

# From the Cognitive Stage to the Zone of Proximal Development: A Theoretical Synthesis of Piaget and Vygotsky in the Perspective of Educational Psychology

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## ABSTRACT

The development of 21st-century education demands learning that is not only oriented towards knowledge transfer, but also on the development of higher-order thinking skills integrated with the social dynamics of students. However, in educational psychology studies, cognitive development theory and sociocultural theory are often positioned dichotomously, thus not providing an integrative and operational conceptual framework in learning practice. This study aims to formulate a theoretical synthesis that integrates Jean Piaget's cognitive development perspective and Lev Vygotsky's sociocultural theory into one comprehensive conceptual model. This study uses a qualitative approach with library research. Data were obtained from the primary works of both figures as well as relevant scientific literature analyzed using content analysis and comparative-critical analysis techniques. The results show that the structure of cognitive development functions as an indicator of students' epistemic readiness, while the Zone of Proximal Development (ZPD) acts as an acceleration mechanism through social mediation and adaptive scaffolding. The synthesis of these two theories produces an integrative model of cognitive-social development that is dynamic and cyclical, in which social interactions encourage cognitive restructuring and shape learning readiness at a higher level.

## 1. INTRODUCTION

Developments in 21st-century education present demands for a transformation in learning that is no longer oriented toward the transmission of knowledge but rather toward the development of higher-order thinking skills, collaboration, communication, and metacognitive reflection. The global competency framework emphasizes the importance of learning that is adaptive to cognitive development while also responsive to student's social dynamics (Hamidalloh & Hamdani, 2025). However, educational practices in various contexts still demonstrate a tendency for instruction to inadequately consider the comprehensive dimensions of student's psychological development (Setyawan, 2025). This situation indicates the need to recontextualize classical theories of educational psychology to remain relevant in addressing contemporary challenges. Based on this context, this research specifically focuses on formulating a theoretical synthesis between Jean Piaget's cognitive development theory and Lev Vygotsky's sociocultural theory from an educational psychology perspective. This focus is directed at building a conceptual framework that not only explains cognitive development structurally but also integrates it with the dynamics of social interaction as an accelerating factor in the learning process. In the history of developmental psychology, Jean Piaget's theory of cognitive development made a significant contribution through his systematic concept of stages of intellectual development. Piaget asserted that children's

thinking abilities develop through an active process of constructing their environment, with cognitive structures gradually changing from the sensorimotor stage to the formal operational stage (Pakpahan & Saragih, 2022). The pedagogical implication is the importance of matching learning materials to the readiness of student's cognitive structures. Jean Piaget (1896–1980) was a Swiss psychologist and epistemologist known as a pioneer of the theory of child cognitive development (Ifda, 2015). He was born in Neuchâtel, Switzerland, and from a young age showed a keen interest in biology and the philosophy of science (Islami & Santosa, 2025). Piaget earned a doctorate in biology from the University of Neuchâtel at the age of 22, before shifting to psychology and developing an interest in genetic epistemology, the study of the origins and development of human knowledge (Ifda, 2015). His experience working in Alfred Binet's laboratory in Paris strengthened his interest in how children think, which later became a major focus of his research throughout his academic career in Switzerland and France. Meanwhile, Lev Vygotsky's sociocultural theory places social interaction and language as central factors in cognitive development. The concept of the Zone of Proximal Development (ZPD) suggests that an individual's learning potential can develop optimally through social mediation and scaffolding (Habsy et al., 2024). From this perspective, language is not merely a means of communication, but rather an instrument for the internalization of thought (Etnawati, 2021). Thus, learning is understood as a dialogical process bound to social and cultural contexts. Lev Semyonovich Vygotsky (1896–1934) was a Russian psychologist known as a pioneer of sociocultural theory in cognitive development (Wardani et al., 2023). He was born in Orsha (then part of the Russian Empire) and studied at Moscow State University, with initial interests in law, literature, and philosophy before shifting to psychology (Wardani et al., 2023). Despite his relatively short life, his contributions were profound in understanding the relationship between language, culture, and mental development (Ormrod, 2011). Vygotsky proposed that higher-order mental functions develop through social interaction and are mediated by language as a tool for thinking (Islami & Santosa, 2025).

Although both theories are rooted in the constructivist paradigm, educational psychology literature often positions Piaget and Vygotsky within a dichotomous framework: individual development versus social mediation, internal structure versus external interaction. This oppositional, comparative approach has the potential to oversimplify the complexity of learning development and fails to provide an operational, integrative conceptual model for contemporary learning practices. On the other hand, the needs of 21st-century education demand a synthesis that connects cognitive structural readiness with appropriate social intervention strategies. However, most of these studies still tend to place Piaget's and Vygotsky's theories within separate and dichotomous frameworks, thus failing to produce an integrative and operational conceptual model. A conceptual gap exists in the absence of a theoretical synthesis capable of linking the two perspectives within a single, systematic and applicable framework. Jean Piaget's theory of cognitive development is a key foundation for understanding children's thinking structures (Islami & Santosa, 2025). Piaget (2000) explained that intellectual development proceeds through systematic stages: sensorimotor, preoperational, concrete operational, and formal operational, each characterized by its own specific logical structure (Alahmad, 2020). The processes of assimilation and accommodation are the primary mechanisms in knowledge construction (Habsy et al., 2024). In the educational context, this theory gave rise to the individual constructivist paradigm, which emphasizes the importance of cognitive readiness as a prerequisite for effective learning. Several recent studies have shown that Piaget's principles remain relevant in explaining the development of scientific reasoning, abstraction, and the transition to formal thinking in adolescents (Lourenço, 2016). However, criticisms of Piaget have also emerged, particularly regarding the tendency to universalize developmental stages and the lack of attention to sociocultural influences on cognitive

development (Babakr et al., 2019). Some cross-cultural studies have even shown that variations in social context can accelerate or modify the manifestation of certain developmental stages. On the other hand, the sociocultural theory developed by Lev Vygotsky offers a different perspective, placing social interaction and language as primary determinants of cognitive development (Vygotsky, 1997). The concept of the Zone of Proximal Development (ZPD) explains the gap between an individual's actual abilities and the potential development that can be achieved through social support (Xi & Lantolf, 2020). Language, within this framework, functions as a psychological mediator that enables the internalization of higher-order mental functions (Vygotsky, 1978). According to Lev Vygotsky, language is a psychological tool that transforms basic mental functions into higher-order ones (Vygotsky, 1997). This theory provides a strong foundation for scaffolding practices, collaborative learning, and pedagogical dialogue. Furthermore, within Vygotsky's socio-cultural framework, language is positioned not merely as a medium for external communication but as a semiotic mediation tool that transforms basic mental functions into higher-order ones (Habsy et al., 2024). Through the process of internalization, activities that were initially interpsychological (occurring in social interactions) transform into intrapsychological ones (internalized within the individual's conscious structure) (Masrura et al., 2024). The concept of private speech, or self-speech, is an important indicator that language plays a role in self-regulation and cognitive control, before ultimately developing into inner speech as a form of reflective thinking (Vygotsky, 1978).

Several previous studies have shown that these two perspectives contribute significantly to explaining students' cognitive development. Lourenço (2016), emphasized that Piaget's theory remains relevant in explaining the development of scientific reasoning and abstract thinking skills, although Babakr et al., (2019), criticized the tendency to generalize developmental stages that do not consider social context. On the other hand, Xi & Lantolf (2020), demonstrated that the Zone of Proximal Development (ZPD) concept is effective in optimizing learning potential through scaffolding, while Smagorinsky (2018), emphasized that ZPD-based social interactions can enhance critical thinking skills. Furthermore, Habsy et al., (2024), revealed that Vygotsky's principles of social mediation remain relevant in modern learning, particularly in collaborative and digital contexts. These findings suggest that cognitive development is the result of a complex interaction between internal readiness and the social environment. Interestingly, the educational psychology literature often positions Piaget and Vygotsky within binary oppositions: individual constructivism versus social constructivism, cognitive structure versus cultural mediation, natural development versus facilitated development. This comparative approach tends to result in theoretical fragmentation and makes it difficult for teachers to translate it into coherent learning practices. Yet, epistemologically, both theories are based on the assumption that learners are active subjects in constructing knowledge. Therefore, this research is important because it attempts to fill this gap by formulating a theoretical synthesis model that integrates cognitive readiness as an epistemic basis and social interaction as a mechanism for accelerating development. This research's contribution is not only theoretical in enriching educational psychology studies, but also practical in providing a foundation for developing more adaptive, dialogic, and contextual learning designs. By addressing this gap, it is hoped that the learning process will be more effective in developing higher-order thinking skills that meet the demands of 21st-century education.

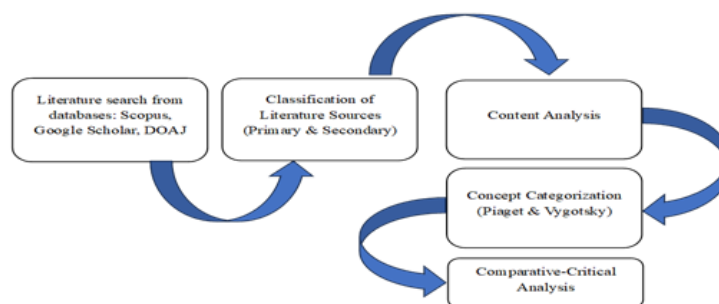
## 2. METHODS

This research falls into the category of library research with a content analysis and comparative-critical analysis approach (Permadi, 2026). The research objects are literature sources consisting of primary and secondary data. Primary sources include Jean Piaget's original work on

cognitive development theory and Lev Vygotsky's work on sociocultural theory and the Zone of Proximal Development. Secondary sources include reputable journal articles, educational psychology books, and recent research relevant to both theories in the context of 21st-century learning. Data collection techniques are carried out through documentation studies by reviewing various academic literature sources obtained from databases such as Elsevier, Scopus, Google Scholar, DOAJ, SINTA, ResearchGate, and Semantic Scholar. The data analysis technique in this study uses content analysis to identify core concepts, epistemological assumptions, and pedagogical implications of each theory. Next, a comparative-critical analysis is used to examine the fundamental similarities and differences between Piaget's individual constructivism and Vygotsky's social constructivism. This analysis also serves as the basis for a theoretical synthesis to integrate the structure of cognitive development with social mediation mechanisms within a coherent educational psychology framework.

**Table 1.** Research Instruments Table

No	Study Focus	Analysis Indicators	Data Sources	Data Collection Techniques	Analysis Techniques
1	Cognitive Development Theory (Piaget)	Stages of Development, Assimilation, Accommodation	Piaget's Books & Original Works	Documentation	Content Analysis
2	Sociocultural Theory (Vygotsky)	ZPD, Scaffolding, Social Interaction	Vygotsky's Books & Original Works	Documentation	Content Analysis
3	Constructivism Concept	Student's Active Role in Learning	Secondary Journals & Books	Documentation	Content Analysis
4	Theoretical Similarities	Similarities in Constructivism Concepts	Secondary Literature	Documentation	Content Analysis
5	Theoretical Differences	Individual vs. Social	Secondary Literature	Documentation	Comparative-Critical Analysis
6	Pedagogical Implications	Relevance in 21st-century learning	Latest journals	Documentation	Content Analysis
7	Theoretical Synthesis	Cognitive and Social Integration	Analysis Results	Documentation	Conceptual Synthesis



**Figure 1.** Flowchart of Research Steps

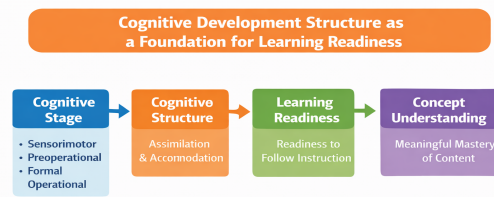
### 3. RESULTS AND DISCUSSION

#### 3.1 Cognitive Development Structure as a Foundation for Learning Readiness

Literature analysis shows that Jean Piaget's theory of cognitive development provides a systematic structural framework for understanding student's readiness to learn. In his theoretical construct, intellectual development is not understood as the accumulation of information, but rather as a gradual process of mental reorganization (Ningrum & Muhid, 2024). Each stage of development represents a distinctive way of thinking and possesses specific logical characteristics. Thus, this theory offers an epistemological map of how individuals construct and construct knowledge. Piaget positions individuals as active subjects who continuously interact with their environment through the mechanisms of assimilation and accommodation (Mubarak, 2025). Assimilation allows individuals to incorporate new experiences into existing cognitive structures, while accommodation requires adjustments to these structures when new experiences no longer fit with previous schemas (Ifda, 2015). This process creates a balance (equilibration) that drives intellectual development. From this perspective, learning is part of the dynamics of development itself. The formulated developmental stages, from sensorimotor to formal operational, do not merely indicate an increase in quantitative capacity, but rather a qualitative transformation in thinking. The shift from concrete to abstract thinking, from intuition to systematic logic, marks a fundamental shift in mental structure. This means that reasoning ability does not grow linearly, but undergoes a structural leap that fundamentally alters individual reasoning patterns. In the context of educational psychology, this developmental structure serves as an epistemic indicator that determines a student's readiness to receive and process learning materials. The ability to understand abstract concepts, think hypothetically, and conduct deductive reasoning is highly dependent on the developmental stage reached. Therefore, learning design should ideally consider the match between the complexity of the material and the student's cognitive readiness.

An important implication of this finding is that learning cannot be separated from the principle of developmental readiness. When material exceeds the capacity of the actual thinking structure, learning risks resulting in verbal memorization without deep conceptual understanding. The phenomenon of verbalism often arises not due to a lack of student effort, but rather due to a mismatch between cognitive demands and developmental stage. This is where the relevance of the principle of developmentally appropriate practice gains a strong theoretical foundation (Mubarak, 2025). From a Piagetian perspective, cognitive structures serve as the actual limits of abilities that serve as the starting point for pedagogical interventions (Nuralimah et al., 2025). Teachers need to map student's developmental status before determining learning strategies (Lourenço, 2016). Thus, educational interventions are not speculative, but based on a conceptually measurable analysis of epistemic readiness. However, critical analysis shows that Piaget's approach tends to emphasize internal structural dimensions and pays relatively little attention to variations in social contexts. The assumption of the universality of developmental stages is often viewed as too general, especially when faced with the reality of cultural differences, learning environments, and the quality of pedagogical interactions. This raises questions about the extent to which cognitive structures are truly independent of social influences. A number of contemporary studies indicate that accelerated cognitive development can occur through rich environmental stimulation and intensive pedagogical interactions. Certain social conditions can expand student's thinking capacities beyond the predictions of rigid developmental stages. These findings indicate that cognitive structures possess a certain degree of elasticity and are not entirely deterministic. In the context of modern educational psychology, developmental structures therefore need to be understood as dynamic systems open to intervention (Bimo, 2004). Piaget's theory is no longer

read as a rigid limitation on learning, but rather as a foundation for epistemic readiness that requires external reinforcement. It is at this point that dialogue with a sociocultural perspective becomes relevant, as it allows for a more comprehensive integration of internal readiness and social mediation to explain the dynamics of learning development.



**Figure 2.** The Structure of Cognitive Development as the Basis of Learning Readiness

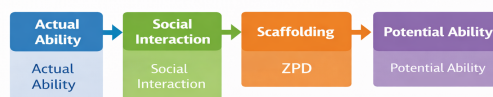
Figure 2. shows that students' cognitive development proceeds through a systematic process, starting with cognitive stages that shape thought structures, then determining the level of learning readiness, and ultimately leading to meaningful conceptual understanding. Each stage is linearly and causally interconnected, with the thought structures formed through assimilation and accommodation becoming the primary basis for receiving and processing new information.

### 3.2 Social Media as a Development Accelerator

In contrast to the structural approach formulated by Jean Piaget, the socio-cultural theory developed by Lev Vygotsky places social interaction as the primary foundation of cognitive development (Habsy et al., 2024). While Piaget emphasized internal construction through developmental stages, Vygotsky instead viewed social dynamics as the source of higher-order mental functions (Etnawati, 2021). Within this framework, individuals do not develop in isolation, but rather through a dialogical relationship with their social environment. A central concept that underpins this position is the Zone of Proximal Development (ZPD), which is the distance between actual abilities that can be achieved independently and the potential development that can be achieved with the assistance of more competent parties (Tarsono et al., 2026). The ZPD shifts the perspective on learning: development is not simply a prerequisite for learning but can be encouraged and accelerated by the learning process itself (Xi & Lantolf, 2020). Thus, learning precedes development in a sense, as pedagogical interactions can open up new possibilities within an individual's thought structure. Literature analysis shows that social media functions as an accelerator of cognitive restructuring (Puntambekar, 2022). Assistance provided by teachers or peers through scaffolding practices enables learners to complete tasks previously beyond their actual capacity (Van de Pol et al., 2010). This process is not simply technical assistance, but rather the formation of new ways of thinking that are then internalized into independent abilities. Language plays a central role in this mechanism (Tarsono et al., 2026). Dialogue, negotiation of meaning, and the use of linguistic symbols serve not only as communication tools but also as tools for thinking (Astuti & Triani, 2024). Through verbal interaction, learners organize experiences, reflect on strategies, and construct concepts collaboratively (Hanita, 2025). At a certain stage, external dialogue transforms into inner speech, which forms the basis for self-regulation and reflective awareness. Thus, cognitive development is understood as the result of a dialectical interaction between the individual and their socio-cultural environment (Qiptiyah, 2024). Mental structures do not emerge spontaneously from biological maturity, but are formed through meaningful social practices. This perspective broadens the horizons of educational psychology by positioning the classroom as a space for epistemic interaction, not simply a space for transmitting information. The stages of language development encompass three aspects. First, social speech, which is the language children use to interact with others and serves a communicative function

(Wardani et al., 2023). Second, private speech, which is self-talk spoken openly to direct actions and regulate behavior (Hanita, 2025). Third, inner speech, which is language that has been internalized into inner dialogue and functions as a tool for thinking (Tarsono et al., 2026). These three stages demonstrate that language develops from a social function to an internal cognitive function.

In educational practice, Vygotsky's approach provides theoretical legitimacy for collaborative learning, reflective discussion, problem-based learning, and other cooperative learning strategies (Vygotsky, 1978). The learning paradigm shifts from a teacher-centered model to dialogic learning, which emphasizes active participation and the exchange of ideas. Teachers act as mediators who design meaningful interactions to expand student's ZPD (Xi & Lantolf, 2020). However, the effectiveness of social interventions remains dependent on the readiness of the learner's cognitive structure. Assistance that exceeds actual capacity has the potential to lead to confusion, dependency, or pseudo-learning. Without initial capacity mapping, scaffolding can lose its transformational function and become merely a technical procedure with no structural impact. Critics of Vygotsky's approach also highlight the lack of systematic elaboration on the stages of internal development. Unlike the Piagetian framework, which provides a relatively clear, gradual structure, sociocultural theory focuses more on the dynamics of interactions than on the mental structures themselves (Islami & Santosa, 2025). Consequently, the realistic limits of pedagogical interventions are sometimes difficult to define with conceptual precision. Therefore, although this theory excels in explaining the social dimensions of learning, it requires conceptual dialogue with structural developmental theory. The analysis shows that social mediation cannot stand alone as a foundation for development. It functions optimally when synergized with an understanding of individual cognitive readiness, so that pedagogical interventions are adaptive, proportionate, and sustainably transformative.



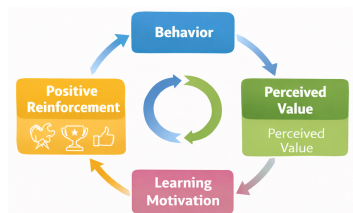
**Figure 3.** The Role of ZPD and Scaffolding in Cognitive Acceleration

Figure 3. illustrates that the Zone of Proximal Development (ZPD) and scaffolding function as key mechanisms in accelerating learners' cognitive development through social interaction. The model shows that learning begins from the learner's actual ability, which is then expanded through guided interaction with more knowledgeable others. Through scaffolding, learners receive structured support that enables them to perform tasks within their ZPD, bridging the gap between what they can do independently and what they can achieve with assistance. As a result, learners are able to reach a higher level of potential ability, demonstrating that cognitive development is not solely determined by internal readiness but can be actively enhanced through social mediation.

### 3.3 Epistemological Relations: Individual and Social as Complementary Dimensions

The comparative findings in this study indicate that the opposition between individual constructivism and social constructivism tends to be reductionistic when viewed from an integrative educational psychology perspective (Nyikos & Hashimoto, 1997). An overly strict separation between internal and external dimensions actually simplifies the complexity of the learning process. In reality, cognitive development always involves interactions between an individual's mental structures and the surrounding social dynamics (Nyikos & Hashimoto, 1997). Both Jean Piaget and Lev Vygotsky positioned learners as active subjects in the construction

of knowledge (Pakpahan & Saragih, 2022). Both rejected the transmissive view, which views learning as a passive process of receiving information. The difference between the two lies in their epistemological emphasis: Piaget emphasized the formation and reorganization of internal structures, while Vygotsky emphasized the role of social mediation in facilitating this transformation (Alahmad, 2020). Philosophically, both theories share the constructivist assumption that knowledge is constructed through interaction with the environment. Internal cognitive structures provide a logical framework for understanding experience, while social interactions provide a dialogical context that enriches and challenges those structures. Thus, the learning process cannot be understood as a purely individual or purely social activity, but rather as a dialectical process that unites the two. In further analysis, the relationship between these two approaches can be understood as a foundational and accelerative relationship. Cognitive structures serve as foundations that determine the actual limits of thinking capabilities (Babakr et al., 2019). Meanwhile, social mediation functions as an accelerator that expands those limits through scaffolding, dialogue, and collaboration (Puntambekar, 2022). Without structural foundations, social acceleration has the potential to be unstable; conversely, without social acceleration, structural development can proceed more slowly and suboptimally. This integrative approach avoids the binary dichotomy often present in theoretical discourse. Rather than choosing one perspective as superior, epistemological synthesis opens up space to understand both as complementary dimensions. Internal structures and external mediation are not opposing entities, but two facets of the same developmental process. Within the framework of educational psychology, this complementary understanding provides a more comprehensive theoretical basis for designing adaptive and collaborative learning (Setyawan, 2025). Teachers not only consider student's cognitive readiness but also consciously design social interactions that expand developmental potential (Nyikos & Hashimoto, 1997). Thus, learning design becomes more responsive to individual needs while harnessing the power of social dynamics as a driver of intellectual transformation.



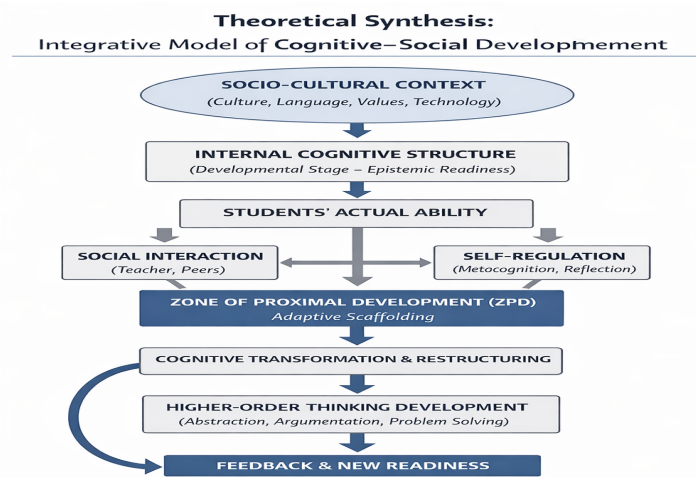
**Figure 4.** The Dialectical Relationship

Figure 4. illustrates the dialectical relationship between individual cognitive structures and social interaction in the process of knowledge construction. Rather than functioning as separate or opposing dimensions, cognitive development emerges from the continuous interplay between internal mental structures and external social mediation. Cognitive structures provide the epistemic foundation that shapes how learners interpret and organize information, while social interaction acts as a dynamic force that challenges, enriches, and transforms these structures through dialogue and collaboration.

### **3.4 Theoretical Synthesis: An Integrative Model of Social Cognitive Development**

Based on the conceptual analysis conducted, this article formulates a theoretical synthesis that positions cognitive developmental stages as indicators of student's epistemic readiness, while the Zone of Proximal Development (ZPD) is positioned as a strategic pedagogical acceleration mechanism. Developmental stages are not understood simply as age classifications or structural

labels, but rather as markers of actual logical capacity that determine how students process, organize, and reflect on information. Furthermore, the ZPD provides a space for intervention that allows cognitive potential to develop beyond actual limits through targeted social support. This synthesis emphasizes that effective learning must begin with mapping student's actual thinking structures, followed by adaptive, proportionate, and contextual social interventions to ensure optimal cognitive transformation. The formulated integrative model is dynamic and cyclical, not static or linear. Social interventions through scaffolding practices not only assist in completing short-term tasks but also encourage deeper cognitive restructuring (Kuncoro & Turahmat, 2025). This restructuring then forms new readiness at a higher level, which then serves as the foundation for subsequent learning processes. Learning development reflects a reciprocal relationship between the internalization process, namely the transformation of external assistance into internal competencies, and the externalization process, namely the expression of new abilities in a broader social context. This cyclical pattern demonstrates that development is a progressive process that continues to move through interactions between individuals and their environments. Within this integrative framework, self-regulation and metacognition serve as conceptual bridges between the internal and external dimensions of development (Putri et al., 2023). Internality provides a logical foundation in the form of a relatively stable structure of thinking, while externality presents stimuli, challenges, and dialogue that trigger transformation. The integration of the two results in the development of higher-order thinking, such as analytical, reflective, and problem-solving skills relevant to the demands of 21st-century learning. The novelty of this synthesis lies in placing both theories within a single, operational, systemic framework for educational psychology. This article goes beyond descriptive comparison but instead reconstructs their epistemological relationship as a complementary, applicable developmental model that can serve as a basis for designing adaptive and collaborative learning.



**Figure 5.** Synthesis of the Integrative Model of Piaget & Vygotsky's Theory

Figure 5. illustrates that student's cognitive development is an integrative process that begins with the socio-cultural context as the macro environment, then moves toward an internal cognitive structure that represents student's epistemic readiness. From actual abilities possessed, the learning process does not stop at independent capacity, but develops through social interactions (with teachers and peers) and metacognition-based self-regulation. Both act as mediating mechanisms that lead students into the Zone of Proximal Development (ZPD), a transitional space where adaptive scaffolding occurs. Through this process, cognitive transformation and restructuring occur, resulting in the development of higher-order thinking, such as abstraction and problem-solving abilities. This cycle is dynamic because new developments will shape subsequent

readiness, so that the learning process is continuous and reflective. From the data presented above, it can be concluded that the synthesis of cognitive development theory and sociocultural theory produces an integrative model that is dynamic and cyclical. This model demonstrates that cognitive readiness and social interaction are two primary components that simultaneously shape the development of higher-order thinking.

#### 4. CONCLUSION

This research confirms that student's cognitive development is an integrative, contextual, and dynamic process, not solely the result of biological maturity or natural internal growth. Intellectual development does not occur in a vacuum, but is always embedded within a web of social, cultural, and pedagogical interactions that shape the direction and quality of its transformation. The theoretical synthesis formulated in this study demonstrates that internal cognitive structures, as a representation of student's epistemic readiness, only gain optimal meaning when coupled with directed and meaningful social interactions, particularly within the Zone of Proximal Development (ZPD). It is within this space that student's latent potential can be actualized through proportionate and adaptive support. Therefore, the development of higher-order thinking is not the result of an automatic, linear process, but rather is formed through a continuous dialectic between internal structural readiness and consciously designed pedagogical mediation. The Integrative Model of Social Cognitive Development developed in this research demonstrates that social interaction, adaptive scaffolding, and metacognition-based self-regulation are key mechanisms in fostering ongoing cognitive transformation and restructuring. Social interaction provides a dialogic space that stimulates productive cognitive conflict, while scaffolding allows learners to gradually transcend their actual capabilities. At the same time, self-regulation serves as an internalization process that transforms external assistance into independent competence. The conceptual contribution of this research lies in integrating the perspectives of cognitive development and social constructivism into a single, operational, systematic, and cyclical framework. This framework explains the reciprocal relationship between the socio-cultural context, learning design, classroom interaction dynamics, and the enhancement of higher-order thinking capacity as a result of progressive structural transformation. Implicationally, the findings of this research call for a paradigm shift in learning design, from a knowledge-transmission approach oriented toward delivering material to a reflective, dialogical, and contextual epistemic mediation approach. Teachers are no longer positioned as information centers, but rather as facilitators and mediators who strategically manage the dynamics of social interactions and provide planned scaffolding in accordance with student's developmental readiness. Learning is designed not only to achieve curricular targets but also to orchestrate a conscious and gradual process of cognitive restructuring. In the future, this model requires broader empirical testing through quantitative and mixed-method approaches so that its validity and effectiveness can be measured more objectively and can be adapted to various levels and diverse educational contexts.

#### 5. REFERENCES

- Alahmad, M. (2020). Strengths and Weaknesses of Cognitive Theory. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 3(3), 1584–1593. <https://doi.org/10.33258/birci.v3i3.1088>
- Astuti, W., & Triani, L. (2024). Peran Pendidikan Anak Usia Dini Dalam Menunjang Perkembangan Kognitif Dan Sosial Anak. *Early Childhood Education and Development Studies (ECEDS)*, 5(2), 36–47. <https://ejurnal.undana.ac.id/index.php/eeds/article/view/18733>

- Babakr, Z. H., Mohamedamin, P., & Kakamad, K. (2019). Piaget's Cognitive Developmental Theory: Critical Review. *Education Quarterly Reviews*, 2(3), 517–524. <https://doi.org/10.31014/aior.1993.02.03.84>
- Bimo, W. (2004). *Pengantar Psikologi Umum* (IV). Audi.
- Etnawati, S. (2021). Implementasi Teori Vygotsky Terhadap Perkembangan Bahasa Anak Usia Dini. *Jurnal Pendidikan*, 22(2), 130–138. <https://doi.org/10.52850/jpn.v22i2.3824>
- Habsy, B. A., Lestari, P. D., Maulidynan, D. A., & Karim, N. A. (2024). Integrasi Teori Perkembangan Kognitif Jeanpiaget Dan Perkembangan Bahasa Vygotsky Dalam Pembelajaran: Pemahaman Dan Penerapan Di Sekolah. *TSAQOFAH : Jurnal Penelitian Guru Indonesia*, 4(2), 735–750. <https://doi.org/https://doi.org/10.58578/tsaqofah.v4i2.2357>
- Hamidalloh, A. S., & Hamdani, A. S. (2025). Kurikulum PAI Abad 21 : Integrasi Nilai Islam Dan Literasi Digital Dalam Pembentukan Karakter Siswa. *at-Tarbiyah al-Mustamirrah: Jurnal Pendidikan Islam*, 6(2), 110–124. <https://doi.org/https://doi.org/10.31958/atjpi.v6i2.16491>
- Hanita, H. (2025). Bahasa dan budaya dalam pendidikan anak: Analisis perspektif teori sosiokultural Vygotsky. *Jurnal Warna : Pendidikan dan Pembelajaran Anak Usia Dini*, 10(2), 112–124. <https://doi.org/10.24903/jw.v10i2.2158>
- Ifda, F. (2015). Perkembangan Kognitif: Teori Jean Piaget. *Intelektualita*, 3(1), 27–38. <https://media.neliti.com/media/publications/242904-perkembangan-kognitif-teori-jean-piaget-48e0bd89.pdf>
- Islami, M. A. A. Al, & Santosa, S. (2025). Memahami perkembangan kognitif anak pandangan piaget, vygotsky, serta relevansi dalam pandangan al- qur'an. *AL-AFKAR: Journal for Islamic Studies*, 8(2), 105–128. <https://doi.org/10.31943/afkarjournal.v8i2.1387>. Understanding
- Kuncoro, C. A. M., & Turahmat, T. (2025). Strategi Scaffolding pada Zone of Proximal Development (ZPD) dalam Pembelajaran Teks Cerpen Berlatar Sejarah Kelas XI SMA Islam Sultan Agung 3 Semarang. *DEIKTIS: Jurnal Pendidikan Bahasa dan Sastra*, 5(2), 1049–1061. <https://doi.org/10.53769/deiktis.v5i2.1403>
- Lourenço, O. M. (2016). Developmental stages, Piagetian stages in particular: A critical review. *New Ideas in Psychology*, 40, 123–137. <https://doi.org/https://doi.org/10.1016/j.newideapsych.2015.08.002>
- Masrura, D., Setiyawan, A., & Bangun, K. (2024). Pengkajian Pengembangan Bahasa Anak Dengan Pendekatan Teori Vygotsky Dan Implikasinya Dalam Pembelajaran Bahasa Arab. *RAUDHAH Proud To Be Professionals Jurnal Tarbiyah Islamiyah*, 9(2), 313–325. <https://ejournal.stairu.ac.id/index.php/raudhah/article/view/674>
- Mubarak, H. (2025). Cognitive Developmental Jean Piaget dalam Pembelajarannya. *Al-Madrasah: Jurnal Pendidikan Madrasah Ibtidaiyah*, 9(2), 703–715. <https://doi.org/http://dx.doi.org/10.35931/am.v9i2.4383>
- Ningrum, W. M. J., & Muhid, A. (2024). Perkembangan Kognitif Anak Dalam Menghafal Al-Qur'an Prespektif Jean Piaget. *Jurnal Mu'allim*, 6(2), 395–402. <https://jurnal.yudharta.ac.id/v2/index.php/muallim>
- Nuralimah, S., Alamsyah, M. N., & Ningsih, N. W. (2025). Strategi Integratif Pendekatan Psikologis dan Pendidikan Islam dalam Membentuk Karakter Generasi Alpha. *Jurnal QOSIM Jurnal Pendidikan Sosial & Humaniora*, 3(2), 626–643. <https://doi.org/10.61104/jq.v3i2.1027>
- Nyikos, M., & Hashimoto, R. (1997). Constructivist Theory Applied to Collaborative Learning in Teacher Education: In Search of ZPD. *The Modern Language Journal*, 81(4), 506–517. <https://doi.org/https://doi.org/10.1111/j.1540-4781.1997.tb05518.x>

- Ormrod, J. E. (2011). *Educational Psychology: Developing Learners* (7 ed.). Pearson.
- Pakpahan, F. H., & Saragih, M. (2022). Theory Of Cognitive Development By Jean Piaget. *Journal of Applied Linguistics*, 2(2), 55–60. <https://doi.org/10.52622/joal.v2i2.79>
- Permadi, M. S. S. (2026). The Concept of Learning Ethos in the Book Bidayatul Hidayah: Al Ghazali's Epistemological Perspective and Its Relevance to Character Education. *At-Turats*, 20(1), 44–57. <https://doi.org/https://doi.org/10.24260/at-turats.v20i1.5463>
- Puntambekar, S. (2022). Distributed Scaffolding: Scaffolding Students in Classroom Environments. *Educational Psychology Review*, 34(1), 451–472. <https://doi.org/10.1007/s10648-021-09636-3>
- Putri, R. M., Wisma, N., Rozzaqyah, F., Ar, S., Ikbal, M., & Muti'ah, A. (2023). Skala Regulasi Emosi: Analisis Reliabilitas Dan Validitas Konstruk melalui Pendekatan Confirmatory Factor Analysis (CFA). *Jurnal EDUCATIO: Jurnal Pendidikan Indonesia*, 9(2), 1014. <https://doi.org/10.29210/1202323376>
- Qiptiyah, T. M. (2024). Teori Perkembangan Kognitif Anak (Vygotsky). *CHILDHOOD EDUCATION: Jurnal Pendidikan Anak Usia Dini*, 5(1), 204–220. <https://doi.org/https://doi.org/10.53515/cej.v5i1.5894>
- Setyawan, D. (2025). Membangun Generasi Emas: Peran Pendidikan Dalam Membentuk Masa Depan Bangsa. *Jurnal Pembelajaran, Kurikulum dan Teknologi Pendidikan*, 1(1), 1–9. <https://artmediapub.id/index.php/JPKTP>
- Smagorinsky, P. (2018). Deconflating the ZPD and instructional scaffolding: Retranslating and reconceiving the zone of proximal development as the zone of next development. *Learning, Culture and Social Interaction*, 16, 70–75. <https://doi.org/https://doi.org/10.1016/j.lcsi.2017.10.009>
- Tarsono, Astuti, H., Muttaqin, V. P., Fathimah, N. S., & Nurdiansyah, A. (2026). Integrasi Teori Belajar Konstruktivisme dan Teori Perkembangan Sosial Vygotsky dalam Merancang Pembelajaran Adaptif di Era Digital. *Jurnal Mu'allim*, 8(1), 207–218. <https://jurnal.yudharta.ac.id/v2/index.php/muallim>
- Van de Pol, J., Volman, M., & Beishuizen, J. (2010). Scaffolding in teacher-student interaction: A decade of research. *Educational Psychology Review*, 22(3), 271–296. <https://doi.org/10.1007/s10648-010-9127-6>
- Vygotsky, L. S. (1978). *Mind in Society of Higher Psychological Processes*. 1–21. <https://autismusberatung.info/wp-content/uploads/2023/09/Vygotsky-Mind-in-society.pdf>
- Vygotsky, L. S. (1997). Educational Psychology. In *The ECPH Encyclopedia of Psychology* (1 ed.). CRC Press. [https://doi.org/10.1007/978-981-97-7874-4\\_1080](https://doi.org/10.1007/978-981-97-7874-4_1080)
- Wardani, I. R. W., Putri Zuani, M. I., & Kholis, N. (2023). Teori Belajar Perkembangan Kognitiv Lev Vygotsky dan Implikasinya dalam Pembelajaran. *DIMAR: Jurnal Pendidikan Islam*, 4(2), 332–346. <https://doi.org/10.58577/dimar.v4i2.92>
- Xi, J., & Lantolf, J. P. (2020). Scaffolding and the zone of proximal development: A problematic relationship. *Journal for the Theory of Social Behaviour*, 51(1), 1–24. <https://doi.org/10.1111/jtsb.12260>