

# Activating Schemata: Strategies For Effective Reading Instruction

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## **Abstract**

*This paper discusses the importance of activating schemata which is a foundational reading strategy for effective reading instruction. This paper explores the theoretical underpinnings of schema theory and its practical applications in the classroom. It examines the role of readers' prior knowledge and experience in making reading meaningful. The paper also investigates the roles of pre-reading activities, questioning techniques, and contextual scaffolding and how they stimulate learners' cognitive ability, enhancing comprehension and engagement. Ultimately, activating schemata empowers learners to become more strategic, reflective, and autonomous readers.*

**Keywords:** *Activation, schemata, strategies, effective, reading instruction*

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## **I. Introduction**

Reading comprehension is not merely a passive intake of information, it is an active, dynamic process shaped by the reader's prior knowledge, experiences, and expectations. Central to this process is the concept of *schema*, a cognitive framework that helps individuals organize and interpret information. Schema theory posits that comprehension occurs when readers can connect new information to existing mental structures. In educational settings, activating these schemata is a powerful strategy for enhancing reading instruction, particularly in diverse and multilingual classrooms.

### *Schema Theory*

The schema concept is associated with Barlett who proposed that people's understanding of a concept is influenced by their prior knowledge which are mentally presented in schematic model (Ajideh). Schema construct had its main influence on cognitive psychology it nonetheless had less impact on cognitive science (Rumelhart, 1984 and Louis, 2013).

Schema was therefore originally a term in cognitive psychology until Barlett (1932) expanded the fundamental framework of the construct and applied it to education. Barlett carried out studies in reconstructive memory and found participants' existing schemata influenced how they perceived and recalled information. Aggehoko (2011) agreed with Barlett that people's understanding and remembrance of events are shaped by their expectations or prior knowledge, and that these expectations are presented mentally in some sorts of schematic fashion. Thus, Barlett (1932) believed that our memory of discourse was not based on straight reproduction but was constructive.

This constructive process uses information from the encountered discourse, together with knowledge from experience related to the discourse at hand to build a mental representation. The experience, Barlett argued, cannot be an accumulation of successive individuated events and experiences, it must be organised and made manageable – the past operates as an organised mass rather than as a group of elements each of which retains its specific character (Aggehoko, 2011 and Benson, 2014). What gives structure to that organised mass is the schema which remained active and developing.

Jean Piaget, a Swiss psychologist introduced schemata into his cognitive development theory through his studies on children's sensorimotor activities as a generalised description or a conceptual system for understanding how knowledge is represented and how it is used (Berger, 1991; Benson, 2014). Piaget (1952) explained how readers develop, acquire, classify or organise their schemata through the cognitive processes of assimilation, accommodation and equilibrium. Assimilation according to Piaget (1952) is the process through which the child continuously integrates new experience into the existing schemata, Piaget believed that all children possess the natural capacity to explore their environment, they show a particular pattern of behaviour which is known as 'schemes' (Slavin, 2014; Benson, 2014). The assimilation increases the growth of the schemata, it does not change it, and it simply makes the child to add new information into the existing schemata or concepts (Wadsworth, 1996; Rubin, 1997; Aloquaili, 2012 and Slaving 2014).

Accommodation involves the development of new schemata instead of integrating them into existing ones (Piaget, 1952). This happened when a child is faced with a new information that does not have a corresponding schema in him or her, the child simply creates a new schema or modifies existing schemata to accommodate the new information.

Equilibrium is a balance between the assimilation and accommodation processes (Piaget, 1952; Slavin, 2014). Wadsworth (1996) explained that a child will end up having a few too large schemata if he or she assimilates and lacks the capacity to find out the differences in things because most concepts, objects and ideas seem similar. Also, a child will end up having too many small schemata if he or she over accommodates because he or she is not able to identify similar objects, concepts or ideas because all things look different to him or her. Thus, a child who possesses equilibrium cognitive schemata will be able to identify similarities and detect differences, therefore being able to determine when new schema is needed for accommodation of a surplus schemata (Rubin, 1997; Aloquaili, 2012 and Benson, 2014). It is pertinent to note that both assimilation and accommodation can be used at the same time to expand and change our schema, however, achieving equilibrium will occur as they advance in age.

Modern schema theory emerged in the middle of the 70s with Minsky (1975) and Rumelhart (1980) as its representatives. Schema theory states that all knowledge is organised into units and within these units of knowledge, or schemata, is stored information (Slavin, 2014). Schemata can be seen as organised background knowledge, which leads us to expect or predict aspects in our interpretation of discourse. Therefore, schema theory aimed at explaining how children can describe the interaction between the text and how the context of the text is shaped and stored by the children. Aloquaili (2012) and Benson (2014) both agreed with this view when they opined that the meanings of texts depend on the meanings the readers construct from them based on their experiences. Therefore, in schema theory, it is safe to infer that there is no definitive or conclusion that is attributed to any text.

Literature overwhelmingly supports the importance of schemata in reading comprehension. Schema theory provides a robust framework for understanding how readers construct meaning, and its instructional applications are both practical and transformative. By activating students' prior knowledge, educators can foster deeper comprehension, critical thinking, and a lifelong love of reading.

#### *Pre-Reading Strategies*

Pre-reading strategies are essential in activating schemata, which refers to the process of tapping into readers' prior knowledge and experiences to help them make connections with new information. Research by Graves et al. (2011) highlights the importance of pre-reading activities in activating schemata. Techniques such as brainstorming, KWL charts (Know, want to know, Learned), vocabulary preview, background knowledge activation, text preview and concept mapping allow students to connect their experiences to the text. These strategies are particularly effective in preparing students for complex or unfamiliar content. Pre-reading strategies are crucial because they activate prior knowledge which the learners need in order to meaningfully process what they read, build anticipation and develop a purpose for reading.

#### *Cultural Relevance and Inclusivity*

The cultural relevance and inclusivity of texts can significantly impact readers' ability to connect with the text. Gay (2000) and Ladson-Billings (1995) argue that culturally responsive pedagogy is essential for schema activation. When texts reflect students' cultural backgrounds, they are more likely to engage and comprehend. Teachers must be intentional in selecting materials that resonate with students lived experiences and linguistic diversity. Research suggests that texts that are culturally relevant and promote inclusivity can enhance readers' comprehension of texts (Ladson-Billings, 1995; Gay, 2000). Likewise, texts that lack cultural relevance will cut off the readers from constructing correct meanings from the text. Effective teachers use culturally relevant texts to create a learning environment that values and respects cultures and experiences. Thus, cultural relevance and inclusivity are critical components of schema theory and reading instruction.

#### *Questioning Techniques*

Questioning techniques help readers engage with the text, activate their schemata and make meaning out of the text. Effective questioning, as discussed by Beck and McKeown (2006), can guide students to activate relevant schemata. Open-ended questions encourage readers to think critically and promote prompt reflection, prediction, and connection (Rosenblatt, 1978). Teachers can scaffold these questions to support learners at varying levels of proficiency. Questioning techniques use a variety of questioning techniques to help readers connect new information to their existing knowledge and experiences thereby promoting critical thinking.

### *Challenges in Diverse Classrooms*

Managing diverse classrooms may be a daunting task especially for new teachers. Activating schemata is not without challenges. Students from different cultural or socioeconomic backgrounds may lack shared experiences with the text. Vacca and Vacca (2008) suggest that teachers must identify gaps in background knowledge and provide supplementary context to bridge these divides.

## **II. The Importance Of Schemata To Reading Comprehension**

Reading has expanded the scope of research in cognitive psychology. Researchers have developed new theories and expanded existing theories that provide conceptual and theoretical frame works for practical reading strategies (Limbach and Waugh, 2010 and Zabit, 2010, Aloquaili, 2012). Khemlani and Lynne (2000) asserted that the 1960s witnessed the interest of several theorists (Goodman, 1970; Smith, 1978) in the development of interactive theories of reading which placed great importance on the role of prior knowledge in the reading process.

These interactive theories according to Ajideh (2006) draw heavily on schema theory have now dominated reading research. The importance of schema theory to reading comprehension also lies in how the reader uses schemata.

Schemata's main features are flexibility and creativity in the learners as they focus at putting bits of knowledge together from words, phrases, clauses, sentences, passages and texts to make sense and new meaning out of them which is the bedrock for better comprehension and learning achievements. Schema theory serves as a catalyst to activate and accelerate the cognitive responses of students to construct and deconstruct information for assimilation. Schema theory provides a strong link between learners' backgrounds and reading comprehension (Louis, 2013). Schemata is a potent tool in facilitating remembering text information.

Rumelhart (1980) believed that reading comprehension involves inputting some information and then searching for the schemata illustrating the information. Comprehension is generated when such schemata are found, or some schemata are specified, or slots are filled. Just as various concepts operate at different levels, schemata according to Snobert (2013) have different levels in human's mind and the comprehension process is bound to reflect the levels, that is, the input information must be processed at different levels successively from lower schema specification to higher level one. Schema theory is of the view that there is no one correct interpretation of a text because individual readers bring his or her experience to bear in interpreting the text (Aloquaili, 2012). Thus, the understanding and interpretation of texts are relative, and no specific conclusion can be reached. However, a reader must strive to become a successful reader and to be able to achieve this goal, he or she must possess the inferential skills of drawing connections between information in the text and relevant prior knowledge (Brock and kremer, 2000, Adetayo, 2012, Philips 2014).

According to Anderson (1994) in Aloquaili (2012), there are six ways in which schemata can facilitate remembering of text information in learners:

- (a) Subject matter learning should build on prior knowledge whenever possible because most knowledge are gained by assimilating new information into existing structure.
- (b) inferential expansion of incoming information and experience are allowed and directed by schemata.
- (c) the existing schemata of learners focus on what is significant in new materials presented.
- (d) schemata give direction to the type of information to be created by the learners through organised searches of memory.
- (e) the skills of summarisation of the text read are easily facilitated by schemata and
- (f) schemata help the learners to generate hypotheses about unavailable information by providing inferential reconstruction when there is a gap in the memory.

Empirical studies have consistently demonstrated the positive impact of schema activation on reading comprehension. Readers who engage with pre-reading strategies—such as brainstorming, concept mapping, or discussing related experiences—tend to perform better in recall and interpretation tasks. They are more likely to generate coherent summaries, identify main ideas, and make accurate inferences. This is because activated schemata reduce cognitive load, allowing readers to focus on integrating new information rather than struggling to decode unfamiliar concepts.

However, schema activation is not without challenges, especially in diverse classrooms. Students from different cultural, linguistic, or socioeconomic backgrounds may lack shared experiences with the text, making it harder to activate relevant schemata. Gay (2000) and Ladson-Billings (1995) advocate for culturally responsive pedagogy to address this issue. By selecting texts that reflect students lived experiences and cultural identities, educators can create more inclusive learning environments that support schema activation. This approach not only enhances comprehension but also validates students' backgrounds and fosters engagement.

Schema theory contradicts the traditional way of reading which requires readers to learn how to reproduce the statement that is read in the text (Mc Neil, 1992). Orbea and Vilabeitia (2010) argued that schema

theory advanced reading beyond the traditional focus to a process where readers are taught techniques for processing the text using prior knowledge to construct meaning out of a text.

### III. Implications

The emphasis on schema activation carries significant implications for curriculum design, teacher training, and educational policy. Curriculum developers must prioritize texts and activities that resonate with students lived experiences, ensuring that reading instruction is not only academically rigorous but also personally meaningful. For teacher education, schema theory should be a foundational component, equipping future educators with the tools to recognize and leverage students' cognitive frameworks. At the policy level, educational systems must support differentiated instruction and resource allocation that enables culturally responsive teaching. Ultimately, integrating schema-based strategies into reading instruction can transform passive reading into an active, reflective process—empowering students to become autonomous, critical thinkers in a rapidly evolving world.

### IV. Conclusion And Recommendations

The paper reveals an agreement between theorists and researchers that schema theory is fundamental to reading comprehension. Schema theory provides powerful rational and theoretical premise of building an interactive model for interpreting how reading comprehension develops by utilising the connections between reading comprehension and prior knowledge. Schema theory is one of the most effective current theories that has had a major influence in terms of changing the face of reading instruction and reading comprehension. Activating schemata is a vital component of effective reading instruction, as it enables learners to connect new information with existing knowledge, thereby enhancing comprehension, engagement, and retention. The strategies explored—such as pre-reading activities, questioning techniques, and contextual scaffolding—demonstrate that when instruction is aligned with students' cognitive frameworks, it fosters deeper understanding and critical thinking. However, the paper also acknowledges the challenges posed by diverse classrooms, where cultural and experiential gaps may hinder schema activation. To address this, adaptive and inclusive teaching methods are essential. Ultimately, empowering students to become strategic and reflective readers through schema-based instruction not only improves academic outcomes but also nurtures lifelong literacy skills.

To optimize reading comprehension through schema activation, educators should incorporate structured pre-reading strategies that engage students' prior knowledge. Activities such as brainstorming sessions, KWL charts, thematic discussions, and visual prompts can help learners connect with the text before reading begins. Teachers should also use open-ended questioning techniques that encourage prediction, reflection, and personal connection to the material. Importantly, instructional materials must be culturally responsive and inclusive, reflecting the diverse backgrounds of learners to ensure equitable access to schema activation. Professional development programs should train educators to identify gaps in students' background knowledge and to scaffold instruction, accordingly, fostering a more inclusive and cognitively engaging classroom environment.

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