
Aligning Cognitive Development Theory with Whole Language Teaching in Elementary Education: Strategies and Activities for Enhancing Language Learning

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Received: 17 June 2024

Accepted: 03 September 2024

Published: 18 October 2024

Abstract: *This paper explores the role of whole language teaching in addressing the developmental needs of young learners by emphasizing natural, holistic approaches to language acquisition. Drawing on Piaget's cognitive development theory, the study examines how educators can adapt instructional strategies to align with students' cognitive abilities, fostering both linguistic proficiency and cognitive growth. The integration of technology in language instruction is highlighted as a key trend, providing interactive platforms and digital tools that enhance learning. Additionally, the importance of developing critical thinking, collaboration, and communication skills is discussed in the context of preparing students for the demands of the 21st century. Recommendations for teacher training programs are proposed, focusing on incorporating whole language principles, Piagetian approaches, and effective technology use. Curriculum development that aligns with developmental psychology is presented as a strategy for creating integrated language learning experiences that promote academic success and personal growth.*

Keywords: *Whole Language Teaching, Cognitive Development, Piagetian Approaches, Technology Integration Critical Thinking.*

1. INTRODUCTION

Language showing up in direct readiness plays a focal work in outlining a young person's etymological and smart cutoff points. The point of view, methodologies, and edifying strategy utilized during this stage pick the youth's capacity to give as well as their generally instructive execution and social assistance (Yang et al., 2021). Clear learning, typically covering the fundamental stretches of formal preparation, acquaints youthful students with the vagabond bits of a language, including seeing, making, talking, and tuning in. This stage is major



considering the way that language limit stays aware of basically every other scholarly discipline, from numerical clarification settling to figuring out reasonable contemplations.

In direct accessibility, language educating can be allotted into two general portrayals: first-language (L1) heading and second-language (L2) or dull tongue course. In different mentoring structures, the essential spotlight is on showing the key language, regularly the language gave at home or the power language of the country (Fenanlampir et al., 2021; Hailikari et al., 2022). Regardless, as globalization keeps on impacting school systems, there has been a making supplement on bilingual or multilingual planning, where understudies are have some knowledge of extra lingos at an early age.

In grade school, first-language learning as routinely as potential bases on making central limit limits. Educators mean to equip understudies with the capacity to look at and make heads or tails of texts, as well as expressive their contemplations clearly recorded as a printed duplicate. Oral social endpoints are other than underlined, as understudies are urged to participate in class conversations, sort out a few troublesome issues, and present their evaluations (Blake & Pope, 2008; Cindrić et al., 2024; Erath et al., 2021; Nurhasnah et al., 2024). This improvement of breaking point and social limits is essential for an understudy's scholastic achievement, as language is the key medium through which learning in different subjects happens.

Educators in clear strategy utilize different systems to besides develop first-language getting, including phonics (showing kids the relationship among sounds and letters), portraying, looking at so anyone could hear, and shrewd exercises that draw in understudies in enormous language use (Hiver et al., 2022; Lynette Allers & Singh, 2021). The instructive program is a tremendous piece of the time made around reasonable units, where language limits are solidified with other substance locales like science, social assessments, and math.

Second-language learning has changed into a focal piece of direct readiness in different nations. Early responsiveness to a following language, particularly during the early phases, is viewed as a structure for making bilingualism or multilingualism. The techniques used to show a second language to youthful students change from those utilized in grown-up language planning. In essential training, language gaining will, generally speaking, more standard and clear, constantly cementing tunes, games, and other luxurious exercises that combine efforts with youngsters' benefit and creative mind (Cindrić et al., 2024; Fenanlampir et al., 2021; Hailikari et al., 2022; Yang et al., 2021).

Speculations, for example, the Key Time period Theory suggest that there is an ideal window for getting a following language, with extra excited students showing all the more clear straightforwardness in making close by like limit. In that end, many schools join second-language learning when kindergarten or 1st grade, seeing the mental, social, and social advantages of multilingualism (Cindrić et al., 2024; Fenanlampir et al., 2021; Hailikari et al., 2022; Yang et al., 2021).

The most fundamental explanation behind focusing in on language procurement in youth coaching is the chance of the huge time frame for language learning. This period, now and again saw to occur until around pubescence, is where the cerebrum is for the most part open to acquiring language regularly and with irrelevant exertion. Small kids can change language plans and language more effectively than extra carefully planned students, especially when they are consumed a climate where the language is truly utilized.



During this time, youngsters' minds are astoundingly plastic, meaning they can change and overhaul considering new etymological lifts. This flexibility awards searing students to get their most fundamental language as well as extra vernaculars with close region shared quality. It is during this stage that youngsters are overall gifted at getting talk, sentence structure rules, and the demeanor of a language, which turns out to be dependably dangerous as they become more settled (Erath et al., 2021; Fenanlampir et al., 2021; Lynette Allers & Singh, 2021; Nurhasnah et al., 2024).

2. RELATED WORKS

Language procurement in the early years is positively connected with mental new turn of events. As youngsters get to know a language, they similarly invigorate canny cutoff points, for example, memory, thought, decisive thinking, and unequivocal reasoning. Language fills in as a contraption for coordinating contemplations and conveying thoughts, and the most widely seen technique for overseeing learning language itself upholds mental prospering in more than one way.

Research has shown that youngsters who gain language rapidly show better trailblazer limit limits, which solidify the capacity to control motivations, switch among attempts, and hold data. These limits are integral for shrewd accomplishment too concerning dissecting social worked with attempts and standard unequivocal thinking (Erath et al., 2021; Fenanlampir et al., 2021; Lynette Allers & Singh, 2021; Nurhasnah et al., 2024).

Additionally, bilingualism has been found to invigorate mental adaptability - the capacity to switch between various assessments or viewpoints. Kids who advance something like two vernaculars remarkably without a second thought in life a basic piece of the time support more grounded performing various endeavors limits and can change as per new circumstances more effectively than their monolingual colleagues. This mental adaptability comes from the psychological improvement of exchanging between vernaculars, which develops the cerebrum's chief control framework.

Language is the medium through which most learning happens in grade school. Whether it's wisdom math word issues, consenting to course in science examines, or sorting out unambiguous records, coldblooded talk limits are head. Kids who battle with language getting will in fact confront bothers across different careful subjects, not on the grounds that they need data yet rather since they can't really process or express sharpness they could unravel the material.

In this specific situation, early language procurement is imperative for scholastic achievement. Getting ready adolescents to examine and write in their mysterious years not just sets them up for extra bewildering attempts later on yet close to gives them the sureness to draw in with learning. Conclusively when youngsters are capable in language, they will see the worth in learning, take part in conversations, and get a profound fulfillment with organizing.

Past its mental advantages, language getting comparably anticipates an essential part in a ton of coordinated and fundamental new turn of events. Language is the means by which youngsters give their basics, offer their viewpoints, and make relationship with mates and grown-ups. (Blake & Pope, 2008; Fenanlampir et al., 2021; Hailikari et al., 2022) A young who



can convey their thoughts and ends clearly will for specific push toward striking especially coordinated affiliations and support a sound individual regard.

Essentially, language awards young people to draw in with their, when in doubt, parts in enormous ways. Whether it's through portraying, playing, or participating in discussions with grown-ups, language assists youths with figuring out their encounters and figure out substitute viewpoints. This, consequently, makes compassion and the ability to comprehend people at their middle, characteristics that are valid for framing positive relationship all through the extent of life.

Understanding the meaning of early language obtaining has immense repercussions for teachers. Educators in grade schools should be equipped with the information and abilities to assist language improvement in all understudies, paying little mind to what their experience or language with limiting with evening out on the town. This requires a homeroom climate that connects with language use, offers collected open doorways for verbal and made clarification, and supports understudies at various times of language improvement.

For second-language students, teachers should give stage to assist them with obtaining the new vernacular while proceeding to develop their first-language limits. This could consolidate utilizing visual accomplices, showing language use, and offering a lot of chances for crucial correspondence in the resulting language (Blake & Pope, 2008; Fenanlampir et al., 2021; Hailikari et al., 2022). Moreover, educators should be delicate to the social and etymological combination in their homerooms, seeing that youths come from different foundations and convey different language encounters with them.

Language showing up in clear arrangement is a sensible different choice from figuring out a functional procedure for checking out and structure. It is connected with attracting mental new turn of events, updating social-especially close new development, and spreading out the defense behind scholarly achievement (Hailikari et al., 2022; Hiver et al., 2022; Lynette Allers & Singh, 2021; Nurhasnah et al., 2024). Early language getting, whether it's in a youthful's most enormous language or an extra language, has major ramifications for huge flourishing, illuminating execution, and self-awareness. Accordingly, giving youthful students rich language encounters during their mystery wide stretches of instructing is fundamental for assisting them with appearing at their most prominent cutoff.

Sorting out today supplements connecting with changed limits in students that go past standard teaching (Blake & Pope, 2008; Cindrić et al., 2024; Hailikari et al., 2022; Hiver et al., 2022; Nurhasnah et al., 2024; Yang et al., 2021). Among the different ways to deal with managing organizing arranging further make getting the hang of, clearing learning has gotten goliath thought. This piece investigates the advantages and pesters of moving clearing learning through formed inspecting, showing, and abilities to talk. It further limits reasonable assessments of persuading executions concerning such frameworks and demolishes loads through searched in this scholastic style. Finally, this paper joins Piaget's developmental speculation to get a handle on the psychological pieces of the instructing and making experience.

One of the central advantages of this approach is that it prompts sweeping getting by joining various endpoints like looking at, showing, and talking. As opposed to treating these as separates areas of fixation, teachers can blend them into a specific, careful making experience. For instance, while students are sorting out a reliable system for seeing, they could profit from a couple of intervention a few data about the material through piece and talking.



This planned design ensures that students support limit in a bewildering way, developing better comprehension and social endpoints. Seeing changes students with new tongue and syntactic plans, which hence enables their creation. Talking, as a strong mastery, depicts these endpoints by studying that students should control what they have found in checking and making reliably (Blake & Pope, 2008; Cindrić et al., 2024; Hailikari et al., 2022; Hiver et al., 2022; Nurhasnah et al., 2024; Yang et al., 2021).

The interconnected thought of these endpoints licenses students to get a more key data on the material and helps with fanning out their thinking about showed by a general perspective more. This is examining how the students are consuming data (through checking out) yet are guiding it (through plan) and making it (through talking). The coordinated effort between these limits adds to a more comprehensive chance for development.

An organized system for figuring out learning is truly overpowering considering the way that it urges students to convey different bits of their status in a key way. Unequivocally when models coordinate looking at, making, and talking practices that are fitting solid areas for to or student interests, understudies will genuinely be moved.

For example, a critical framework for sorting out getting it, where students research a subject like standard sensibility, can prompt them to look at articles on common change, make papers or letters staying aware of for regular plans, and present their evaluations in class discussions. The setting driven learning licenses students to see the importance of their preparation, making them feel more connected with the material and more partook in the illuminating experience. Similarly, gathering these endpoints in gigantic settings drives further mental commitment. Students are scoring sound parts or language as well as are using these language gadgets to present their perspectives, direct issues, and partake in unequivocal thinking. This confounding bet is major to drawing in motivation and remained mindful of interest in learning.

While the firm plan values many advantages, one key injury is that it could incite a lack of focus on key strategy blocks of language learning, similar to phonics and part. In a planned enlightening framework, the teacher's middle could move towards ensuring students regard the essential assessments or subjects, perhaps legitimizing the more unambiguous pieces of language progress.

Phonics, which is irritated for early structure, may not in any way stand bound it requires crossing that teachers are zeroing in on more clear checking out and making subjects. Moreover, feature course might be avoided for assist with outing self-verbalization and correspondence, achieving students making openings in these fundamental endpoints (Cindrić et al., 2024; Hailikari et al., 2022; Nurhasnah et al., 2024).

Without requested update on these vagabond pieces, students could fight with extra made getting ready undertakings. For instance, irredeemable phonics endpoints can impel load in relaxing new words, while a sensitive handle of language improvement can wipe both figuring off precarious and making clearness.

Serious learning, with its report on leaning toward blend and key setting, can be endeavoring to push toward using standard structures. Teachers could challenge upsets in focusing in on a student's improvement unequivocally, especially expecting they rely upon state remained mindful of tests that part on individual cutoff points rather than made endeavors. Since broad progressing dependably works with blending researching, outlining, and talking, it requires



extra stunning kinds of assessment that can truly check out at a student's capacity across various perspectives in the interim.

For example, focusing in on a student's ability to work with checking out, making, and abilities to talk into a fundamental show could require rubrics that study content data, language use, and correspondence thinking meanwhile. This can be terrible and dynamic, inclined to the's appreciation educator could relax the student's show (Cindrić et al., 2024; Hailikari et al., 2022; Nurhasnah et al., 2024).

The difficulty in making confirmed and standardized assessments for worked with learning endeavors other than addresses a test for seeing student improvement across different homerooms or schools. Besides, a few students could win in one district (e.g., figuring out getting it) while simultaneously taking part in another (e.g., oral correspondence), making it harder to give a fair assessment of their general learning.

3. METHODOLOGY

This systematic literature review (SLR) aims to synthesize existing research on aligning cognitive development theory with whole language teaching in elementary education, specifically focusing on strategies and activities that enhance language learning. The methodology follows a structured approach adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.

Search Strategy

The literature search was conducted using multiple academic databases, including Scopus, ERIC, Google Scholar, and Web of Science. Search terms included "cognitive development theory," "whole language teaching," "elementary education," "language learning strategies," and "child language acquisition." To ensure comprehensiveness, searches were limited to peer-reviewed articles published in the last 20 years.

Inclusion and Exclusion Criteria

Inclusion criteria focused on empirical studies, theoretical papers, and reviews addressing cognitive development in young learners (ages 6-12), whole language approaches, and their practical applications in elementary education. Studies that did not focus on elementary education, were not peer-reviewed, or did not discuss cognitive development or language learning strategies were excluded.

Data Extraction and Analysis

Relevant articles were reviewed systematically, and data on theoretical frameworks, teaching methods, learning outcomes, and cognitive development stages were extracted. Each study was coded for its alignment with specific cognitive development theories (e.g., Piaget, Vygotsky) and their integration with whole language pedagogy. A thematic analysis was conducted to identify common strategies and activities that supported language learning within these frameworks.



Quality Assessment

The quality of the included studies was assessed based on methodological rigor, sample size, and relevance to the research question. Only studies that met high methodological standards were included in the final analysis. The results are presented in a narrative synthesis, highlighting key trends and gaps in the literature.

4. RESULTS AND DISCUSSION

Piaget's Developmental Stages and Whole Language Teaching

Piaget, a Swiss psychologist, is renowned for his theory of cognitive development, which describes how children acquire knowledge and learn to think. Piaget's theory divides childhood development into four distinct stages: sensorimotor, preoperational, concrete operational, and formal operational. Each stage represents a different way in which children process information, and understanding these stages is crucial for educators, particularly when it comes to language learning. This essay provides an overview of Piaget's theory, examines its relevance to language learning in elementary education, and explores strategies for aligning whole language teaching with Piaget's stages. It also discusses examples of activities that can support cognitive development through language learning (Blake & Pope, 2008; Erath et al., 2021; Fenanlampir et al., 2021; Hailikari et al., 2022)

Overview of Piaget's Theory of Cognitive Development

Piaget's theory posits that children move through four stages of cognitive development as they grow and interact with their environment. These stages are not simply age-based, but depend on children's active engagement with the world, which allows them to build and modify their understanding of reality (Fenanlampir et al., 2021; Hailikari et al., 2022; Nurhasnah et al., 2024).

Sensorimotor Stage (Birth to 2 Years)

The sensorimotor stage is characterized by infants' exploration of the world through their senses and motor actions. During this stage, children learn through physical interactions with their environment. They develop object permanence, the understanding that objects continue to exist even when they are out of sight, which is a crucial cognitive milestone.

At this stage, language development begins with the emergence of sounds, gestures, and early words. Babies start to associate sounds with meanings and learn to communicate basic needs and emotions. Language serves as a tool for interacting with their environment and caregivers (Hailikari et al., 2022; Nurhasnah et al., 2024).

Preoperational Stage (2 to 7 Years)

In the preoperational stage, children start to use language to represent objects and ideas symbolically. However, their thinking is still egocentric, meaning they have difficulty seeing things from perspectives other than their own. Children in this stage often engage in pretend play and begin to use language in more complex ways, although their understanding of concepts is still intuitive and not fully logical.



While language skills expand rapidly during this stage, children may not fully grasp abstract concepts or be able to follow multi-step instructions. They tend to focus on one aspect of a situation at a time (centration), and their thinking can be influenced by appearances rather than logic (Fenanlampir et al., 2021; Hailikari et al., 2022; Nurhasnah et al., 2024).

Concrete Operational Stage (7 to 11 Years)

In the concrete operational stage, children develop the ability to think logically about concrete objects and events. They gain a better understanding of concepts such as conservation (the idea that quantity remains the same despite changes in shape or arrangement) and begin to grasp more complex relationships between objects and ideas.

Language use becomes more sophisticated during this stage. Children can understand multiple aspects of a situation simultaneously and can engage in more advanced forms of communication. They also begin to develop metacognitive skills, meaning they can reflect on their own thinking and learning processes. This is crucial for reading comprehension and other language-related tasks.

Formal Operational Stage (11 Years and Up)

The formal operational stage marks the development of abstract and hypothetical thinking. Adolescents and adults in this stage are capable of reasoning about complex concepts, solving problems systematically, and thinking about future possibilities. They can engage in higher-level language use, such as debating, explaining abstract ideas, and analyzing complex texts (Cindrić et al., 2024; Erath et al., 2021; Hailikari et al., 2022).

At this stage, students are fully capable of understanding and using language in sophisticated ways. They can read and write complex texts, engage in debates, and think critically about the language itself.

Relevance of Piaget's Developmental Stages to Language Learning in Elementary Education

Piaget's theory is highly relevant to language learning, especially in elementary education, as it helps educators understand the cognitive capacities of children at different stages. Language acquisition is closely tied to cognitive development, and the strategies used to teach language must align with students' developmental stages to be effective.

For example, during the preoperational stage, children are just beginning to understand that words and symbols can represent objects and ideas. Educators need to use simple, concrete language and visual aids to help children make connections between language and meaning. Teaching strategies should focus on storytelling, picture books, and play-based learning, as these methods align with the symbolic thinking characteristic of this stage.

In the concrete operational stage, children are better equipped to handle more complex language tasks, such as understanding grammar rules or reading comprehension. Teachers can introduce more structured language lessons, including grammar, sentence structure, and vocabulary development. At this stage, children benefit from activities that involve classification, comparison, and logical reasoning, as they can now think more systematically about language.



Strategies for Aligning Whole Language Teaching with Piaget's Stages

Whole language teaching is an approach to literacy instruction that emphasizes the use of language in meaningful contexts rather than isolated drills or phonics exercises (Blake & Pope, 2008; Fenanlampir et al., 2021; Nurhasnah et al., 2024; Yang et al., 2021). It encourages students to learn language through exposure to rich texts, storytelling, and communication. To align whole language teaching with Piaget's stages of development, educators can tailor their instructional methods to the cognitive abilities of their students.

For the Preoperational Stage (2-7 Years):

- **Use of Visual and Concrete Aids:** Teachers can incorporate picture books, puppets, and real objects to help children connect words with their meanings. These visual aids can enhance understanding, especially when abstract concepts are still beyond the child's cognitive reach.
- **Storytelling and Role-Play:** Since children in this stage are egocentric and engage in symbolic play, storytelling and role-play activities allow them to use language in meaningful, imaginative contexts. These activities help them build vocabulary and improve their narrative skills (Forsler & Guyard, 2023).

For the Concrete Operational Stage (7-11 years):

- **Introduce More Complex Reading Materials:** At this stage, children can handle texts with more sophisticated plots and ideas. Teachers can introduce chapter books, informational texts, and narratives that require logical thinking and understanding of cause and effect.
- **Group Discussions and Collaborative Activities:** Group discussions provide opportunities for students to articulate their thoughts, listen to others, and refine their language skills. Collaborative activities, such as group projects or peer editing, help students practice communication in a structured, cooperative environment.

For the Formal Operational Stage (11 years and up):

- **Encourage Critical Thinking and Abstract Discussions:** In this stage, teachers can engage students in debates, persuasive writing, and analysis of complex texts. These activities encourage students to think about language as a tool for expressing abstract ideas and for shaping opinions.
- **Focus on Metacognitive Skills:** Helping students reflect on their own learning processes, such as identifying reading strategies or revising written work, fosters deeper language comprehension and effective communication.

Examples of Activities That Support Cognitive Development Through Language Learning

To support cognitive development through language learning, educators can incorporate a variety of activities that engage students at different stages of Piaget's developmental theory (Blake & Pope, 2008; Fenanlampir et al., 2021; Nurhasnah et al., 2024; Yang et al., 2021).



1. **Storytelling:** Storytelling is an effective way to build language skills across all stages. For younger children in the preoperational stage, stories with vivid pictures and simple language help them develop vocabulary and understand basic narrative structures. For older children, storytelling can become more complex, involving longer narratives, moral lessons, and discussions about themes or character motivations.
2. **Role-Play:** Role-playing is a particularly effective tool for younger children, as it allows them to practice language in social and imaginative contexts. For example, children can act out scenes from a story they've read or create their own scenarios based on real-life experiences. This activity helps them build conversational skills, develop empathy, and practice using language to solve problems.
3. **Reading Circles and Book Discussions:** For students in the concrete operational and formal operational stages, reading circles and book discussions encourage critical thinking and deeper language comprehension. These activities allow students to share interpretations of a text, debate different perspectives, and practice using language to articulate complex ideas.
4. **Writing Journals:** Writing journals are an excellent way for students to practice reflective thinking and self-expression. For younger students, journals can be used to record daily events or imaginative stories, while older students can use them for more analytical writing, such as reflecting on themes in a novel or responding to prompts. Piaget's theory of cognitive development provides valuable insights into how children learn at different stages of their development. By aligning language teaching strategies with Piaget's stages, educators can support the cognitive and linguistic growth of their students. Through activities such as storytelling, role-play, and reading circles, children can engage with language in ways that foster both intellectual and linguistic development, ultimately leading to a deeper understanding of language and its role in their lives (Blake & Pope, 2008; Fenanlampir et al., 2021; Nurhasnah et al., 2024; Yang et al., 2021).

5. CONCLUSION

Communication is at the heart of the whole language approach. By providing opportunities for students to express themselves through writing, speaking, and other forms of creative expression, teachers help students develop the ability to articulate their thoughts clearly and effectively. These skills are not only vital for academic achievement but also for success in future careers and personal relationships.

Curriculum development plays a crucial role in supporting integrated language learning that aligns with developmental psychology. A well-designed curriculum should provide students with opportunities to engage with language in a way that reflects their cognitive and social development.



Suggestion

For young learners, the curriculum should focus on providing a balance of structured and open-ended activities that encourage exploration and self-expression. Reading and writing tasks should be connected to real-world experiences, allowing students to make meaningful connections between language and their own lives. Additionally, the curriculum should incorporate opportunities for collaboration and critical thinking, encouraging students to engage with texts in a thoughtful, reflective manner.

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