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Written Language Performance Following Embedded Grammar Instruction

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KEYWORDS: grammar, contextualized, writing, sentence combining, English Language Arts



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This study explored whether presenting grammar instruction within the context of reading and writing would improve writing skills. The participating schools were using a traditional grammar instruction in which grammar lessons were predominately taught using worksheets and were presented separately from other reading and writing activities. This was termed Discrete Grammar Instruction (DGI). The researchers introduced a contextualized grammar instruction approach, termed Embedded Grammar Instruction (EGI), which taught grammar within authentic contexts of reading and writing. Students in grades three through eight were assigned to either the EGI group (N = 164) or the DGI group (N = 156). Two subtests of the Test of Written Language- Third Edition (Hammill & Larsen, 1996) were given at pre- and posttest: Sentence Combining, which is a measure of grammatical complexity, and Contextual Conventions, which is a measure of written conventions (i.e., punctuation and capitalization). Following six weeks of instruction, the EGI group outperformed the DGI group on sentence combining ability, but no statistically significant differences were observed between the groups in use of contextual conventions. The results suggest that teaching grammar in context yields improvements in written grammar following a very short period of instruction and merits further exploration.

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The teaching of grammar, including identifying the parts of speech within sentences of increasing complexity, is integral to the language arts curriculum. Certainly, having facility with grammar is critical to reading and writing from third grade and beyond as children transition from “learning to read and write” to “reading and writing to learn,” in which they are expected to read and compose written passages with increasing grammatical accuracy and complexity. However, research in the study of grammar reveals that the traditional methods of teaching grammar do not have the desired impact on reading, oral

language, or writing. There is no high-quality evidence that discrete instruction on the parts of speech or syntax has any influence on writing quality or accuracy of students aged five to 16 years (Andrews et al., 2004, 2006; Graham & Perin, 2007). In this study, we sought to examine whether greater gains in students' writing skills would occur following grammar instruction that was embedded within students' reading lessons compared to traditional (discrete) grammar instruction.

Syntactic Awareness

The English language is highly dependent on word order to communicate meaning and intent. The conscious awareness of the syntactic structure of sentences and the ability to manipulate them is termed *syntactic awareness* (Kuo & Anderson, 2008). Syntactic awareness is highly correlated with both word recognition and comprehension (Tunmer, Nesdale, & Wright, 1987). It also enables readers to reinterpret text when unexpected grammatical structures are encountered or ambiguity is present. Nation and Snowling (2000) showed that children who have poor comprehension perform poorly on syntactic awareness tasks such as word order correction. Other researchers have shown that both reading fluency and comprehension are highly correlated with syntactic awareness (Cain, 2007; Mokhtari & Thompson, 2006).

Surprisingly, little research has explored the relationship between syntactic ability or syntactic awareness and writing ability. Loban (1976) showed high correlations between oral syntax and written syntax, with trends in written language occurring approximately a year after first observed in oral language. Sentence combining, or generating complex sentences from two or more simple sentences, requires a high level of syntactic awareness. To combine sentences, clauses must be mentally moved, redundancies deleted, and markers such as conjunctions or relative pronouns added in the appropriate position to generate compound and complex sentences. The meta-analyses of both Hillocks (1986) and Graham and Perin (2007) both showed sentence combining to significantly improve the quality of students' writing across grade levels four to 11.

The relationship between syntactic awareness and writing has not been specifically studied but can be viewed as integral to the process of writing. Writers spend considerable time first choosing and then editing their word order choices as they reflect and make conscious decisions about sentence length, grammatical correctness, and expression of intended meaning and tone. It seems intuitive that studying grammar, including awareness of the structure of syntax and morphology, would lead to better writing. The finding that traditional study of grammar does not elicit expected results, though, suggests that the approach does not provide learners with a context for acquiring appropriate syntactic and morphological awareness skills.

Traditional Grammar Instruction Methods

Traditional instruction in grammar is very different from reading and writing. Reading and writing require the coordinated use of word order with meaning and intent for purposes of communicating coherent discourse. Readers and writers expect written passages to make sense. In contrast, the prevalent method of English language arts (ELA) involves exercises and drills of isolated skills, typically presented on worksheets (Fearn & Farnan, 2007; Kiuahara, Graham, & Hawken, 2009). Such grammatical exercises focus solely on form, such as identifying a part of speech or a grammatical structure, a task requiring the student to ignore the meaning of the sentence. The learner lacks any emotional response to the target form on a worksheet because without context the word choice is meaningless (Weaver, 1996). In contrast, a contextualized passage such as *The shy boy wanted some*

strawberry ice cream but was too timid to ask. When the smiling woman handed him a large chocolate cone, he burst into disappointed tears can be explored in a discussion. By comparing the passage with and without the adjectives, students can explore how they enrich the meaning and affective response to the event (Hidi & Renninger, 2006).

Further, the series of worksheet sentences serve no discourse function, as the topic, subjects, and actions are unrelated and change with each sentence. It is not surprising that the skill does not generalize to actual reading and writing, as the context of learning has none of the properties of functional language use. It may be that the problem with language arts instruction is not *what* we are teaching, but *how*.

Teaching Grammar to Improve Writing

A meta-analysis of writing instruction conducted by Graham and Perin (2007) revealed a range of approaches or principles that have a strong and positive effect on writing. These approaches include teaching writers how to: plan, revise and edit; summarize reading material to learn to write concisely; learn to write increasingly longer, more complex sentences; write for a specific goal; and use visual representations such as graphic organizers to plan before writing. Throughout, teachers provide good models of writing and demonstrate how to analyze them for specific characteristics. Each of these findings support that a) good writing emerges from practice with meaningful, authentic opportunities to write, b) in the process of writing students respond to explicit instruction such as planning and organizing before writing and learning to combine ideas into complex syntactic structures, and c) using good models of writing supports understanding the characteristics of good writing.

Consistent with Hillocks' (1986) meta-analysis, Graham and Perin's (2007) meta-analysis also found discrete teaching of grammar had no positive effect on writing. However, one study (Fearn & Farnan, 2007) focused on grammar with a finding of strong and positive effects on writing. In this study, two classrooms of students were taught using traditional grammar instruction while two were taught using a functional grammar approach. In both conditions, teacher-led lessons were taught twice weekly with the whole class for five weeks. Each week, a different grammatical form was targeted (i.e., verbs, nouns, adjectives, and dependent and independent clauses). In the traditional approach, the grammatical form was identified and defined, then practiced using a variety of worksheets. Immediately after the lesson, the students followed the stages of the writing process, using the entire 45-minute period to write. They also wrote the other three days of the week.

The functional grammar lessons were implemented for 10–12 minutes twice weekly. The focus on function meant students engaged in activities to help them discover what the grammatical element does in a sentence. For example, students selected one verb from a list and created a series of sentences of various lengths containing that verb. In another activity, students chose a verb and then were instructed to write “as much as you can” and “include as many verbs as you can” on the topic in one minute. Activities varied, but all focused on engaging students in thinking about the function of the grammatical element. Twice weekly, the functional grammar group also engaged in extended writing for the class period. The results indicated that both groups scored essentially the same on the grammar test and mechanical accuracy in writing at posttest. However, the functional grammar group scored significantly better on a holistic rating of writing, despite having less instructional time spent on writing each week.

This study suggests that syntactic awareness, as exemplified by knowledge and identification of grammar terms, does improve writing but only when students understand

the function of these elements within meaningful writing. Fearn and Farnan (2007) concluded that grammar can influence writing only when grammar and writing share the same instructional context. If students understand how grammar functions, they learn the names for parts of speech just as they learn names associated with any other meaningful concept if they understand how that concept functions. Having names for grammatical elements is useful when grammar makes sense.

Embedded Grammar Instruction

The Fearn and Farnan (2007) study focused on production, or engaging students in generating oral and written sentences that focused on a grammatical element such as nouns or verbs. However, production was limited to sentences that are within the student's current level of competence. Loban (1976) showed that the oral syntactic abilities of poor readers and writers were lower than the skills of higher-level readers on every measure, including the number of embedded clauses, types of clauses used within complex sentences, and elaboration of noun and verb phrases. Further, differences were apparent as early as Kindergarten, and lower achievers never caught up with their peers. In fact, they showed a slower rate of gain than higher-achieving peers each year, which left them further behind with each grade level.

To make greater gains, students need to be exposed to good models of sentences that are more difficult than they could write or even orally produce. Students should be engaged in functional analysis of the sentences, in which the use of grammatical terms would help them conceptualize the way complex language works to express meaning. Further, the use of visuals would be useful to provide a stable cue to the meaning and function of a grammatical element while students engage in functional analysis. Each of these principles adheres to the findings of good writing practices revealed by Graham and Perin's (2007) meta-analysis.

Because we wanted models of grammar more complex than students typically produced, and because auditory memory for oral sentences is too transient for analysis, we used reading passages. The reading passages were above many of the students' readability level, but readability, was unimportant, or even desirable, as the passages were read and analyzed as an oral language lesson focused on the written sentences. We termed these lessons embedded grammar instruction (EGI). Instead of identifying and describing grammatical elements present in the sentences (i.e., discrete grammar instruction, or DGI), students were guided to reconstruct the author's word, syntax, and punctuation choices. This enabled students to analyze and reflect on more complex grammar than they could produce, while actively engaging in the reconstruction process using the author's word choices, syntax, and punctuation to learn how complex language works.

We predicted that a focus on functional grammar within a meaningful context (i.e., EGI) would improve syntactic awareness and generalize to writing skills without direct instruction or practice in writing. Our research questions were:

1. Will EGI result in greater grammatical complexity than traditional DGI as measured by sentence combining skills?
2. Will EGI result in greater gains in spelling, capitalization, and punctuation than traditional DGI as measured by use in a written narrative?

Method

A pretest–posttest control group design (Hegde, 2003) was employed to investigate the effect of EGI on the mastery of sentence combining and use of written conventions as measured using a standardized test of writing.

Participants

The study took place in six upper-elementary (third, fourth, and fifth grades) and four middle school (sixth, seventh, and eighth grades) classrooms in rural schools in southern Louisiana. The schools were among those having the lowest performance scores in the state on the previous year's state and national assessments. Each of the schools ranked in the unacceptable range for language arts. The percentage of African American students in the overall school populations ranged from 65% to 93% of students (mean = 82.14%). Caucasian students ranged from 1% to 28% (mean = 16.29). The percentage of students eligible for free or reduced-price lunch ranged from 67% to 97% (mean = 82.79%).

Twenty-four teachers agreed to participate. They ranged in age from 28 to 49 years (mean = 35.46). All the teachers were certified in either elementary education or English language arts in secondary education, with 77% holding bachelor's degrees and 33% holding graduate degrees. Ten of the teachers were African American and 14 were Caucasian, including 23 females and 1 male. The number of years teaching ranged from 5 to 20 (EGI mean = 13.16; DGI mean = 13.13). Teachers were matched for grade level taught, education level, and years of teaching experience, and then they were randomly assigned to either the EGI or DGI teaching condition. Participants, 320 students in grades three through eight, were selected from those returning informed consent forms. The demographic profiles of the EGI and DGI participants are shown in Table 1.

Table 1
Demographic Composition of Students in Embedded and DGI Conditions

	Age (years; months)		Ethnicity			Free/ reduced lunch	Repeated a grade	Below average reading score
	Range	Mean	AA	CA	Other			
EGI group (<i>n</i> = 164)	8;8- 15;2	11;3	70%	30%	0%	80%	22%	37%
DGI group (<i>n</i> = 156)	8;5-14;9	10;9	67%	32%	1%	81%	21%	37%

Pre- and Posttest Procedures

All students completed the Sentence Combining and Contextual Conventions subtests of Test of Written Language, Third Edition (TOWL-3; Hammill & Larsen, 2009) at the beginning of the study (Form A), and then following six weeks of instruction (Form B). The TOWL-3 is a standardized instrument with norms for ages seven to 17 years. The classroom teachers administered the TOWL-3 using instructions for group administration during regular classroom time at their schools. To determine if the subtest standard scale scores of the experimental and control groups were equivalent at pretest, a two-way analysis of variance was performed. The results indicated that students in the experimental and control classrooms did not differ significantly at pretest ($p < .000$).

The Sentence Combining subtest requires students to combine two or more kernel (i.e., “simple”) sentences into a single sentence. The resulting sentence must be grammatically correct, unambiguous in meaning, and include all of the elements presented in the kernel sentences, including verb tense. Students needed to display sufficient syntactic awareness to successfully create such a sentence, reducing redundant information and recombining ideas using noun-phrase expansion and sentence coordination and/or subordination. For example, given the kernel sentences *Ann bought a book* and *She read it quickly*, students should combine them to indicate a temporal sequence. That is, the resultant sentence should indicate that Ann buying the book precedes her quickly reading it. Creating a sentence such as *Ann read a book quickly, so she bought it*, suggests that the student is insensitive to the temporal relationship implied in the kernel sentences.

Students must also demonstrate sensitivity to the parts of speech of each element in the kernel sentences to combine those sentences effectively. For example, when presented with the kernel sentences *Canada is a country* and *It is in the northern hemisphere*, students who are not sensitive to parts of speech may produce a sentence such as *Canada is a country in the northern*, suggesting that they are unaware that northern functions as an adjective.

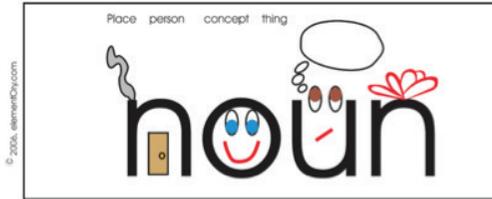
The Contextual Conventions subtest requires students to generate a story in response to a picture prompt. A rubric is used to analyze the story for written conventions, including capitalization, spelling, use of paragraphs, quotation marks, contractions with apostrophes, terminal punctuation, and commas. These skills require a wide range of knowledge, including phonemic awareness, orthography, syntactic awareness, morphological awareness, discourse awareness, and pragmatic knowledge of speaker-narrator roles.

Materials

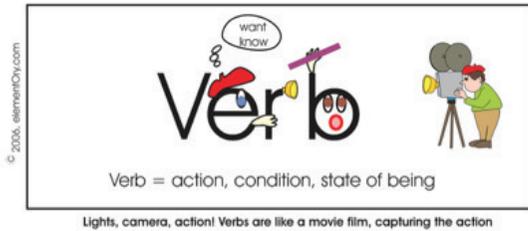
Instructional Materials. The 24 lesson plans, reading passages, and worksheets for both the DGI and EGI conditions were provided in a format consistent with classroom equipment (i.e., document camera or other projector). Colored markers were available for teachers to write, underline, or in other ways emphasize information during the group lessons.

Visual mnemonic pictures. During EGI lessons, the discussion was accompanied by six visual mnemonic picture words that depicted parts of speech (termed visual grammar cards) and four visual mnemonic pictures depicting punctuation marks (Norris, 2006). The teacher used the pictures to define these concepts and displayed them as respective parts of speech and/or punctuation that were explored during the ELA lessons. These mnemonic pictures reduced memory load by providing an external representation of the grammatical

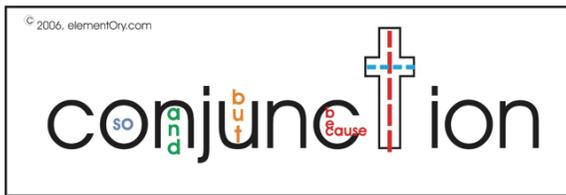
element or punctuation and its meaning. For example, the meaning of the word *noun* was depicted on the letters as a door drawn inside of the “n” (place), a smiling face drawn inside of the “o” (person), a thought bubble above a person depicted on letter “u” (concept), and a gift bow on top of the final “n” (thing). See Figures 1–3 for examples of visual grammar cards.



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 Figure 1. Visualized grammar card: noun.



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 Figure 2. Visualized grammar card: verb.



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 Figure 3. Visualized grammar card: conjunction.

During instruction, if the students were unable to identify the grammatical part of speech for a word such as “groundhog,” the teacher would use the “n” of “noun” with the gift bow to cue that the object was a “thing” that could be in the gift box.

Procedures for ELA Instruction

Each classroom teacher delivered instruction in either EGI or DGI conditions during the regular ELA period. The same skills were taught in both groups, selected from the state English-Language Arts standards. These standards included a) vocabulary, b) subjects and predicates, c) punctuation and sentence types, d) parts of speech, e) syntactic structure, and f) summarization and visualization of sentences. The treatment activity was implemented for approximately 15–20 minutes each Monday through Thursday for 6 weeks, resulting in 24 instructional sessions. All materials were provided to the teachers in both instructional conditions.

Discrete Grammar Instruction. The control group classrooms continued to use the traditional worksheet approach to grammar instruction. Each teacher verified this was the primary strategy for teaching the targeted skills in his or her class. To assure that all of the skills addressed in the EGI condition were also addressed in the DGI condition, worksheets were matched with the skills in EGI lessons. A grade-appropriate worksheet was presented each day to correspond with a variation of the target skill. For example, during the first week participants in the DGI group completed worksheets targeting nouns: singular and plural nouns, pronouns, and nouns as direct or indirect objects. Only one skill was addressed at a time, and once the skill was taught it was not revisited in successive lessons except as a variation (i.e., nouns on day one, singular/plural nouns on day two, and so forth).

In this condition, the worksheet was projected on a screen and each of the students had his or her own copy. The teacher would define the targeted grammar element and then present several examples from the worksheet. They were then asked to complete the first numbered sentence on the worksheet independently. Students were called on to give their answers, and the teacher either acknowledged a correct response or provided corrective feedback about an incorrect response.

Embedded Grammar Instruction. In this condition, the targeted skills were taught within the context of expository text passages on topics such as Walt Disney, Groundhog Day, and blues music. One text was read over the course of a week, with one to two paragraphs analyzed each day. Each lesson included a discussion of the six targeted skills.

In accord with the lesson plan, the teachers introduced one paragraph of the text. The teacher read the entire paragraph aloud while students followed along, reading the text from a projected screen. Next, the teacher pointed to the first sentence within the paragraph and began a scripted conversation for analyzing the sentence with their students. A researcher-created passage about blues music follows:

Have you ever heard of someone singing the blues? Blues is a type of music that is distinctive because of “blue notes.” Blue notes have a sad sound so people also refer to them as “worried notes.” When you sing a scale from low to high notes, you are singing the major notes. However, any note can be dropped a half tone and it will sound flat; these are called minor notes. Those are the blue notes. Blues music switches back and forth rapidly between major notes and blue notes, making the listener feel “the blues.”

The teacher held up a visual grammar card for verbs and asked students to look for verbs in the first sentence. Students who said “ever” were directed to look at the picture and demonstrate how to “ever” and asked to try again. The card could be moved across the words in the first sentence until a word that fit the description of action was found. For younger students, the discussion stayed at the level of finding words that were verbs. For older students, the discussion was focused on sentence complexity. For example, the sentences *Blue notes have a sad sound so people also refer to them as “worried notes”* and *When you sing a scale from low to high notes, you are singing the major notes* were examined for clause structure by having students identify the subject-verb pairs in each

sentence (i.e., *blue notes + have, people + refer, you + sing, and you + are singing*) to determine whether these sentences were simple or complex. The teacher used markers to highlight target words or discussion points as needed. At least once during the lesson, a target word, in this case the verb *refer*, would be explored for meaning with students generating possible definitions based on context clues. The lesson would end with the students suggesting a picture to summarize the passage as well as summarizing the paragraph verbally in one sentence.

One of the investigators trained the teachers to implement EGI. They attended a workshop explaining and modeling the procedure and practiced generating lessons and correlating them to state grade-level standards and their ELA text. An investigator then modeled the procedure at least once in each teacher's classroom with the entire class.

Treatment Fidelity

At least once during the six-week intervention period, each teacher in both conditions was observed implementing the lesson. An investigator observed and followed along with the lesson plan to assure the instructional script was followed and the lesson carried out according to protocol. During the infrequent occasions when there were elements that were not being implemented correctly during the first week of the study, the investigator modeled the lesson, provided feedback and suggestions to the teacher, and followed up with another visit to monitor the implementation. In all cases, teachers were implementing the lessons as prescribed, although the experimenter did on occasion model parts of the lesson if the teacher had questions or requested a model of how to best use materials.

Results

To determine if grammar taught in a meaningful reading context (EGI) would have a positive effect on the use of these skills in writing, gains in scale scores ($M = 10$, $SD = 3$) from pretest to posttest were compared with those of a control group. Two subtests from the TOWL-3 were used to examine changes in written language. Tables 2 and 3 profile the means, standard deviations, and gain scores for the two subtests of the TOWL-3. Examination of the means indicates that gain scores for the Sentence Combining and Contextual Conventions subtests were greater for the EGI condition in comparison to the DGI condition.

Table 2
Gain Scores for the Sentence Combining subtest for the EGI and DGI groups

	Pretest		Posttest		Mean Gain
	Mean	SD	Mean	SD	
EGI group ($N=164$)	9.22	2.5	10.41	3.2	+1.19
DGI group ($N=156$)	9.12	2.5	9.40	2.8	+0.28

Table 3
Gain Scores for the Contextual Conventions subtest for the EGI and DGI groups

	Pretest		Posttest		Mean Gain
	Mean	SD	Mean	SD	
EGI group (N=164)	9.51	2.8	10.15	2.90	+0.64
DGI group (N=156)	9.43	2.6	9.61	3.12	+0.19

To determine if these mean scores were reliably different from pretest to posttest and between instructional conditions, a repeated measures analysis of variance (ANOVA) was used to test for significance ($p < 0.001$). Table 4 shows that significantly greater gains were observed in the EGI group for the Sentence Combining subtest compared to the DGI group ($p < 0.005$). Gain scores were not significantly different for the Contextual Conventions subtest ($p < 0.158$).

Table 4
ANOVA Results for Gains in TOWL-3 Subtest Scores for the EGI and DGI groups

	F	Sig.	Partial eta squared
Sentence Combining Group*Time	7.99	.005	.158
Contextual Conventions Group*Time	1.99	.158	.006

The results of this study indicate that there are advantages for learning complex grammar when taught in context. Compared to a control group, students in the EGI group composed sentences with greater accuracy and complexity than did students taught these skills using traditional worksheet methods following six weeks of intervention.

Discussion

Many decades of research in language arts have revealed practices that do improve writing, as well as deeply instilled traditional approaches that have little impact on writing. Those practices shown to be beneficial, such as engaging in meaningful writing accompanied by strategy training, also prove to be time consuming, and demand much individual attention for organizing, revising, and editing by teachers and peers. In contrast, workbook exercises in grammar are less demanding and yield few positive results in actual writing. This difference has caused some to suggest that teachers should not spend classroom time teaching concepts such as parts of speech. However, both this study and the research of Fearn and Farnan (2007) indicate that when instruction focuses on the function of grammar, significant improvements can occur within a short period.

Methods of language exploration such as EGI actively engage students in thinking about language and provide the tools and strategies for making sense of complex information. In this study, the students rapidly improved in syntactic awareness, as evidenced by increasingly participating in active interactions as they learned to find and manipulate the patterns of grammar during lessons. As a result, following only six weeks of 15–20-minute lessons, or fewer than six hours of instruction, improvements were seen in writing complex sentences. These gains were not only statistically significant but also clinically significant, representing an increase of one standard score at many points in the normal distribution for the TOWL-3 norms.

This result was counter to the expectation of the classroom teachers, many of whom expressed concerns that the EGI approach was too complex, addressed too many skills in a single lesson, and did not provide systematic practice. While the EGI lessons were more complex and did address a wide range of skills within the same session, the observations made in the classrooms revealed that the students in these groups did not exhibit confusion or frustration. Instead, they were attentive, interactive, and excited to volunteer answers or information.

The finding that the improvements in generating complex sentences were found in writing is particularly encouraging because all instruction focused on reading. This improvement could occur only if the lessons generated a change in the ability to understand and use word-order strategies to express complex relationships of meaning. Once this understanding is internalized, it would be expected to be exhibited in all oral and written language modalities. Evidence for students' application of these can be seen in the error patterns for sentence combining produced by DGI students but not for EGI students. Several combined sentences produced by the DGI group were grammatically correct, but the meaning of the message was altered. For example, when given the kernel sentences *Sherry's foot is sore* and *She had dropped a book on it*, subjects in the DGI group combined them into sentences such as *Sherry dropped a book on her sore foot* and *Sherry dropped a book on her foot unless it was sore*. Although grammatically correct, the causal relationship of the two kernel sentences is not reflected in the final combined sentence.

Errors of this type were not observed in the sentences of EGI students, suggesting that the grammar-focused discussions embedded within meaningful passages enabled them to balance form, function, and meaning. In contrast, the DGI instruction, in which the correct response required a focus on forms such as identifying the grammatical class of words, may have conditioned these students to focus on form at the expense of meaning and function. Extended practice ignoring meaning appeared to impair the DGI students' ability to coordinate ideas while maintaining clarity and avoiding repetition and redundancy during sentence combining tasks. The students made negligible changes in sentence combining from pretest to posttest.

Although greater gain scores on the Contextual Conventions subtest were observed in the EGI group, these gains did not reach a level of statistical significance. This positive trend in the mean scores observed in the EGI group suggested a longer intervention period might have resulted in significant change. This trend is likely due to the diverse assortment of elements that fall under the category of written conventions, including various aspects of punctuation, spelling, and capitalization. Additionally, while the Sentence Combining subtest provided students with specific sentences to combine into one single sentence, the Contextual Conventions subtest required students to write a story about a picture prompt. Students may have produced many of the conventions of writing listed on the subtest had they been specifically prompted to do so. That is, the absence of these conventions in their stories may not have been due to an inability to produce them. For example, points are awarded for using apostrophes in contractions, but some students wrote stories that did not contain any contractions, so no points were awarded for this convention. Although some students will avoid using certain forms because they are not competent producing them independently, it is quite likely that some forms, such as contractions, were simply not included in their writing sample. Significantly more writing would be necessary before every convention of writing would be spontaneously used. However, it is encouraging to see a positive trend in use of writing conventions in the EGI group's writing samples as a) the intervention period was so brief (~15 minutes per day, four times per week, over six weeks), b) numerous conventions were examined, and c) this activity was a measurement of students' spontaneous (not prompted) use of these conventions.

This study provides evidence for the efficacy of teaching language arts using meaningful texts as the instructional medium. The results indicate that parts of speech, grammatical complexity, and punctuation can be taught in the context of a reading passage. The study also suggests that for low-achieving students to succeed, language arts skills are better taught using enriched oral language interactions. Each of the EGI plans instructed the teachers how to explain, elaborate, clarify, and provide language opportunities for children to interpret and talk about the language of the text. Each skill was discussed in terms of how it communicated meaningful information about the story (e.g., “The prepositional phrase was moved to the beginning of the sentence because the author wants you to know *where* the characters are *before* he tells you *what they did*.”). This contrasted sharply with the traditional worksheet approach (i.e., DGI) in which the focus is on form (identifying the part of speech, punctuation mark, etc.) with additional discussion of meaning or use being limited or absent. The gains observed following just six weeks of intervention suggests that low-achieving students can be successful and engaged in instruction, two factors that prevent student attrition.

Limitations and Future Research

Although positive outcomes that provided empirical support for improving written grammar skills were observed in this study, limitations of the research should be discussed. Initially, the subjects of this study were primarily African American children from economically disadvantaged backgrounds. Thus, the results cannot be generalized to the total student population. This study did include a representative sample of the population of a southern state, as ten different school districts participated; however, replication in other regions of the state and country are needed to generalize these findings. In addition, to determine if the EGI approach is beneficial to other at-risk groups, replication with specific populations, such as students with learning disabilities or language disorders would need to be completed. The study was short-term and resulted in modest gains. A more extended study would address whether the benefits of EGI would be observed long-term for writing proficiency, including writing conventions.

Group differences in gain scores illustrated the benefit of EGI, but even greater insights could be gained through a more detailed analysis of participants’ writing ability. Only two aspects of grammar were examined for this study: use of contextual conventions and creating complex sentences from simple sentences. Students may produce more complex grammatical structures because of EGI that were not identified on the TOWL-3 subtests. Sentence variation, use of adverbial conjuncts, and clausal density, for example, would not be represented in a TOWL-3 subtest score, but all are demonstrative of syntactic maturity.

As research has concluded for decades that DGI has little impact on student writing skills, obtaining feedback from ELA teachers could shed some needed light on the persistence of this practice. Analyzing qualitative information regarding teachers’ perspectives about the process and outcomes of EGI would prove beneficial in determining what the barriers to changing grammar instruction are. Qualitative data from the students would prove beneficial as well. Students in the EGI group in this study appeared more engaged and participatory than their DGI counterparts. The investigators propose that this difference was because the DGI method focused on quiet, individual seat-work, and the EGI method fostered critical thinking, problem solving, and group discussion. However, further investigation would be needed to systematically assess students’ level of engagement and motivation.

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