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Formal Schema Theory and Teaching EFL Reading

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Introduction

Research focusing on reading has taken on great importance in the last two decades. Encouraged by results obtained from first language reading research, practitioners in second and foreign language teaching have begun carrying out experiments in this area.

Reading typically is viewed as an interactive cognitive process as a result of development of schema theory. Reading comprehension research has shown that comprehension is determined not only by the local effects (phrases or sentences), but also by overall organization of text. Each type of text has its own conventional structure. Knowledge of these conventions aids readers in comprehending the text as well as in recalling it later. This kind of knowledge has been called a schema (Bartlett, 1932; Rumerhart, 1980), or more specifically, a formal schema (Carrell, 1983a).

Cognitive and psychological investigation has provided a number of mental processes explaining how schema influences readers' reading and recall. At the same time, many studies on schema theory and reading have been conducted since the 1980s. Though the methods used were varied, most of the research demonstrated that training in formal schemata of readers improved their reading comprehension (Carrell, 1984a, b, c, 1985, 1987; Meyer, 1980; Johnson, 1982). However, almost all of such studies have been conducted in situations in which English is taught and learned as a native language or as a second language rather than as a foreign language.

Therefore, inquirers designed and conducted a study investigating whether or not results derived from previous research focusing on teaching and learning English as a native or foreign language would be replicated in a learning environment in which English is taught as foreign language as in China. Because activation of formal schemata plays an important role in the reading activity of language learning, inquirers are also investigating if activating formal schemata stored in students' minds will facilitate students' reading comprehension.

Review of Literature

Recent research has shown that powerful effects of formal schemata in first language reading comprehension exist for both adults and children (Mandler and Johnson, 1977; Johnson and Mandler, 1980). However, most of this research was conducted in native and second language settings with almost no comparable research done investigating the role of formal schemata in foreign language reading comprehension. As a result, inquirers decided to investigate this interesting phenomenon. The most important point here is that the inquirers' assumption about formal schema is based on schema activation. Previously, research has focused on teaching formal schemata to readers in order to enhance their reading.

In this experiment, Meyer's and Carrell's classification of text types were employed. Four types of top-level structures were used in classroom instruction. In order to achieve schema activation, inquirers utilized methods of asking questions related to the above formal schemata or asking students to complete skeleton outlines of the structures of the texts. As a result, the students were encouraged to process texts in a metacognitive manner. Because this study involved precise process, unexpected problems inevitably arose, so a pilot experiment and precise evaluation system were needed.

Referential statistics included t-test (within groups and between groups) and correlation. Data analysis yielded promising results, demonstrating that explicit, overt activation at the top-level structure of texts could facilitate EFL students' reading comprehension and especially facilitate the students' recall of information presented in the reading materials.

Discussion

An earlier pilot study exposed limitations. The most important limitation involved the fact that the hypothesis was not well validated. In the pilot study, formal schemata were thought to be teachable rather than activatable. So it became apparent that it was improper to teach formal schemata that were already stored in subjects' minds. As a result, the hypothesis was adjusted for the main study. The purpose of the main experiment was to see whether activating subjects' stored formal schemata would influence their reading comprehension.

Data analysis demonstrated that subjects' performance in the Experimental Class (EC) was significantly better than the performance of the Control Class (CC). This demonstrated that overt activating of stored formal schemata about text organization can and does facilitate EFL students' reading comprehension and recall. Subjects in the EC were given implications and chances to recognize and intentionally utilize formal schemata of different structures during their reading. The more conscious they were of the text structure, the higher their scores and the more accurately they recalled the information.

Conclusion

This research study was conducted in the context of China in a teacher education university in the northwest part of China. It yielded very promising results. Results may indicate that activating learners' stored formal schemata will facilitate not only native learners' and ESL learners' reading comprehension, but also facilitate EFL learners' reading comprehension. Formal schemata are less culture-specific than content schemata in their applicability. That is to say, formal schemata are more applicable than content schemata when teaching in the EFL reading classroom.

Although Carrell and Meyer did many research studies and paved the way in schemata theory and reading research, their assumptions mainly were based on training and not activating. The most important point made here is that their experiments were conducted in the native language environment or second language environment. Their results were applicable only in that environment. When similar research is conducted in an EFL setting, we do not know whether previous research findings are helpful or not. Research findings of this study seem to point to the conclusion that activating stored formal schemata also will facilitate EFL learners. As a result, the findings of this study are noteworthy.

Limitation

Although the study yielded promising results, there are limitations. Generally speaking, the experimental design seemed not as precise and subtle as was hoped for. Materials chosen for testing purposes could be further improved. Besides vocabulary breadth and sentence mean length, other parameters could be included in order to quantify testing materials, such as information density and sentence complexity. The sequence of units in the textbook used might not match the testing material in a satisfactory way. Therefore, certain kinds of text in the textbook appeared less than other kinds of text structure, i.e.; some kinds were activated more often than others.

Suggestions and Implications

Further research questions may be derived from this experimental research study. Obviously, many considerations should be taken into the experiment proper, such as:
1) refine the activating techniques, 2) determine the optimum length of classroom activating, and 3) do both kinds of recall (immediate recall and delayed recall, free recall and instructed recall).

In addition, suggestions may be noted for language teachers who are interested in these types of studies. In classroom techniques, units in a textbook may be rearranged according to specific experimental purpose. The experiment may be conducted with regard to other courses such as intensive reading and fast reading course. It also may be investigated whether or not formal schemata will facilitate readers' understanding and analysis of text for non-English majors.

Additional research may be conducted to discover whether the students' different performances are actually differential effects

manifesting at different proficiency levels of EFL. Furthermore, it should be ascertained whether there are any differential effects due to differences in native background or cultural affiliation. Hopefully these problems will be studied by further researchers.

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