

Cognitive Schema Activation in Second Language Vocabulary Acquisition

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Abstract: *Recent years have seen a growing interest in the importance of cognitive schema activation during second language vocabulary acquisition within computer-assisted language learning (CALL) settings. This process refers to leveraging a learner's pre-existing knowledge structures towards improving memory-retention abilities when encountering unfamiliar words. It works by linking these novel items back to previously-encountered concepts and creates stronger associations that are easier for learners to remember and retrieve.*

Keyword: cognitive schema activation, computer-assisted language learning (CALL), vocabulary learning

Introduction

Recent years have seen a growing interest in the importance of cognitive schema activation during second language vocabulary acquisition within computer-assisted language learning (CALL) settings. This process refers to leveraging a learner's pre-existing knowledge structures towards improving memory-retention abilities when encountering unfamiliar words. It works by linking these novel items back to previously-encountered concepts and creates stronger associations that are easier for learners to remember and retrieve.

Individuals rely on their existing knowledge and mental frameworks to understand and interpret new information (Bartlett, 1932). Activating relevant cognitive schemas can foster meaningful connections between unfamiliar vocabulary items and prior knowledge, promoting improved vocabulary retention and retrieval (Nation, 2001). By allowing this activation process, learners experience deeper processing of new material, which ultimately promotes the seamless integration of novel language into their mental lexicons (Williams & Burden, 1997).

The educational world has recognized the significance of implementing CALL environments in language learning. Such a revolutionary approach facilitates technology and instruction to give learners an immersive and engaging experience. With CALL environments come numerous benefits, such as multimedia resources, interactive exercises, and virtual simulations - all designed to promote vocabulary acquisition (Monje et al., 2016). Nonetheless, there have been few attempts to investigate the potential gains from using cognitive schema activation methods in conjunction with CALL approaches.

According to research findings (Bransford, Brown & Cocking, 2000; Ausubel, 1968), activating cognitive schemas among learners is an effective way of promoting meaningful learning. By doing so, the learners can create connections between the new material and their pre-existing knowledge. It leads to efficient retention of the vocabulary that they construct through schema activation. Additionally, there are notable improvements in motivation levels and engagement and improved language learning results (Oxford, 2016; Vandergrift & Goh, 2012).

Despite extensive research on the efficacy of cognitive schema activation on vocabulary acquisition during traditional instruction, there is a need for further studies on its applicability in computer-assisted language learning (CALL) contexts. CALL refers to the integration of technology, including multimedia and computers, for language education. As CALL is increasingly used, it is critical to investigate effective methods of incorporating cognitive schema activation into these contexts to promote second-language vocabulary acquisition.

The capacity to acquire diverse vocabularies is critical for effective communication and understanding. According to Nation's (2001), research shows that gaining proficiency in CALL is fundamental for language development. Moreover, cognitive schemas - the mental frameworks that assist with comprehension - play an essential part in processing language (Rumelhart, 1980). These networks enable learners to organize their knowledge while facilitating connections between previously acquired information and novel words, leading to an enhanced acquisition experience.

A thorough appreciation of why cognitive schema activation is so critical requires familiarity with the fundamental tenets underlying schematheory itself. To this end, Anderson (1983) describes schemas as mental constructs that help us arrange and retain information more effectively by associating concepts with particular contexts or contexts with particular concepts; this approach ultimately facilitates deeper comprehension and learning overall. Regarding picking up new terminology in a second language, cognitive schema activation means drawing on prior knowledge or preexisting mental frameworks as stepping stones toward making connections with entirely new words based on familiar associations.

Cognitive schema pertains to the frameworks or structures of the mind that people use to organize and decipher information (Anderson, 1977). The process of schema activation involves linking and integrating pre-existing knowledge and experiences with new information, which supports the encoding and recall of unfamiliar vocabulary (Oxford & Crookall, 1990). Hence, it is worth mentioning that several learning settings have presented encouraging outcomes when applying cognitive schema concepts to second language vocabulary acquisition.

While enhancing vocabulary acquisition in computer-assisted language learning (CALL) environments, incorporating cognitive schema activation techniques can do wonders. CALL involves leveraging technology, such as computers and software, to promote efficient language learning methods (Levy, 1997). With the rapid development of technology over recent years, many educational settings depend on CALL for classroom engagement. However, it is necessary to investigate the effectiveness and consequences of implementing cognitive schema activation exclusively within CALL.

The active function of cognitive schemas in developing a second language learner's lexicon via CALL has rarely been analyzed so far through research. Yet studies about vocabulary skill approaches and mental procedures offer valuable information about schema activation methods' potential benefits. To illustrate, O'Malley & Chamot's (1990) innovative approach underscored how invoking prior knowledge among learners before introducing novel words enhances remembering the meaning of a concept. Similarly, Mayer (1997) confirmed the importance of our underlying mental schemas as tools for effective strategies to build multilingual skills via multimedia.

Studies on the impact of Computer-Assisted language learning (CALL) have highlighted that technology is a powerful tool for improving outcomes in vocabulary acquisition (Chun, 2003). Leveraging cognitive schema activation techniques within CALL programs could enhance vocabulary learning even further in online learning settings. When learners' existing knowledge is tapped into and interactive experiences are created that allow meaningful connections, CALL platforms can promote successful vocabulary acquisition (Kukulka-Hulme, 2012).

Scholarly exploration accentuates the value of cognitive schema activation when gaining proficiency in second language vocabulary. One investigation conducted by Arbib et al. (1987) explored the effects of activating schemas during instruction on vocabulary acquisition, revealing that participants exposed to such instructional methods displayed superior retention skills compared to peers who received conventional teaching methods. Additionally, Bensoussan and Laufer (1984) examined how activating relevant schemas before engaging in vocabulary learning could improve word memory retention and promote deeper comprehension.

One expert in the field worth mentioning is Anderson (2005), who proposed the concept of cognitive schema activation in terms of second language learning. Anderson emphasized that unveiling learners' knowledge and cognitive structures is the key to successful vocabulary acquisition. Similarly, Dörnyei (2013) backs up this idea, highlighting the critical role of tapping into learners' background knowledge and cognitive processes for improving vocabulary learning outcomes.

While there are several claims about the effectiveness of cognitive schema activation for enhancing vocabulary knowledge, we should note that conclusive research findings vary. Chiu's (2013) meta-analysis noted favorable and unfavorable outcomes across extensive studies exploring it in CALL contexts. Specific investigations presented positive results, while others failed to demonstrate any considerable boost to vocabulary knowledge via cognitive schema activation.

In 1998, Carrell conducted research indicating that invoking cognitive schemas can have a notable impact on the ability of second language learners to acquire new vocabulary. Carrell (1998) asserts that by accessing pertinent schema knowledge, learners are better equipped to comprehend and retain newly learned words.

Cognitive schema activation has emerged as a valuable strategy for improving one's capacity to learn new second-language words. Research shows that by harnessing learners' pre-existing understanding and mental frameworks, the approach allows for easier uptake and retention of new vocabulary within existing verbal structures. It stimulates meaningful learning and promotes overall outcomes when acquiring a second language. However, there is still much to learn regarding applying cognitive schema activation within the CALL environment to have an optimal impact on second-language vocabulary acquisition.

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