

The Effect of Cultural Schemata on Reading Processing

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Abstract: This paper examines the history of schema theory and how culture is incorporated into schema theory. Furthermore, the author argues that cultural schema affects students' usage of reader-based processing and text-based processing in reading.

Researchers studying reading process have long known that readers' background knowledge affects their reading comprehension. In the last few decades, this has been explained by schema theory. In this paper, the author will trace the origin of schema theory and examine how culture affects schema development. Furthermore, the author relates cultural schema to research in reading field by exploring how it affects reading processes. By doing so, the author aims to raise the awareness of the diversity of students' cultural backgrounds among educators and lead to the changes in instructional pedagogies correspondingly.

Schema Theory and Cultural Schemata

The term *schema* was first used in the 19th century by Kant, who considered it an intrinsic structure that people use to organize and interpret the outside world (Ajideh, 2003; McVee, Dunsmore, & Gavelek, 2005). Bartlett first proposed the schema theory as a construct in his classic book *Remembering*. Bartlett (1932) believed that understanding and remembering occurs in the contexts of people's previous experiences and information. He used schema referring to "an active organization of [those] past reactions, or past experience" (1932, p. 201).

Schema (*pl.* schemata) is defined as "an abstract knowledge structure ...that represents the relationships among its component parts" (Anderson & Pearson, 1984, p. 10) and "a hypothetical mental structure for representing generic concepts stored in memory" (Rumelhart, 1980, p. 34). As people continually encounter various cases, they start to summarize what they have known into a set of general, abstracted ideas and concepts (Ajideh, 2003). People organize and manage these ideas and concepts actively to make them meaningful to themselves. In some situations, the network of these meaningful and related objects, people, events, and experiences establishes broad schemata. In other situations, schemata could refer to a specific concept and various aspects of the concept itself (Vurdiem, 1994). In both situations, schemata stress the wholeness of the structure and the connectedness among component parts.

Seen as organized previous knowledge and experiences, schemata determine how a person interprets incoming information and furthermore shape how to expect situations or information he or she will encounter. A person tries to arrive at an interpretation that is in accordance with his or her experience of the way the world is (Yule, 1996). When the incoming information does not match a person's schemata, he/ she may not understand the information; consequently, it would be difficult to expect what is going to happen next as well.

Schemata are not fixed structures. Rather, schemata consistently shape and are shaped by experiences. Based on various incoming experiences, schemata change in two different ways. On the one hand, if new information is related to the previous knowledge, existing schemata adjust or expand by assimilating the new information; on the other hand, if new information does not exist in existing schemata, new mental structure must be built up (Ajideh, 2003). Either way, humans continually build on and revise their schemata according to new information.

The idea of schemata is based on the interaction between individuals and objects, events, circumstances, ideas, and concepts in society. During this interaction, culture, which is deeply embedded in society, comes into play. Brooks (1968) referred to culture as “the individual’s role in the unending kaleidoscope of life situations of every kind and the rules or models for attitudes and conduct in them. ...What is important in culture...is what one is expected to think, believe, say, and do...in typical situations” (pp. 218-221). Fleck (1979) defines culture in a more mutual way – a formation in a community of people who share their experiences to the group, “mutually exchanging ideas or maintaining intellectual interaction” (p. 39).

Both definitions have implied some key features of culture in spite of the different perspectives. First, all members share some assumptions about rules, models, ideas, etc. that are unique to a cultural group. Furthermore, members from the same cultural group are expected to behave in appropriate ways based on those share assumptions. Those assumptions are regarded as an integrated part of group members’ perception and/or behavior patterns (Pritchard, 1990). When people generalize the abstract concepts from their interaction with different circumstances in society, they internalize those cultural assumptions in their mental structures. Cultural assumptions are the core elements in schemata development

Bartlett (as cited in Saito, 2000) considered schemata as cultural structures of the mind, patterns that extend into the social and cultural world. Schemata “explain the constitutive role of culturally organized experience in individual sense making” (McVee, Dunsmore, & Gavelek, 2005, p. 535). Therefore, if an individual encounters new information or experiences without having corresponding cultural schemata, he or she may not know how to understand or respond. If new information a person encounters contradicts with existing cultural schemata, he or she may be confused and must either adjust or build up a new component to the current cultural schemata.

Cultural Schemata and Reading Processing

In 1970s and 1980s, reading researchers started to realize the active role of the reader in reading process; they drew heavily upon schema theory since then. Reading used to be seen as a passive behavior. Readers were expected to remember and recall as much information as they could from the text. The goal of reading was making a “photocopy” of the page (Tierney & Pearson, 1986, p. 4). In this reproductive view of reading, text played a key role while readers were neglected. Later on, researchers realized reading is more than just memorizing and recalling the information. Psycholinguistic theorists proposed the constructive view of reading, stating that reading is an ongoing process during which readers relate the new information to their preexisting knowledge--schemata, to reduce uncertainty and construct meanings from the texts (Goodman, 1976; Smith, 1982). In reference to Bartlett's definition of schema theory, readers can

understand the meaning of text only when they take into account their organized structure of previous knowledge and experience. Based on both schema theory and constructive view of reading, readers come to the center of the reading process while the text is considered as a resource to construct meaning; reading comprehension means readers build a meaningful representation of the text in their own mind (Tierney & Pearson, 1986). Tierney and Pearson (1986) used the following simile: “The reader, like an architect or a builder, uses the text as a blueprint as he or she creates meaning” (p. 4).

Reading process is an interaction between what readers already know and bring to the reading experience and the complex characteristics of the text itself. In this interaction, two sub-processes are generated. One is reader-based processing, during which readers construct meaning based on what they already know; the other is text-based processing, during which readers construct meaning based on textual information. Reader-based processing and text-based processing contribute to the understanding of the text respectively (Adams & Collins, 1977; Lindsay & Norman, 1977).

During reading, from the first moment that readers start encountering new information, they activate recalling and retrieving knowledge and experiences in their schemata. When the new information matches or is similar to what they have already known, they could easily assimilate the new information into their existing schemata (Singer & Donlan, 1982). Consequently, interpretations tend to occur quickly, smoothly, and accurately. More importantly, these interpretations help readers predict what is going to happen next in the text. Therefore, given a culturally related text, if the new information is comparable with the existing knowledge in readers' cultural schemata, readers are expected to trigger reader-based processing easily. It is difficult for readers to interpret, predict, or comprehend a text when they lack appropriate cultural schemata, even though they recognize the meaning of every word in the text.

Text-based processing occurs when they lack appropriate previous knowledge or experiences in their schemata. During the process of retrieving the previous knowledge in mental structures, if readers find nothing exists to relate to the new information, they rely heavily on the cues and information from the text itself. Doing so, they organize the new information and thus build up new schemata based on the text. Generally, it takes more effort and time to build up new schemata than to relate or assimilate into an existing one; therefore, reading is more difficult and slower when text-based processing dominates in the reading process.

Reader-based and text-based explanations are negatively correlated: they do not happen at the same time (Magliano, Trabasso, & Graesser, 1999). Importantly, reader-based processing and text-based processing are not static or exclusive; rather, they are ongoing and reciprocal in reading a given text. When readers could fit new information into their existing schemata, they trigger and continue reader-based processing until when they cannot adjust new information into their current schemata or the related schemata is absent, and then they switch to the text-based processing. By continually conducting text-based processing, readers organize new, incoming information into a new, meaningful structure. As soon as the meaningful structure built up, they switch back to reader-based processing, relating new information to the just-established schemata. Readers switch continually during reading to construct meaning with the least effort.

Also, cultural knowledge influences how text is processed. When two groups of participants, Indians and Americans, read two articles, one about a typical Indian wedding and the other about a typical American wedding, both groups made more culturally appropriate interpretations on texts from their own cultures; they also produced more culturally- based distortions on texts from the foreign culture (Steffensen, Joag-dev, & Anderson, 1979). This study echoed Bartlett's (1932) findings that readers modified or distorted a story consistent with their own cultural understanding. Readers tend to trigger their cultural schemata when they encounter culturally related information. If readers use cultural schemata regardless of whether new information matches the existing cultural knowledge or not, the reader-based processing is at risk of being overused or used inappropriately. Doing so, readers either neglect text-based processing by missing accurate cues and information from the text itself or distort the meaning of the text to reduce its discordance with existing cultural schemata.

Implications for Educators

Educators should take two actions regarding reading process. First, while we highly value reader-based processing and teach students to connect new information with their previous knowledge and experiences deliberately, we should not dismiss text-based processing, which contributes to reading comprehension as well. Clearly, text-based processing must be used when necessary. Meanwhile, educators must teach students how to conduct text-based processing wisely. For example, instead of simply distorting new, incoming information, educators must help readers expand or adjust current schemata by adding on new components or aspects. This way, they may trigger and adjust the existing schemata more appropriately.

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