

Introduction to the Special Issue Research on Reading Comprehension: Past, Present, and Future

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It is my great pleasure to introduce the International Electronic Journal of Elementary Education (IEJEE) special issue on reading comprehension, the third special issue since the journal was founded. I believe that readers will find the present group of articles to be highly informative, timely, and interesting. The special issue includes a broad range of articles on reading comprehension and a mixture of theoretical, review, and empirical articles that provide a historical context for research in reading comprehension, allow an understanding of current methodologies and instructional techniques used to study comprehension, address effective comprehension instruction and applications, and allow a greater understanding of the most promising avenues for future research.

When asked if I would be interested in being the guest editor of the IEJEE special issue on reading comprehension, I experienced little hesitation and much excitement (as well as some nostalgia). Being an undergraduate student in the early 1970s I can point to the class at Kent State University that led to my life-long interest in reading comprehension. D. James Dooling, who happened to be working on text comprehension at the time, taught the course. His enthusiasm was contagious and students in his class were soon doing their best to understand the rather strange but wondrous passages he brought to class. What led to our understanding of the passages? How could a mere title (e.g., Christopher Columbus) make one version of a passage easy to understand while the absence of the title produce a seemingly incomprehensible text? Why were individuals able to recall texts better than the word lists that other psychologists seemed so fond of studying for so long? Although I enjoyed all of my research experiences as an undergraduate psychology student, including work on memory processes with David C. Riccio (although I confess I was not overly fond of working with rats), my interest in reading comprehension won out and my sense of wonder about how comprehension occurs never left.

It is with a great deal of enthusiasm that I introduce this special issue. Although papers in the special issue are diverse, several important themes emerge. One theme involves what comprehension is; what is the essential essence of comprehension? Other themes are whether comprehension is similar in reading versus other contexts in which it can occur (or not), and whether we can use our understanding of what comprehension is to develop effective instructional techniques.

Arthur M. Glenberg's research on *embodied comprehension* addresses all of these themes in an interesting and creative manner (and thanks again Art for getting your paper to me in July!) and describes an effective technique for teaching comprehension called *Moved By Reading*. As the name of his instructional technique implies, comprehension is fostered through the pairing of textual information and action. Children read stories that relate to particular scenarios and objects and either have the objects and characters described in the scenario available to them physically or on a computer screen. When children read each sentence of a story out loud, they use physical manipulation to act out the information with objects or computer images. *Physical manipulation*, as well as a transfer procedure called *imagined manipulation*, results in dramatic increases in comprehension. In his paper, Glenberg describes various contexts in which the *Moved by Reading* intervention was used quite successfully.

Caitlin McMunn Dooley has contributed a review of the literature on *emergent comprehension*, a topic that is gaining more attention in the field. In her article she examines how best to think of comprehension in very young children and argues that conventional models of comprehension do not truly capture the experiences of young children. She proposes additional components, such as relational and symbolic interactions, that must be taken into account when examining emerging comprehension and provides a review of the literature in this area during the last decade. In related work, Paul van den Broek, Panayiota Kendeou, Sandra Lousberg and Gootje Visser discuss their empirical work on comprehension in very young children, Van den Broek and colleagues examined question-asking interventions with early readers as well as toddlers and report on the results of their findings.

Several authors in the special issue addressed the concept of text structure and the important role it plays in enhancing or hindering comprehension. Children are exposed to certain types of text structures from very young ages, such as those found in narratives or stories, and develop well-formed narrative schemas that allow them to encode, store, and retrieve passage information relatively easily. In the case of other types of text structures, such as those occurring in expository or explanatory texts, this is simply not true. Several investigators in the special issue argue that children get very little exposure to expository or informational texts in their early years, little training on the structure of expository texts or the strategies needed to comprehend them, and are only exposed to such texts as they progress in schools. Such problems directly address two issues that emerged in authors' writings. First, several authors commented on the necessity for children to be exposed more frequently to expository texts at a younger age. Additionally, several authors commented on the necessity of students understanding the structure (or, more accurately, structures) of expository texts.

In an article on the importance of knowledge of a variety of structures used in expository texts, Bonnie J. F. Meyer and Melissa N. Ray provide a rich and thorough historical review as well as an update of *strategy structure research* and *strategy structure interventions*. The authors begin their paper by examining early and basic research on structure strategies, and then review both early as well as recent effective intervention studies based on strategy structure research. The authors also provide a discussion of a variety of expository structures that individuals of all ages must become familiar with in order to allow for easier text comprehension and better text recall. In a second paper, Ray and Meyer discuss the role of selected reader characteristics (comprehension skill, age, and prior knowledge) and text characteristics (the hierarchical organization of higher and lower order propositions as well as three types of expository text structure) when examining the literature on individual differences in younger and older children's knowledge and use of expository text structures.

In several papers authors discuss expository texts that convey science content, as such texts may have factors over and above other expository texts that hinder comprehension. Danielle S. McNamara, Yashuhiro Ozuru, and Randy G. Floyd report on a study in which they examined the role of text genre (narratives and expository texts containing science content), text cohesion (high and low) and selected individual difference variables (children's decoding skills and world knowledge) on reading comprehension, to help explain what has been referred to as the *fourth grade slump*. In a further exploration of the characteristics of science texts, Dianna J. Arya, Elfrieda H. Hiebert and P. David Pearson discuss how lexical as well as syntactic complexity affect children's comprehension. Brandi E. Johnson-Lee and Karen M. Zabucky review a variety of intervention strategies that have been used successfully with older children (middle-school and high-school students) to help students better understand science texts.

In a unique longitudinal study, Linda Baker, Mariam Jean Dreher, Angela Katenkamp, Lisa Carter Beall, Anita Voelker, Adia Garrett, Heather R. Schugar, and Maria Finger-Elam report on *The Reading, Engaging, and Learning project (REAL)*. The investigators began working with students when the children were in the second grade and followed children until the end of the fourth grade. The primary purpose of the investigation was to determine whether the infusion of informational books within classroom libraries as well as specific types of "reading for learning" instruction by teachers would enhance children's reading comprehension, achievement, and engagement. The study is informative not only with regard to specific research findings but also with regard to lessons in unpredictable and unforeseen events when conducting ecologically valid research in real world contexts.

Thus, many of the researchers who contributed to the special issue were concerned with issues of how much exposure to expository/informational texts children receive in their classrooms at an early age as well as how much exposure children have to expository text structure and strategies to help "decode" the structure so that they may better understand textual information. There was a particular focus on expository texts within a science domain, as such texts appear to be particularly problematic for children. Baker et al.'s work indicates that there are important differences in teachers' frequency and manner of use of expository texts, even when such texts have been provided to classroom libraries. These findings reveal the complexity of issues that researchers must take into account when trying to increase younger children's exposure to expository or informational texts.

Some of the researchers in the special issue explored the important role of *working memory* in reading comprehension. Jane Oakhill, Nicola Yuill, and Alan Garnham conducted a study to determine if the relationship between working memory and children's reading comprehension was due to general working memory skills or, rather, modality-specific working memory. They examined children's working memory abilities in three different modalities and studied the relationship of children's skills on those measures of reading comprehension as well as reading accuracy. Hye K. Pae and Rose A. Sevcik explored the role of working memory in children's comprehension and reading fluency. They too used multiple indicators of working memory ability and examined the role of these skills in both first language and second language learners (English-Korean bilinguals in the United States and Korean-English bilinguals in Korea).

In somewhat of a departure from several of the papers in the special issue, Oddny Judith Solheim and Per Henning Uppstad report on a study in which they used an *eye-tracking methodology* in a novel manner. Solheim and Uppstad discuss methodological issues related to the question of how best to validate inferences on the basis of comprehension test scores and suggest that validation requires different types of converging evidence. The authors

collected eye-tracking data during children's first reading of a text as well as when children read the text and answered questions about it. The relations between these data and comprehension were explored. In Yousif Alshumaimeri's research we move from examining a particular type of methodology to investigate inferences to examining Saudi EFL students' preferences for different reading methods (oral, silent, and sub-vocalizing). Alshumaimeri examined whether Saudi students had preferences for reading mode, reasons for preferences if they existed, and effects of reading mode on comprehension.

Finally, Danielle S. McNamara and Panayiota Kendeou identified five critical findings in research on reading comprehension and discussed applications of these findings for educational practice. The research findings and applications the authors discussed were in the general areas of the uniqueness of decoding and comprehension skills early in children's lives, the relations between processes and products in comprehension research and instruction, the importance of the development and fostering of inference skills, the multi-faceted nature of comprehension, and the need to be aware of limitations of standardized tests of reading comprehension. The McNamara and Kendeau paper should be accessible and informative to educators in the field.

I would like to express my gratitude to many individuals for their contributions to the special issue. First, many thanks to the authors for not only contributing such excellent papers but contributing them in the time frame necessary to develop the special issue. Thanks also to several gracious and generous colleagues who reviewed for the special issue in a much shorter than usual time period and who produced very helpful reviews. The names of reviewers appear elsewhere in the issue. And, finally, I would like to thank the editorial team at IEJEE for giving me the opportunity to develop the special issue, which I enjoyed more than I can say. Many thanks to Kamil Ozerk for his kind and comforting words. They served to increase my self-efficacy for the new role I found myself in as well as made me smile. And I am deeply indebted to Turan Temur for his guidance and support. I am not sure that a week went by without Turan receiving an email from me (perhaps a paper attached, perhaps a question, perhaps a request to do something, perhaps a request to undo something). He handled each of my e-mails, questions and requests with kindness, patience and good humour.

So on to the special issue and let the reading comprehension begin. I hope that readers will enjoy the papers in the special issue and learn from them as much as I did.