Critical Review:
Does Narrative Instruction Improve Reading Comprehension in Children with Learning Disabilities?

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This critical review examines the literature measuring the effectiveness of explicit narrative instruction in improving reading comprehension in children with learning disabilities (LD). Study designs include: literature review [1], single-subject 'n of 1' [1], and multiple-baseline [2]. Reference to additional sources was used for background information within this paper. Overall, the evidence gathered from this review is positive. Further experimental investigation is required to determine if narrative instruction is effective in improving reading comprehension. Clinical implications and recommendations for future research are also discussed.

Introduction

Learning disabilities refers to a number of disorders manifested by significant difficulties in the acquisition, retention, organization, understanding, or use of verbal and non-verbal information (Learning Disabilities Association of Canada, 2002). LDs range in severity and affect listening, speaking, reading, writing, and mathematical abilities. A central nervous dysfunction is presumed as the underlying cause, thus these disabilities are intrinsic to the individual. LDs may occur concomitantly with other conditions including: behavioural, attentional, or emotional disorders, sensory impairments, or other medical conditions but it is not the direct result of those conditions. Children with LD receiving speech and language services are reported to comprise 60.9% of School-Based SLP caseloads (ASHA, 2012). It is one of the fastest growing areas in need of services.

Reading comprehension or the derivation of meaning from printed words is a valued skill in today's society and narrative abilities predict later academic performance (Crais & Lorch, 1994). Written material is used in educational settings to learn and as a method of evaluation. Young students with LD experience difficulties in reading comprehension and as a result are placed at a distinct disadvantage (Montague, Maddux, & Dereshiwsky, 1990). One way to build and develop reading comprehension is through direct instruction in story grammar.

Story grammar refers to a hierarchical set of rules that specify constituents of a story, their organization, and the logical relationships that connect them. These rules provide a framework that facilitates comprehension by analyzing stories in meaningful parts.

Different story grammar versions exist (Freedle, 1979) but they share similar properties. Stories are divided into two main constituents: the setting and the event structure. The event structure is further divided into five subordinate constituents with their interrelations. The hierarchical organization is as follows: *Setting- Event-Episodes: Initiating event, Internal response, Attempt, Consequence, and Reaction* (Stein & Glenn, 1979). In this review, Stein and Glenn's (1979) story grammar system was chosen because it has been used in previous studies investigating the effects of story grammar and reading comprehension. It has also been modified into a story mapping system.

Another approach that has been used in research is story mapping. It is a less complex pictorial system, that shares components of Stein & Glenn's (1979) story grammar. The structure consists of the *setting, problem, goal, and resolution*. Significant events that contribute to goal attainment or problem resolution are placed between the problem and resolution. Story maps have been used in teaching students to understand the organization of stories and to generate story-related questions such as: "who is the main character?" (Idol & Croll, 1987).

Research has demonstrated the effectiveness of direct narrative instruction on improving reading comprehension in children with LD. Stetter et. al. (2010) reviewed this area of literature and identified narrative instruction using story grammar and story mapping as an effective and valuable strategy that can assist students with LD to further develop their understanding of narrative texts. Narrative instruction is a valuable strategy that has supported positive reading comprehension outcomes.

Objectives

The primary objective of this review was to provide a critical evaluation of the existing literature regarding the effectiveness of explicit narrative instruction on reading comprehension for children with learning disabilities. The secondary objective of this paper was to suggest clinical implications and propose recommendations for future research.

Methods

Search Strategy

Articles related to the topic of interest were found using the following computerized databases: ProQuest, PsychINFO, Google Scholar, and PubMed. Keywords used for the database search were as follows: [(Story grammar) OR (narrative instruction) OR (story structure) OR (narrative structure) OR (text structure) OR (narrative text) AND (reading) AND (reading comprehension) AND (school aged) OR (students) AND (student*) AND (learning disable*)]

The search was limited to articles written in English. Reference lists of articles were manually searched for further studies relevant for the purpose of this critical review. In addition, relevant articles meeting the inclusion criteria referenced within acquired articles were sought.

Selection Criteria

Studies selected for inclusion in this critical review were required to investigate the impact of narrative instruction on reading comprehension in children with learning disabilities. No limits were set on the study design, outcome measures, date of publication, or geographical location of research participants.

Data Collection

Results of this literature search yielded 4 articles congruent with the aforementioned selection criteria: literature review [1], single-subject 'n of 1' study [1], and multiple-baseline studies [2].

Overall, evidence gathered from this review is positive. Implications for clinical practice and recommendations for future research are provided. Results are organized from the most recent to the oldest evidence.

Results

Stetter & Hughes (2010) published a level IV descriptive literature review of data compiled from 1960 to 2008. Twenty-two experimental and quasi-experimental studies were included. All the studies focused on a) understanding the story grammar abilities of students with LD or b) investigating the impact of story grammar on reading comprehension in students with LD. Four studies included in the discussion examined the question of how students with LD compared to typically developing students in their understanding of story grammar. Students were asked to perform oral story retelling tasks. A detailed discussion of these studies is not included because it is outside the scope of this review.

The Effects of Story Grammar Instruction: Eighteen studies were included. The strategies to assist students with LD in developing their knowledge of story grammar included: modeling, story mapping, and teaching metacognitive strategies.

Modeling (direct instruction): Involved demonstrations of when and how to use story grammar. Demonstrations included teachers talking through their own thinking aloud. The goal of this strategy was the gradual transfer from the teacher's model to student mastery. The three studies that investigated modeling used different age groups: school-aged [1] and high school students [2], different reading materials, and varied the length of intervention. It is unclear whether developmental maturity may be a confounding variable and there may be other variables at work that have not been measured. However, the researchers concluded that modeling was found to be an effective method with older students.

Story Mapping: Ten studies were included in this subsection. Presenting students with a visual story map led to improvements in reading comprehension. One limitation of this strategy is that students with LD may experience difficulties with writing. This variable was not controlled and may have influenced the applicability and use of the strategy.

Metacognition: Students with LD experience difficulty with metacognitive skills. Results from five studies indicated that students' reading comprehension improved when they were jointly instructed on the elements of story grammar and when and how to apply them. One limitation is the memory demands. There may be cognitive factors that influence the use of this strategy.

Although the literature review provided a useful summary chart, the studies examined by the authors related to reading comprehension could have been discussed more specifically. In particular, discussions of oral story retelling could have been omitted or presented in a separate review. The review could have discussed the differences in severity levels of LD and possible effects on reading comprehension, the appropriateness of the chosen reading comprehension tasks, the populations investigated, and developmental and/or maturational effects.

This review is valuable because it maintains that the research is favorable for the use of narrative instruction with students with LD for improvement of reading comprehension. There is a need to conduct high-level experimental studies with a larger number of subjects to understand the underlying cognitive mechanisms involved in learning the strategies and how they apply

to LD. The studies included were principally single-subject designs thus generalization is difficult to extrapolate to the larger population. A meta-analysis is not possible given that there are no randomized control studies on the topic. The research evidence indicates that students with LD do benefit from explicit narrative instruction with increases in reading comprehension.

Overall, Stetter & Hughes suggest that a considerable amount of experimental research be conducted in order to determine the effect of narrative instruction for students with LD as the causal relationship as of yet, remains unknown. They also suggest comparative studies of story grammar and other comprehension strategies in order to evaluate the different types of intervention.

Boulineau, Fore III, Hagan-Burke, & Burke (2004) conducted a level III, single-subject, repeated measures, three-phased study to examine the effects of story mapping on reading comprehension. The purpose was to replicate previous research supporting the effectiveness of story mapping and to examine the effectiveness of narrative instruction on reading comprehension in school-aged children with LD.

Six school-aged children aged 9;6 to 10;7, three males and three females identified with specific learning disability (SLD) and receiving special education services in a resource classroom for students with mild disabilities participated. Students selected for participation in the study met the following criteria: a) had no previous exposure to any story mapping instruction b) spent at least one class period a day receiving reading instruction in a special education resource setting c) scored a grade equivalence of at least 2.0 on the Kaufman Test of Educational Achievement (K-TEA) word identification subtest and a grade equivalence of at least one grade level below grade placement on the comprehension subtest, and d) attended 95% of school days during the previous grading periods. All six children had previously worked with the teacher who provided the intervention and participated in thirteen sessions. Direct instruction was provided in a special education classroom with other students who did not participate in the study. Information and data was collected at each phase through indirect observations, and individually completed story maps.

Boulineau et al. (2004) clearly described the procedure of the study. During the intervention, the children received daily instruction using story maps. They described many important factors such as: the phases of the study, criterion for initiating the next phase, collection of reliability data, procedural reliability across all phases, and discussion of interrater agreement. Adequate detail was provided when introducing and explaining these extra considerations.

The mean percentage of total correct story grammar elements was calculated for all participants at each phase. A detailed analysis of each participant's performance was provided. All six children's ability to identify story grammar elements via story mapping improved. The percentage of correct story grammar elements increased from baseline to intervention. Improvements in reading comprehension were also observed. Effects were maintained once intervention was withdrawn.

One limitation of this study was that the authors used means to compare participants. The data was descriptive and functional relationships could not be established between performance and story grammar. Another limitation is the small number of participants; generalizability to the general population is not possible. The authors did not discuss how the reading material was selected. Maintenance was measured three weeks post intervention and there are no follow-up studies monitoring long-term effects. A strength of this study was that it replicated previous findings.

Considering the strengths and limitations, this study demonstrates suggestive evidence for the use of story grammar via story mapping in improving reading comprehension.

Gardill & Jitendra (1999) conducted a level III, single-subject, repeated measures, multiple-baseline study. The purpose was to investigate the effectiveness of direct instruction of an advanced story map procedure on the reading performance of children with LD.

Six children, aged 12;6 to 14;8 with LD, participated. One female with an additional diagnosis of neurological impairment was included. All six children had active Individualized Education Programs (IEPs) and were receiving reading or language arts instruction in a resource classroom for part of the school day. Students selected for participation in the study met the following criteria: a) identified by the State special education eligibility standards as being LD b) teacher ratings indicating reading comprehension difficulties c) students had to meet criteria on the word identification and passage comprehension subtests of the Woodcock Reading Mastery Test-Revised. All instruction took place in a quiet room. Instruction and testing occurred in 40-to-50 minute sessions during regularly scheduled resource classes. Instruction and practice occurred in paired groups. No student was receiving additional reading instruction during the study. Information and

data was collected at each phase through indirect observations, percentage of correctly identified items on completed story maps, and a student questionnaire. A story-retelling task was included to compare performance with written tasks.

Gardil & Jittendra (1999) clearly described the experimental procedures of the study. They described many important factors such as: the materials used, teaching scripts, scoring protocols, the phases of the study, criterion for initiating the next phase, intervention fidelity during baseline and intervention sessions, and interscorer reliability. The reading passages were taken from the Silver, Burdette, and Ginn (fifth-and sixth grade) Basal Reading Program that was employed in the school board. The researchers used different reading materials during the instruction and testing phases.

Percent correct scores on story grammar and comprehension questions were calculated for all participants at each phase. Mean percentage scores on comprehension measures were calculated as well.

A detailed analysis of each participant's performance was provided. Improvements in reading comprehension were observed for all six children. Incorporating direct instruction and practice facilitated comprehension. The percentage of correct story grammar elements and comprehension increased from baseline to intervention. Effects were maintained for two weeks post-intervention.

One limitation of this study was that the authors used means to compare participants, which may be an overestimate of their performance. The data was descriptive and functional relationships could not be established between performance and story mapping or comprehension. Another limitation is the small number of participants; which reduces the confidence in the results. Also, one participant had a concomitant condition that may have affected her performance. There is no description of the reading passages (i.e., length, topic). Instruction was provided in pairs, outside of the classroom, and teachers used structured scripts. This is not representative of typical classroom instruction or inclusive practice. It is unclear whether structured instruction or small working groups contributed to reading comprehension.

A strength of this study was that it replicated previous findings and suggested a new critical variable: practice time. Additional practice time was found to be beneficial in promoting identification of story grammar elements. The authors also found that the students were able to generalize skills. A unique feature of this study was that the authors sought the student's input on the process.

Considering the strengths and limitations, this study demonstrates suggestive evidence for the use of story mapping in improving reading comprehension.

Idol & Croll (1987) conducted a level III, single-subject, repeated measures, multiple-baseline study. The purpose was to investigate the effects of story map instruction on reading comprehension of children with LD.

Five children, aged 9;5 to 12;11 with LD, from three elementary schools participated. Four children had intelligence scores on the Wechsler Intelligence Scale for Children (WISC-R) that ranged from 87-to-89. One child's IQ score was unknown because the parents did not consent to releasing the score. Four students were receiving services in resource classrooms. One student was placed in a classroom for students with learning disabilities, behavioural disorders or other needs.
The researchers used different reading materials during the instruction and testing phases. Adequate detail was provided when introducing and explaining these extra considerations.

Baseline, intervention and post-treatment measures of reading comprehension were collected and analyzed by means of percentage of correct responses. The Stanford Diagnostic Reading Test and the Nelson Reading Skills Test: subtests in reading comprehension were administered pre and post-intervention. Four students achieved a six-month gain on one or more standardized tests of reading comprehension. All children participating in the study demonstrated improvement in their reading comprehension, following the implementation of the story mapping strategy and in conjunction with direct instruction.

An ANOVA with repeated measures across four student's data was used to validate the overall improvements in reading comprehension across all phases. The author's reported that one student's data was not used because their performance was not stable and thus maintenance data could not be collected for that individual. Statistically significant differences were found between phases. The data was manipulated in a statistically sound way. Another ANOVA yielded a significant difference between baseline and intervention for all five students.

A limitation of this study was the small subject pool, which restricts the statistical value of the findings. The participants were not balanced in gender or cultural background.

A strength of this study was that it provided a detailed data analysis and standardized tests were used to monitor progress.

Considering the strengths and limitations, this study demonstrates suggestive evidence for the use of story mapping in improving reading comprehension.

Discussion

The purpose of this review was to examine the effects of direct narrative instruction on reading comprehension in students with learning disabilities. The literature to date suggests that narrative instruction can improve reading comprehension. While all of the reviewed studies provided a positive outcome, there were methodological limitations within these studies. Results should be interpreted with caution.

The research designs were not truly experimental. Groups were not randomized, and there were no control groups. This can produce biased results and as a result they cannot be generalized without robust research evidence.

It is recommended that greater consistency in the testing material be implemented to minimize the variability and improve the generalizability of results across studies.

Another limitation is that the studies were all out of the United States school system. Educational boards and districts vary in the services provided and the students that attend. These considerations may limit the applicability of the results.

Finally, it is important to consider the limited sample group sizes. The small sample sizes limits the level of statistical power that can be attributed to the results.

Future research would be beneficial to provide additional information to better answer the research question posed in this paper. In order to improve the level of evidence provided by the existing literature, it is recommended that future research take the following into consideration:

1. Studies should consider increasing the sample sizes. Results will have more statistical power and be more generalizable. This would result in greater applicability to clinical practice.

2. Future research should endeavor to replicate and validate the worth of narrative instruction for improving reading comprehension.

3. Greater experimental control is needed to evaluate narrative instruction, reading comprehension, and participant selection.

4. Studies should include a more naturalistic intervention approach. Instruction should occur in a classroom setting rather than a pull-out, individual approach.

Clinical Implications

While there are some limitations to these studies, there are also some important clinical implications to be considered. As a group, the articles provide suggestive evidence that narrative instruction may facilitate reading comprehension in children with learning disabilities. Replication of these findings adds confidence in the results. Although, caution is warranted in interpreting these results, clinicians may find narrative instruction to be helpful in improving reading comprehension difficulties in this population.

With more evidence, this finding would be particularly relevant to the intervention approaches taken by SLPs in the future when remediating reading comprehension difficulties. Narrative instruction can be taught in groups using commercially available products. As well, reading comprehension can be monitored through performance on novel reading material matched for content, length, and structure. SLPs should recognize the potential value in collaborating with teachers in order to integrate narrative instruction into regular classroom activities. Through discussion and collaboration, clinicians and teachers can contribute to the direction of future interdisciplinary research and remediating reading comprehension difficulties.

References

American Speech-Language-Hearing Association. (2012). *2012 Schools Survey report: SLP caseload characteristics.* Available from www.asha.org/research/memberdata/schoolssurvey/.

Boulineau, T., Fore, C., III, Hagan-Burke, S., & Burke, M.D. (2004). Use of story-mapping to increase the story-grammar text comprehension of elementary students with learning disabilities. *Learning Disabilities Quarterly*, *27* (2), 105-121.

Crais, E. R., & Lorch, N. (1994). Oral Narratives in school-aged children. *Topics in Language Disorders, 14,* 13-28.

Freedle, R. O. (1979). New directions in discourse processing. Norwood, N.J.: ABLEX Publishing Corporation.

Gardil, M.C., & Jitendra, A.K. (1999). Advanced story map instruction: Effects on the reading comprehension of students with learning disabilities. *The Journal of Special Education*, *33* (1), 2-17.

Idol, L., & Croll, V.J. (1987). Story-mapping training as a means of improving reading comprehension. *Learning Disability Quarterly*, *10* (3), 214-228. Learning Disabilities Association of Canada (2002) Retrieved March 1, 2013, from: http://www.ldac-acta.ca.

Montague, M., Maddux, C.D., & Dereshiwsky, M.I. (1990). Story grammar and comprehension and productions of narrative prose by students with learning disabilities. *Journal of Learning Disabilities*, *23* (3), 190-197.

Stein, N.S., & Glenn, C.G. (1979). An analysis of story comprehension in elementary school children. In Freedle, R. O. (Ed). New directions in discourse processing. Norwood, N.J.: Ablex Publishing Corporation.

Stetter, M.E., & Hughes, M.T. (2010). Using story grammar to assist students with learning disabilities and reading difficulties improve their comprehension. *Education and Treatment of Children*, *33*(1), 115-151.