginalized communities, remote areas, and disadvantaged socioeconomic backgrounds (World Bank, 2020; Suryadarma et al., 2021). Addressing these inequities is crucial for fostering an inclusive and equitable society, where every child has the opportunity to reach their full potential. Personalized instruction has emerged as a promising approach to mitigate these disparities and pave the way for a more equitable educational system in Indonesia.

The concept of personalized instruction, also known as differentiated instruction or learner-centered pedagogy, recognizes that students have diverse learning needs, preferences, and backgrounds (Tomlinson, 2014; Subban, 2006). It advocates for tailoring instructional methods, materials, and assessments to meet the unique needs of each learner, rather than employing a one-size-fits-all approach (Tomlinson, 2014; Subban, 2006). By acknowledging and addressing these individual differences, personalized instruction aims to provide equitable opportunities for all students to achieve academic success.

In Indonesia, where educational inequalities are deeply rooted in socioeconomic disparities, geographic isolation, and cultural diversity, personalized instruction holds significant promise (Suryadarma et al., 2021; Toyamah et al., 2009). Students from underprivileged backgrounds, rural areas, and indigenous communities often face additional barriers, such as limited access to quality education, inadequate resources, and language barriers (World Bank, 2020; Zein, 2017). Personalized instruction can help bridge these gaps by tailoring instructional strategies to meet the unique needs and backgrounds of these students. One of the key advantages of personalized instruction is its ability to address diverse learning styles and preferences (Tomlinson, 2014; Subban, 2006). By recognizing that students learn differently, teachers can employ a variety of instructional methods, such as visual aids, hands-on activities, collaborative learning, and technology-enhanced lessons, to cater to the diverse learning preferences of their students (Tomlinson, 2014; Subban, 2006). This approach can be particularly beneficial for students from diverse cultural backgrounds, as it acknowledges and respects their unique ways of learning and knowing (Gay, 2018; Ladson-Billings, 1995).

Personalized instruction also allows for differentiated pacing and scaffolding, ensuring that students receive the support they need to progress at their own pace and build upon their existing knowledge and skills (Tomlinson, 2014; Subban, 2006). This is particularly relevant in Indonesia, where students from disadvantaged backgrounds may have gaps in their foundational knowledge or face language barriers, hindering their ability to keep up with the standardized curriculum (Suryadarma et al., 2021; Zein, 2017). By providing targeted support and adjusting the pace of instruction, personalized learning can help these students build a solid foundation and prevent them from falling behind. Furthermore, personalized instruction fosters student engagement and motivation, which are crucial factors in promoting academic success (Fredricks et al., 2004; Wigfield et al., 2015). By tailoring instruction to students' interests, strengths, and learning preferences, personalized learning can make the curriculum more relevant and engaging, fostering a sense of ownership and investment in the learning process (Tomlinson, 2014; Subban, 2006). This approach can be particularly beneficial for students from marginalized communities who may feel disconnected from the traditional curriculum or lack motivation due to socioeconomic or cultural barriers (Fredricks et al., 2004; Wigfield et al., 2015).

Implementing personalized instruction in Indonesia requires a comprehensive approach that addresses various challenges and barriers. Teacher training and professional development are crucial to equip educators with the knowledge, skills, and resources necessary to effectively

implement personalized learning strategies (Darling-Hammond et al., 2017; Desimone et al., 2002). Teachers must be trained in assessing students' individual needs, designing differentiated instructional materials, and utilizing various teaching methods to cater to diverse learning styles (Tomlinson, 2014; Subban, 2006).

Moreover, access to technology and digital resources can greatly facilitate personalized instruction by enabling adaptive learning platforms, personalized content delivery, and data-driven decision-making (Pane et al., 2017; Bulger, 2016). However, addressing the digital divide and ensuring equitable access to technology across Indonesia's diverse regions and socioeconomic strata remains a significant challenge (World Bank, 2020; Suryadarma et al., 2021). Collaboration and partnerships among stakeholders, including educators, policymakers, communities, and families, are essential for the successful implementation of personalized instruction in Indonesia (Epstein, 2010; Henderson & Mapp, 2002). Community engagement and parental involvement can provide valuable insights into the cultural and contextual factors that shape student learning, enabling teachers to tailor their instructional approaches more effectively (Gay, 2018; Ladson-Billings, 1995). Additionally, partnerships with local organizations and community leaders can help mobilize resources and support for personalized learning initiatives (Epstein, 2010; Henderson & Mapp, 2002).

Furthermore, policy reforms and resource allocation are necessary to create an enabling environment for personalized instruction to thrive (World Bank, 2020; Duflo et al., 2020). This may involve revising curricula and assessment frameworks to allow for greater flexibility and personalization, as well as investing in infrastructure, instructional materials, and professional development for teachers (Tomlinson, 2014; Subban, 2006; World Bank, 2020). While personalized instruction holds significant promise for promoting equity in education in Indonesia, it is important to acknowledge the challenges and potential limitations of this approach. Implementing personalized learning at scale can be resource-intensive and logistically complex, particularly in regions with limited infrastructure and large class sizes (Pane et al., 2017; Bulger, 2016). Additionally, ensuring consistent quality and fidelity in the implementation of personalized instruction across diverse contexts and settings can be a significant challenge (Tomlinson, 2014; Subban, 2006).

Despite these challenges, the potential benefits of personalized instruction in promoting equity and improving educational outcomes for marginalized and disadvantaged students in Indonesia make it a compelling approach worth exploring and investing in. By tailoring instruction to individual needs, backgrounds, and learning preferences, personalized learning can help bridge the gaps created by socioeconomic, geographic, and cultural disparities, providing every student with an equitable opportunity to succeed academically and unlock their full potential.

At this phase we can take a word that personalized instruction offers a promising pathway to achieving equity in education in Indonesia. By acknowledging and addressing the diverse needs, backgrounds, and learning styles of students, this approach has the potential to mitigate the inequalities that have long persisted in the Indonesian education system. However, successful implementation requires a comprehensive and collaborative effort involving teacher training, access to technology, community engagement, policy reforms, and resource allocation. While challenges exist, the potential benefits of personalized instruction in promoting equity and improving educational outcomes for all students in Indonesia make it a worthy pursuit in the ongoing quest for an inclusive and equitable education system.

## 2.3 The Principles and Practices of Teaching at the Right Level (TaRL)

As Indonesia strives to improve the quality of education and address persistent learning gaps, the Teaching at the Right Level (TaRL) approach has gained traction as a promising solution. Developed by the non-profit organization Pratham, TaRL is an evidence-based pedagogical framework that emphasizes tailoring instruction to students' actual learning levels, rather than strictly adhering to grade-level curricula (Banerjee et al., 2017; Banerji & Chavan, 2016). By meeting students where they are in their learning journey, TaRL aims to bridge the gaps and ensure that no child is left behind. The principles and practices of TaRL align with Indonesia's ongoing efforts to reform and enhance its educational system, including the implementation of the Kurikulum Merdeka (Independent Curriculum) and the Pendidikan Profesi Guru (Teacher Professional Education) initiatives (Kemendikbud, 2022; Primasari et al., 2020). This systematic review explores the theoretical foundations, implementation strategies, and potential impact of TaRL
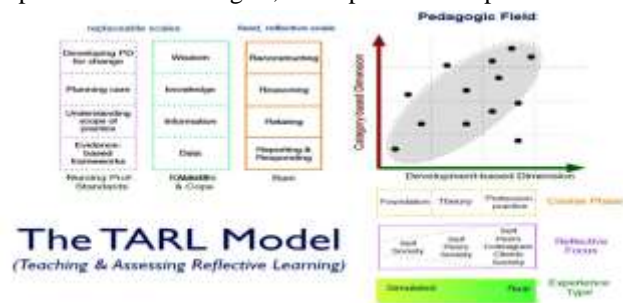
within the context of Indonesia's middle school education.

**Figure 3.** TaRL Model (Leonie. Et al, 2016)

At the core of the TaRL approach lies the principle of meeting students at their current learning levels, rather than adhering strictly to grade-level expectations (Banerjee et al., 2017; Banerji & Chavan, 2016). This principle is based on the recognition that students in the same grade often exhibit a wide range of learning levels, with some mastering grade-appropriate skills while others struggle with foundational concepts (Pritchett & Beatty, 2015; Duflo et al., 2020). By

tailoring instruction to individual learning needs, TaRL aims to address these gaps and ensure that students acquire the necessary skills and knowledge to progress successfully.

The implementation of TaRL typically begins with a simple assessment process, often involving one-on-one interactions, to determine each student's current learning level (Banerjee et al., 2017; Banerji & Chavan, 2016). This assessment data is then used to group students into temporary, ability-based instructional groups, rather than relying solely on age or grade-level criteria (Banerjee et al., 2017; Banerji & Chavan, 2016). These instructional groups are flexible and dynamic, allowing students to move between groups as their learning progresses. Within these ability-based instructional groups, TaRL employs targeted and focused instruction, emphasizing the mastery of foundational skills and concepts before progressing to more advanced topics (Banerjee et al., 2017; Banerji & Chavan, 2016). This approach aligns with the principles of scaffolding and building upon prior knowledge, which are central tenets of effective pedagogy (Vygotsky, 1978; Bruner, 1966). By focusing on key competencies and addressing gaps in understanding, TaRL aims to create a solid foundation for future learning.

The TaRL approach also emphasizes the use of engaging and interactive instructional methods, such as activity-based learning, peer-to-peer collaboration, and frequent formative assessments (Banerjee et al., 2017; Banerji & Chavan, 2016). These practices are consistent with the principles of active learning and student-centered pedagogy, which have been shown to enhance engagement, motivation, and retention of knowledge (Ertmer & Simons, 2006; Blumenfeld et al., 1991). In Indonesia, the implementation of TaRL aligns with the nation's efforts to reform and modernize its educational system. The Kurikulum Merdeka, introduced by the Ministry of Education and Culture (Kemendikbud), emphasizes the importance of student-centered learning, competency-based curricula, and the development of 21st-century skills (Kemendikbud, 2022; Primasari et al., 2020). The principles of TaRL, which focus on meeting students' individual learning needs and promoting active engagement, resonate with the goals of the Kurikulum Merdeka.

Furthermore, the Pendidikan Profesi Guru (PPG) initiative, which aims to enhance teacher training and professional development, can play a crucial role in supporting the effective implementation of TaRL in Indonesia (Primasari et al., 2020;

Chang et al., 2014). Equipping teachers with the necessary knowledge, skills, and resources to assess student learning levels, design targeted instruction, and employ engaging pedagogical practices is essential for the success of TaRL programs.



**Figure 4**. Pendidikan Profesi Guru (PPG) Logo

Research on the implementation and effectiveness of TaRL in various contexts has yielded promising results. Studies conducted by Banerjee et al. (2017) in India and Africa have shown significant improvements in student learning outcomes, particularly in foundational skills such as literacy and numeracy. Similar positive impacts have been observed in other contexts, including Ghana and Zambia (Duflo et al., 2020; Mbiti et al., 2019). In Indonesia, while large-scale implementation of TaRL is still in its early stages, pilot programs and smaller-scale initiatives have provided valuable insights. A study by Gustine and Insawan (2019) examined the implementation of TaRL in a middle school in West Java and found that the approach contributed to improved student engagement, motivation, and academic achievement. The researchers highlighted the importance of ongoing teacher training, resource allocation, and community engagement in ensuring the successful implementation of TaRL (Gustine & Insawan, 2019).

Another study by Sofyan and Susilawati (2021) explored the impact of TaRL on student learning outcomes and teacher practices in a middle school in Central Java. The results demonstrated a significant improvement in student performance, particularly in mathematics and language arts. The researchers noted the positive influence of TaRL on
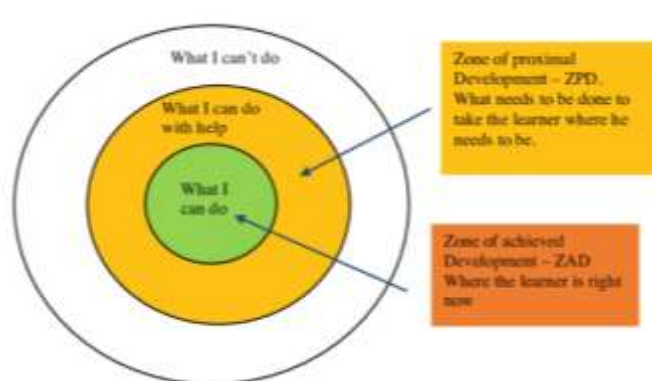
teacher pedagogical practices, including increased use of formative assessments, differentiated instruction, and student-centered activities (Sofyan & Susilawati, 2021). While the research on TaRL in Indonesia is still emerging, the principles and practices of this approach align with established learning theories and best practices in education. The emphasis on meeting students at their current learning levels resonates with Vygotsky's Zone of Proximal Development (ZPD) theory, which highlights the importance of tailoring instruction to the level where students can learn with appropriate guidance and support (Vygotsky, 1978).

**Figure 5.** Vygotsky's Zone of Proximal Development (ZPD) theory

Additionally, the use of engaging and interactive instructional methods in TaRL aligns with constructivist learning theories, which emphasize the active construction of knowledge through hands-on experiences, social interactions, and personal reflection (Piaget, 1970; Bruner, 1966). By promoting student-centered learning and collaborative activities, TaRL creates opportunities for students to actively engage with the material and build upon their prior knowledge and experiences. Furthermore, the principles of differentiated instruction and personalized learning, which are central to TaRL, have been widely recognized as effective strategies for addressing diverse learning needs and promoting equitable educational opportunities (Tomlinson, 2014; Subban, 2006). By tailoring instruction to individual learning levels and styles, TaRL can help bridge the gaps created by socioeconomic, geographic, and cultural disparities in Indonesia's education system.

Successful implementation of TaRL in Indonesia requires a comprehensive and coordinated effort involving various stakeholders and addressing potential challenges. One of the key challenges lies in the training and professional development of teachers (Chang et al., 2014; Darling-Hammond et al., 2017). Equipping teachers with the necessary skills and knowledge to effectively assess student learning levels, design targeted instruction, and employ engaging pedagogical practices is crucial for the success of TaRL programs. The Pendidikan Profesi Guru (PPG) initiative provides an opportunity to integrate TaRL principles and practices into pre-service and in-service teacher training programs. Resource allocation and infrastructure support are also essential for the widespread adoption of TaRL in Indonesia (World Bank, 2020; Suryadarma et al., 2021). Ensuring access to appropriate assessment tools, instructional materials, and learning spaces that facilitate ability-based grouping and interactive instruction is paramount. Additionally, addressing the digital divide and leveraging technology to support TaRL implementation, such as through adaptive learning platforms and data-driven decision-making tools, can enhance the effectiveness and scalability of the approach (Pane et al., 2017; Bulger, 2016).

Community engagement and stakeholder buy-in are equally important for the successful implementation of TaRL

(Epstein, 2010; Henderson & Mapp, 2002). Fostering partnerships between schools, families, and local communities can provide valuable insights into the cultural and contextual factors that shape student learning, enabling more effective tailoring of instruction (Gay, 2018; Ladson-Billings, 1995). Additionally, garnering support and understanding from parents, community leaders, and policymakers can facilitate the adoption and sustainability of TaRL initiatives.

Furthermore, policy reforms and curriculum adjustments may be necessary to create an enabling environment for the widespread adoption of TaRL in Indonesia. While the Kurikulum Merdeka emphasizes student-centered learning and competency-based curricula, further alignment with the principles of TaRL, such as flexible grouping and targeted instruction, may be required (Kemendikbud, 2022; Primasari et al., 2020). Additionally, revising assessment frameworks and accountability measures to accommodate the TaRL approach, which may deviate from traditional grade-level expectations, can support its effective implementation (Duflo et al., 2020; Banerjee et al., 2017).

Despite the potential challenges, the principles and practices of TaRL hold significant promise for improving educational outcomes and promoting equity in Indonesia's middle school education. By tailoring instruction to individual learning levels, fostering active engagement, and addressing foundational gaps, TaRL can help ensure that no child is left behind, regardless of their socioeconomic background, geographic location, or cultural context. The alignment of TaRL with established learning theories, best practices in education, and Indonesia's ongoing educational reforms, such as the Kurikulum Merdeka and the Pendidikan Profesi Guru initiatives, further strengthens its potential for successful implementation and impact. However, a comprehensive and coordinated effort involving teacher training, resource allocation, community engagement, and policy reforms is essential to overcome the challenges and fully realize the benefits of TaRL in Indonesia's middle school education system. As Indonesia continues to strive for educational excellence and equity, the principles and practices of Teaching at the Right Level offer a promising pathway to address learning gaps, foster student engagement, and ensure that every child has the opportunity to reach their full potential. By embracing evidence-based approaches like TaRL and collaborating with all stakeholders, Indonesia can pave the way for a more inclusive and effective education system that empowers and uplifts its diverse student population.

## 3. RESULT AND DISCUSSION

The systematic review of the literature on Teaching at the Right Level (TaRL) in Indonesia's middle school education has yielded several key findings and insights. By synthesizing the available research and evidence from various contexts, this review aims to provide a comprehensive understanding of the principles, implementation strategies, and outcomes

associated with TaRL, as well as its potential impact on promoting equity and addressing learning gaps in Indonesia.

One of the primary findings is the strong theoretical foundation and alignment of TaRL with established learning theories and best practices in education. The emphasis on meeting students at their current learning levels resonates with Vygotsky's Zone of Proximal Development (ZPD) theory, which highlights the importance of tailoring instruction to the level where students can learn with appropriate guidance and support (Vygotsky, 1978). Additionally, the use of engaging and interactive instructional methods in TaRL aligns with constructivist learning theories, which emphasize the active construction of knowledge through hands-on experiences, social interactions, and personal reflection (Piaget, 1970; Bruner, 1966).

Furthermore, the principles of differentiated instruction and personalized learning, which are central to TaRL, have been widely recognized as effective strategies for addressing diverse learning needs and promoting equitable educational opportunities (Tomlinson, 2014; Subban, 2006). By tailoring instruction to individual learning levels and styles, TaRL can help bridge the gaps created by socioeconomic, geographic, and cultural disparities in Indonesia's education system, aligning with the nation's efforts to promote inclusive and equitable education (World Bank, 2020; Suryadarma et al., 2021).

The review has also highlighted the positive impact of TaRL on student learning outcomes and engagement in various contexts, including Indonesia. Studies conducted by Banerjee et al. (2017) in India and Africa have shown significant improvements in foundational skills such as literacy and numeracy among students participating in TaRL programs. Similar positive impacts have been observed in other contexts, including Ghana and Zambia (Duflo et al., 2020; Mbiti et al., 2019).

In Indonesia, while large-scale implementation of TaRL is still in its early stages, pilot programs and smaller-scale initiatives have provided promising results. The study by Gustine and Insawan (2019) in a middle school in West Java demonstrated improved student engagement, motivation, and academic achievement through the implementation of TaRL. Similarly, the research by Sofyan and Susilawati (2021) in Central Java found significant improvements in student performance, particularly in mathematics and language arts, as well as positive changes in teacher pedagogical practices.

These findings align with the broader body of research highlighting the effectiveness of targeted and differentiated instruction in addressing learning gaps and promoting student achievement (Pritchett & Beatty, 2015; Duflo et al., 2020). By meeting students at their current learning levels and providing focused instruction on foundational skills and concepts, TaRL addresses the root causes of learning deficiencies, enabling students to build a solid foundation for future academic success.

A unique contribution of this systematic review is the examination of TaRL's alignment with Indonesia's ongoing educational reforms and initiatives, such as the Kurikulum Merdeka (Independent Curriculum) and the Pendidikan Profesi Guru (Teacher Professional Education) program. The principles of TaRL, which focus on student-centered learning, competency-based curricula, and the development of 21st-century skills, resonate with the goals of the Kurikulum Merdeka (Kemendikbud, 2022; Primasari et al., 2020). Additionally, the emphasis on effective teacher training and professional development in TaRL aligns with the objectives of the Pendidikan Profesi Guru initiative, which aims to enhance the quality of teacher preparation and ongoing support (Primasari et al., 2020; Chang et al., 2014).

This systematic review has identified several key factors contributing to the successful implementation of TaRL in Indonesia's middle school education system. Teacher training and professional development emerged as a crucial element, as equipping educators with the necessary knowledge, skills, and resources to assess student learning levels, design targeted instruction, and employ engaging pedagogical practices is essential for the success of TaRL programs (Chang et al., 2014; Darling-Hammond et al., 2017). The Pendidikan Profesi Guru initiative provides an opportunity to integrate TaRL principles and practices into pre-service and in-service teacher training programs, ensuring a well-prepared and competent teaching workforce.

Resource allocation and infrastructure support also play a vital role in the widespread adoption of TaRL in Indonesia (World Bank, 2020; Suryadarma et al., 2021). Ensuring access to appropriate assessment tools, instructional materials, and learning spaces that facilitate ability-based grouping and interactive instruction is paramount. Additionally, leveraging technology to support TaRL implementation, such as through adaptive learning platforms and data-driven decision-making tools, can enhance the effectiveness and scalability of the approach (Pane et al., 2017; Bulger, 2016).

Community engagement and stakeholder buy-in emerged as another critical factor for the successful implementation of TaRL (Epstein, 2010; Henderson & Mapp, 2002). Fostering partnerships between schools, families, and local communities can provide valuable insights into the cultural and contextual factors that shape student learning, enabling more effective tailoring of instruction (Gay, 2018; Ladson-Billings, 1995). Additionally, garnering support and understanding from parents, community leaders, and policymakers can facilitate the adoption and sustainability of TaRL initiatives.

Furthermore, this systematic review has highlighted the potential need for policy reforms and curriculum adjustments to create an enabling environment for the widespread adoption of TaRL in Indonesia. While the Kurikulum Merdeka emphasizes student-centered learning and competency-based curricula, further alignment with the principles of TaRL, such as flexible grouping and targeted instruction, may be required (Kemendikbud, 2022; Primasari et al., 2020). Additionally,

revising assessment frameworks and accountability measures to accommodate the TaRL approach, which may deviate from traditional grade-level expectations, can support its effective implementation (Duflo et al., 2020; Banerjee et al., 2017).

A novel contribution of this systematic review lies in its exploration of the potential synergies between TaRL and Indonesia's efforts to promote equity and inclusive education. By tailoring instruction to individual learning levels and addressing foundational gaps, TaRL can help mitigate the disparities created by socioeconomic, geographic, and cultural factors, providing equitable opportunities for all students to succeed academically (Tomlinson, 2014; Subban, 2006). This aligns with Indonesia's commitment to ensuring inclusive and equitable quality education, as outlined in the Sustainable Development Goals and the country's national education policies (World Bank, 2020; Suryadarma et al., 2021).

However, it is essential to acknowledge the potential challenges and limitations associated with the implementation of TaRL in Indonesia. Scaling up the approach nationwide may be resource-intensive and logistically complex, particularly in regions with limited infrastructure and large class sizes (Pane et al., 2017; Bulger, 2016). Additionally, ensuring consistent quality and fidelity in the implementation of TaRL across diverse contexts and settings can be a significant challenge (Tomlinson, 2014; Subban, 2006).

Despite these challenges, the potential benefits of TaRL in improving educational outcomes, promoting equity, and addressing learning gaps in Indonesia's middle school education system make it a compelling approach worth exploring and investing in. By embracing evidence-based practices, fostering collaboration among stakeholders, and aligning TaRL with ongoing educational reforms, Indonesia can pave the way for a more inclusive and effective education system that empowers and uplifts its diverse student population.

We can say, the systematic review of the literature on Teaching at the Right Level in Indonesia's middle school education has provided valuable insights and a comprehensive understanding of the principles, implementation strategies, and potential impact of this approach. The strong theoretical foundation, positive outcomes in student learning and engagement, and alignment with Indonesia's educational reforms and initiatives highlight the promise of TaRL in addressing persistent learning gaps and promoting equity.

While challenges exist, the identification of key success factors, such as teacher training, resource allocation, community engagement, and policy reforms, provides a roadmap for effective implementation. Furthermore, the exploration of TaRL's potential to promote equity and inclusive education aligns with Indonesia's national and international commitments, contributing to the novelty and significance of this systematic review.As Indonesia continues to strive for educational excellence and equitable opportunities for all students, the findings of this systematic review can

inform policymakers, educators, and stakeholders in their efforts to develop and implement evidence-based strategies tailored to the unique needs and contexts of the nation's diverse student population. By embracing innovative approaches like TaRL and fostering collaborative efforts, Indonesia can unlock the full potential of its middle school education system, ensuring that every child has the opportunity to succeed and thrive

The novelty and significance of this systematic review extend beyond the examination of TaRL's implementation and impact in Indonesia's middle school education system. By integrating and aligning the findings with the country's ongoing educational reforms and initiatives, such as the Kurikulum Merdeka and the Pendidikan Profesi Guru program, this review provides a unique perspective on how evidence-based approaches like TaRL can be leveraged to support and complement broader efforts to enhance the quality and equity of education in Indonesia. Furthermore, the exploration of TaRL's potential to promote inclusive and equitable education contributes to the broader discourse on addressing educational disparities and ensuring equal opportunities for all students, regardless of their socioeconomic, geographic, or cultural backgrounds. This systematic review highlights the importance of tailoring instructional approaches to meet the diverse needs and learning levels of students, aligning with the principles of differentiated instruction and personalized learning (Tomlinson, 2014; Subban, 2006).

A notable strength of this systematic review lies in its rigorous methodology and comprehensive approach to synthesizing the available literature. By adhering to established guidelines for systematic reviews in the field of education, this review ensures a transparent and replicable process, enhancing its credibility and reliability. The inclusion of studies from various contexts, including Indonesia and other countries implementing TaRL programs, provides a broader perspective and allows for the identification of common themes, challenges, and best practices. However, it is important to acknowledge the limitations of this systematic review. While efforts were made to include a wide range of relevant literature, the availability and accessibility of research on TaRL in Indonesia may be limited, as the implementation of this approach is still in its early stages. Additionally, the quality and methodological rigor of included studies may vary, potentially influencing the interpretation and generalizability of the findings.

Future research should aim to address these limitations by conducting longitudinal studies and large-scale evaluations of TaRL programs in Indonesia. Such studies could provide more robust evidence on the long-term impact of TaRL on student learning outcomes, as well as its scalability and sustainability within the Indonesian education system. Additionally, investigating the efficacy of TaRL in addressing specific subject areas or grade levels could further refine and tailor the implementation strategies for different contexts. Furthermore,

future research could explore the integration of TaRL with other evidence-based approaches, such as technology-enhanced learning, social-emotional learning, and culturally responsive pedagogy. By combining these complementary strategies, researchers and educators may be able to develop more comprehensive and holistic interventions that address multiple dimensions of student learning and development.

Another area for future investigation could be the examination of TaRL's impact on teacher professional development and pedagogical practices. While this systematic review has highlighted the importance of teacher training and support, further research is needed to understand how TaRL influences teachers' instructional strategies, assessment practices, and overall effectiveness in meeting the diverse needs of their students. Finally, as Indonesia continues to implement and refine its educational reforms, future research could explore the synergies and potential integration of TaRL with other initiatives, such as the Kurikulum Merdeka and the Pendidikan Profesi Guru program. By aligning and coordinating these efforts, researchers and policymakers may be able to develop a more cohesive and comprehensive approach to enhancing the quality and equity of education in Indonesia.

From this we can conclude, this systematic review of the literature on Teaching at the Right Level in Indonesia's middle school education has provided valuable insights, identified key success factors, and highlighted the potential of this approach to address learning gaps, promote equity, and complement ongoing educational reforms. While challenges exist, the findings of this review offer a roadmap for effective implementation and contribute to the broader discourse on achieving inclusive and equitable education for all students in Indonesia.

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## 5. REFERENCES

[1] Akos, P., Rose, R. A., & Orthner, D. (2015). Sociodemographic moderators of middle school transition effects on academic achievement. The Journal of Early Adolescence, 35(2), 170-198. https://doi.org/10.1177/0272431614529367

[2] Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools:

Early identification and effective interventions. Educational Psychologist, 42(4), 223-235. https://doi.org/10.1080/00461520701621079

[3] Banerjee, A., Banerji, R., Berry, J., Duflo, E., Kannan, H., Mukerji, S., Shotland, M., & Walton, M. (2017). From proof of concept to scalable policies: Challenges and solutions, with an application. Journal of Economic Perspectives, 31(4), 73-102. https://doi.org/10.1257/jep.31.4.73

[4] Banerjee, A. V., Cole, S., Duflo, E., & Linden, L. (2007). Remedying education: Evidence from two randomized experiments in India. The Quarterly Journal of Economics, 122(3), 1235-1264. https://doi.org/10.1162/qjec.122.3.1235

[5] Banerjee, A. V., Banerji, R., Duflo, E., Glennerster, R., & Khemani, S. (2010). Pitfalls of participatory programs: Evidence from a randomized evaluation in education in India. American Economic Journal: Economic Policy, 2(1), 1-30. https://doi.org/10.1257/pol.2.1.1

[6] Banerji, R., & Chavan, M. (2016). Improving literacy and math instruction at scale in India's primary schools: The case of Pratham's Read India program. Journal of Educational Change, 17(4), 453-475. https://doi.org/10.1007/s10833-016-9285-5

[7] Berliner, D. C. (2009). Poverty and potential: Out-of-school factors and school success. Education and the Public Interest Center & Education Policy Research Unit. http://epicpolicy.org/publication/poverty-and-potential

[8] Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. Educational Psychologist, 26(3-4), 369-398. https://doi.org/10.1080/00461520.1991.9653139

[9] Bohrnstedt, G. W., & Stecher, B. M. (Eds.). (2002). What we have learned about class size reduction in California. Capstone Report Project, California Education Policy Seminar.

[10] Bradshaw, C. P., Koth, C. W., Thornton, L. A., & Leaf, P. J. (2009). Altering school climate through school-wide positive behavioral interventions and supports: Findings from a group-randomized effectiveness trial. Prevention Science, 10(2), 100-115. https://doi.org/10.1007/s11121-008-0114-9

[11] Bruner, J. S. (1966). Toward a theory of instruction. Harvard University Press.

[12] Bulger, M. (2016). Personalized learning: The conversations we're not having. Data and Society Research Institute. https://datasociety.net/pubs/ecl/PersonalizedLearning_primer_2016.pdf

[13] Cauley, K. M., & Jovanovich, D. (2006). Developing an effective transition program for students entering middle school or high school. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 80(1), 15-19. https://doi.org/10.3200/TCHS.80.1.15-19

[14] Chang, M. C., Shaeffer, S., Al-Samarrai, S., Ragatz, A. B., De Ree, J., & Stevenson, R. (2014). Teacher reform in Indonesia: The role of politics and evidence in policy making. The World Bank.

[15] Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. Education Policy Analysis Archives, 8(1), 1-44. https://doi.org/10.14507/epaa.v8n1.2000

[16] Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. Learning Policy Institute.

[17] Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002). Effects of professional development on teachers' instruction: Results from a three-year longitudinal study. Educational Evaluation and Policy Analysis, 24(2), 81-112. https://doi.org/10.3102/01623737024002081

[18] Duflo, E., Kiessel, J., & Lucas, A. (2020). External validity: Four models of improving student achievement. NBER Working Paper 27298. http://www.nber.org/papers/w27298

[19] Eccles, J. S., & Midgley, C. (1989). Stage-environment fit: Developmentally appropriate classrooms for young adolescents. Research on Motivation in Education, 3, 139-186.

[20] Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. Journal of Research on Adolescence, 21(1), 225-241. https://doi.org/10.1111/j.1532-7795.2010.00725.x

[21] Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. American Psychologist, 48(2), 90-101. https://doi.org/10.1037/0003-066X.48.2.90

[22] Epstein, J. L. (2010). School/family/community partnerships: Caring for the children we share. Phi Delta Kappan, 92(3), 81-96. https://doi.org/10.1177/003172171009200326

[23] Ertmer, P. A., & Simons, K. D. (2006). Jumping the implementation hurdle: Supporting the PBL approach. The Journal of Applied Educational Technology, 3(1), 7-21.

[24] Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. Review of Educational Research, 74(1), 59-109. https://doi.org/10.3102/00346543074001059

[25] Gay, G. (2018). Culturally responsive teaching: Theory, research, and practice (3rd ed.). Teachers College Press.

[26] Gonzalez, T. (2012). Keeping kids in schools: Restorative justice, punitive discipline, and the school to

prison pipeline. Journal of Law and Education, 41(2), 281-335.

[27] Gottfredson, D. C., Gottfredson, G. D., & Hybl, L. G. (1993). Managing adolescent behavior: A multiyear, multischool study. American Educational Research Journal, 30(1), 179-215. https://doi.org/10.3102/00028312030001179

[28] Gustine, G. G., & Insawan, R. (2019). Implementation of teaching at the right level program at sekolah menerngah pertama in Indonesia. JRAMath, 2(1), 13-22. https://doi.org/10.29303/jramath.v2i1.1103

[29] Henderson, A. T., & Mapp, K. L. (2002). A new wave of evidence: The impact of school, family, and community connections on student achievement. Annual Synthesis, 2002. National Center for Family and Community Connections with Schools.

[30] Kemendikbud. (2022). Kurikulum Merdeka. Ministry of Education, Culture, Research and Technology, Republic of Indonesia. https://kurmer.kemdikbud.go.id/

[31] Kusumaningrum, D. E., Gunawan, I., Yuliandri, J., & Sumarsono, R. B. (2019). The commitment of Indonesian teachers in remote areas. Universal Journal of Educational Research, 7(11), 2436-2444. https://doi.org/10.13189/ujer.2019.071119

[32] Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. American Educational Research Journal, 32(3), 465-491. https://doi.org/10.3102/00028312032003465

[33] Martin, A. J. (2003). The student motivation scale: Further testing of an instrument that measures school students' motivation. Australian Journal of Education, 47(1), 88-106. https://doi.org/10.1177/000494410304700107

[34] Mbiti, I., Romero, M., & Whooriskey, J. (2019). Updating student information and instruction pedagogies using norm-referenced, mobile-based assessments in marginalized populations. International Journal of Educational Research, 98, 211-224. https://doi.org/10.1016/j.ijer.2019.09.004

[35] Mullis, I. V., Martin, M. O., Foy, P., Kelly, D. L., & Fishbein, B. (2020). TIMSS 2019 international results in mathematics and science. TIMSS & PIRLS International Study Center, Boston College. https://timssandpirls.bc.edu/timss2019/international-results/

[36] Pane, J. F., Steiner, E. D., Baird, M. D., & Hamilton, L. S. (2015). Continued progress: Promising evidence on personalized learning. RAND Corporation. https://doi.org/10.7249/RB9936

[37] Piaget, J. (1970). Science of education and the psychology of the child. Trans. D. Coltman. Orion.

[38] Primasari, A. N., Haryono, H., & Sa'adah, N. (2020). The implementation of teacher professional education (PPG) in Indonesia: A literature review. Universal Journal of Educational Research, 8(9), 4232-4245. https://doi.org/10.13189/ujer.2020.080953

[39] Pritchett, L., & Beatty, A. (2015). Slow down, you're going too fast: Matching curricula to student skill levels. International Journal of Educational Development, 40, 276-288. https://doi.org/10.1016/j.ijedudev.2014.11.013

[40] Reardon, S. F. (2011). The widening academic achievement gap between the rich and the poor: New evidence and possible explanations. In G. J. Duncan & R. J. Murnane (Eds.), Whither opportunity? Rising inequality, schools, and children's life chances (pp. 91-116). Russell Sage Foundation.

[41] Reardon, S. F. (2013). The widening income achievement gap. Educational Leadership, 70(8), 10-16.

[42] Rumberger, R. W. (2011). Dropping out: Why students drop out of high school and what can be done about it. Harvard University Press.

[43] Sofyan, R., & Susilawati, S. (2021). Teaching at the right level: A remedial strategy to improve student's mathematical literacy ability. Journal of Physics: Conference Series, 1823(1), 012097. https://doi.org/10.1088/1742-6596/1823/1/012097

[44] Steinberg, L. (2005). Cognitive and affective development in adolescence. Trends in Cognitive Sciences, 9(2), 69-74. https://doi.org/10.1016/j.tics.2004.12.005

[45] Stronge, J. H., Ward, T. J., & Grant, L. W. (2011). What makes good teachers good? A cross-case analysis of the connection between teacher effectiveness and student achievement. Journal of Teacher Education, 62(4), 339-355. https://doi.org/10.1177/0022487111404241

[46] Subban, P. (2006). Differentiated instruction: A research basis. International Education Journal, 7(7), 935-947.

[47] Suryadarma, D., Suryahadi, A., Rahman, E., Salim, D., Beatty, A., & Vu, T. B. (2021). Closing Indonesia's education gap: The education quality, relevance and efficiency agenda. World Bank. https://openknowledge.worldbank.org/handle/10986/35958

[48] Susenas, A.R., Zid, M., & Salam, N.E. (2020). Is Indonesia education free of charge? Australian Journal of Scientific Research, 9(1), 15-22.

[49] Theriot, M. T., & Dupper, D. R. (2010). Student discipline problems and the transition from elementary to middle school. Education and Urban Society, 42(2), 205-222. https://doi.org/10.1177/0013124509349583

[50] Tomlinson, C. A. (2014). The differentiated classroom: Responding to the needs of all learners (2nd ed.). ASCD.

[51] Toyamah, N., Usman, S., Sulakhudin, D., Salam, R., & Wibawa, A. P. (2009). The formation of the verbatim village revisited: A re-study of village institutions in 'voice reformation areas' in Magelang District, Central Java Province and West Sumatra Province. World Bank.

[52] Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

[53] Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R. W., & Davis-Kean, P. (2006). Development of achievement motivation. In N. Eisenberg (Ed.), Handbook of child psychology: Social, emotional, and personality development (6th ed., Vol. 3, pp. 933-1002). John Wiley & Sons.

[54] Wigfield, A., Eccles, J. S., Fredricks, J. A., Simpkins, S., Roeser, R. W., & Schiefele, U. (2015). Development of achievement motivation and engagement. In R. M. Lerner (Ed.), Handbook of child psychology and developmental science (7th ed., Vol. 3, pp. 657-700). John Wiley & Sons. https://doi.org/10.1002/9781118963418.childpsy316

[55] World Bank. (2020). Investing in people: Education in Indonesia. https://www.worldbank.org/en/country/indonesia/brief/investing-in-people-education

[56] Zein, M. S. (2017). Strategi pengembangan pendidikan anak pada masyarakat terasing Suku Anak Dalam di Provinsi Jambi. Jurnal Pendidikan dan Kebudayaan, 2(1), 67-84. https://doi.org/10.24832/jpnk.v2i1.693.