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Examining middle school students learning language arts skills in context

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EXAMINING MIDDLE SCHOOL STUDENTS LEARNING LANGUAGE ARTS SKILLS IN CONTEXT

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ABSTRACT

The purpose of this study was to investigate whether the embedded language approach is effective in teaching the traditional language arts curriculum, and whether it holds any advantages over the more traditional approach. Twelve teachers in ten different schools taught language skills using the embedded language approach, while twelve matched teachers explicitly taught the same skills using traditional workbook practice activities for six weeks. Treatment efficacy was assessed using gain scores between pretest and posttest using a battery of informal and standardized measures. In addition, weekly comprehension probes were administered to examine whether language arts skills taught during the week generalized to the target context of reading.

Results of the mixed design Analyses of Variance (ANOVA) indicated that scores for classes receiving the embedded language lessons were statistically different from scores of the classes receiving the explicit language lessons for the informal pre and posttest measurements, but not for the standardized subtests measurements. Also, findings revealed that the embedded language group and the explicit language group performances were similar and did not favor either group for the comprehension probes.

LITERATURE REVIEW

From the earliest years in school, students study the language arts. The initial focus is on developing an awareness of the structure of words through phonemic and print awareness that will lead to reading, spelling, and writing. With each grade level, increasing demands are made for analyzing the language to learn the skills and strategies used in listening, speaking, reading, and writing. Traditionally, the analysis of language is conducted using workbooks (Hillocks & Smith 1991), with a skill or strategy isolated and practiced within a series of sentences (i.e., identifying compound nouns) or words adhering to or violating a pattern (i.e., adding –ed to words ending in "y"). For most students this approach results in learning the parts of speech, and punctuation and spelling rules. However, many students, particularly those who are poor readers and/or writers, struggle with the metalinguistic demands of language analysis. By middle school they present a history of failure and frustration with the tasks, and continued delays in reading and writing.

The purpose of this study is to determine if an alternative approach that teaches the skills of language arts within the context of meaningful text (termed Embedded Language lessons) holds an advantage over the more traditional approach (termed Explicit Language lessons) for improving performance in mastering language arts skills. The study will also determine whether the Embedded Language lessons, which will focus on explaining how the grammar and print conventions (i.e., the form) work to communicate the meaning of the text, will result in greater gains in reading comprehension compared to the traditional Explicit teaching approach.

Language Content, Form, and Use

Lois Bloom (1970) described oral language as comprised of content, form, and use, using a Venn diagram to show the interrelated nature of these aspects of language. More recently, the

International Reading Association (1996) has adapted a similar diagram to describe the language arts, labeling them "development," equivalent to Bloom's "form," content, and purpose or use. The parallel structures of the diagrams highlight that whether the modality is oral or written, the process of language arts acquisition is the same. The IRA model has one added component, termed "context," which highlights the importance of the cultural and situational context in which learning is embedded.

Comparison of Bloom and International Reading Association Diagrams of Aspects of Oral and Written Language

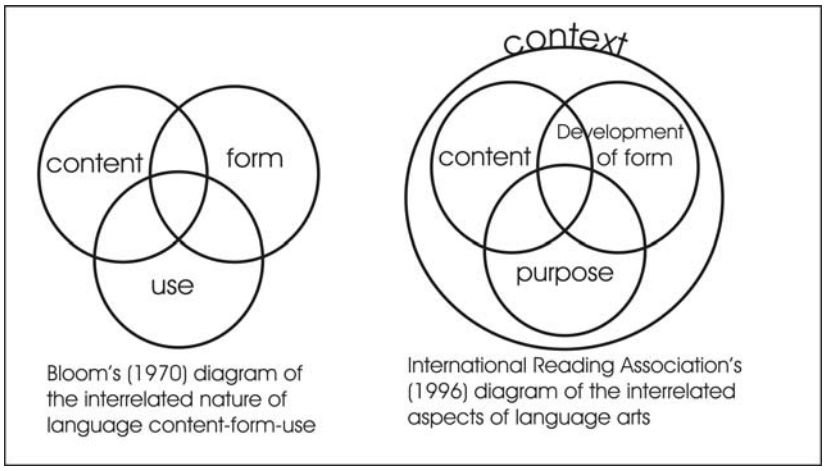

Figure 1

Language Form

The *form* of language refers to the spoken and written conventions of language that allow for communication to occur. The forms of oral language include the phonemes and their distribution and sequencing within a language (i.e., phonology); the smallest linguistic units of meaning (i.e., morphology); and the patterns or rules governing word order within a sentence (i.e., syntax) as well as macrostructures such as story grammar (i.e., discourse). The forms of oral language are acquired in a predictable sequence between infancy and age 5 (Applebee, 1978; Brown, 1963; Smit et al., 1991).

Phonemic Awareness

At approximately age 4, a new type of development begins. Children gradually become consciously aware of the forms of their language, particularly the phonological forms. This meta-awareness, termed *phonological awareness* in its more global forms in the earlier stages, includes such emergent abilities as rhyme, word, and syllable awareness (Goswami & Bryant, 1990). These skills progress through a predictable developmental sequence towards increasing awareness of individual phonemes (i.e., *phonemic awareness*), including identifying sounds in varying word positions and manipulating sounds in words by substituting vowels or consonants. This increasing phonemic awareness establishes a foundation for associating letters with these sounds and learning to decode and spell written language (Stanovich, 1986).

Numerous studies have demonstrated the positive relationship between phonemic awareness and success with beginning reading and writing (Ball & Blachman, 1991; Goswami & Bryant, 1990; National Reading Panel, 2000). Research has shown that phonemic awareness is one of the leading school-entry predictors of how well children will learn to read. Early phonological awareness skills such as rhyming at 3 years predict performance at reading and spelling in first grade (Bryant, Bradley, McLean & Crossland, 1989; Kirtley, Bryant, Maclean, & Bradley, 1989). The relationship between phonemic awareness and reading development is a reciprocal one. As children become aware of phonemes they have a concept of sounds that can be associated with letters. As reading improves, the input from letters increases awareness of sounds and enables students to better manipulate them for decoding and spelling (Stanovich, 1992). Students who demonstrate poor meta-awareness often struggle with beginning stages of reading, and are at-risk for specific reading disability or dyslexia (Hatcher, Hulme, & Ellis, 1994; National Reading Panel, 2000; Share, 1995; Stanovich, 1986).

Phonics

Phonics is the study of the orthographic patterns of written words that correspond with the pronunciation of spoken words. Progressively more difficult patterns are introduced with each grade level. In first grade, the most common consonant and vowel patterns are studied and applied to decoding and spelling words. In second grade, less common vowel patterns are taught and the principle that some vowel sounds have two or more common patterns are learned in reading and spelling. In upper elementary and beyond, word study explores affixes and Latin or other roots (i.e., morphology). Although these patterns are learned implicitly by those without formal instruction in phonics (Adams, 1990), recent research reviews (National Reading Panel, 2000; Stahl, Duffy-Hester, & Stahl, 1998) have suggested that the most effective phonics instruction is planned and sequential, explicit and systematic. That is, meta-awareness of orthographic patterns and morphological structures of words is related to spelling and decoding of polysyllabic words.

Story Grammar

Wells' (1986) investigated the links between storytelling and school success, finding that consistent exposure to storytelling and narrative discourse in both the home and classroom environments predicted success in school. Research exploring children with poor comprehension, including those with learning disabilities, showed poor meta-awareness of story grammar, or the elements of narrative discourse (Gersten, R., Williams, J., Fuchs, L., and Baker, S., 1998). These include time, character, setting, problem, internal response, plan, attempt, and outcome. Several studies have addressed the question of how to improve awareness of narrative structure. Idol-Maestas (1985) explicitly taught strategies, such as studying the story title, looking for the important words, and thinking about the story setting and plot. Results showed

improved performance on comprehension questions and higher scores on a standardized reading test. Gersten et al. (1998) reviewed extant literature and concluded the most effective of strategy for improved comprehension was teaching story grammar to guide comprehension when reading. Story maps and use of generic questions based on story grammar were among the techniques shown to be effective.

Grammar

Research demonstrates positive gains in decoding, comprehension, and spelling when meta-awareness of phonological, morphological (i.e., affixes and Latin roots), and narrative aspects of language is explicitly taught. It is logical and long-assumed true that meta-awareness of grammar, including parts of speech, would have a similar positive effect on reading and writing. In fact, explicit instruction on grammar and parts of speech has been a major focus of the language arts curriculum for decades. However, a large body of research conducted during the 60s and 70s concluded that the metalinguistic teaching of grammar does nothing to improve children's writing, editing, speech, or reading (Barton, 1997; Harris, 1962; Hillocks 1986; Hillocks & Smith 1991; Thompson, 1969). There has been very little research on grammar and writing since the 60s and 70s and no new support for its efficacy, and yet the explicit teaching has never diminished and is enjoying resurgence in popularity.

A few studies have shown that better writers also have better meta-awareness of grammar, but it is unclear whether any causal relationship exists. One longitudinal study (Laurinen, 1955) showed no benefit to writing or punctuation at third grade, but better performance for those trained in grammar by 6th grade. They concluded those explicitly trained for several years on these skills had a greater understanding of complex sentences and their components by 6th grade, thus better understanding the function of the punctuation and other conventions. Williams (1995)

showed similar benefits for punctuation in a short-term study.

A study conducted by Harris (1962), reported in detail in Braddock, Lloyd-Jones, and Schoer (1963), indicated that greater benefits could be accrued from teaching grammar in context. Later studies (Elley et al., 1976; McQuade, 1980) supported this finding. Other researchers showed that selected aspects of grammar could be taught more effectively and efficiently without detailed, explicit teaching through activities such as sentence combining (O'Hare, 1973). Calkins (1980) found that punctuation was learned better at 3rd grade when taught in the context of writing than by studying punctuation rules in isolation. Similarly, DiStefano and Killion (1984) showed 4th through 6th grade students taught conventions in the context of writing were better at using the conventions than those who studied these skills in isolation.

van Allen (1976) proposed that language arts should be taught with an emphasis on experiencing communication in natural ways, an emphasis on the study of communication that helps a person to be literate, and an emphasis on ideas and on language as other people use it to communicate their ideas. His approach, termed *Language Experience*, sought to integrate learning into personal and meaningful behavior for each student. The existing language of each child is used as the base for building language competence required for reading printed materials. A continuing emphasis is placed on the individual use of language to produce reading material so children can observe and experience language relationships that work for them. Language is treated as a unique human experience which can be valued, kept, through writing, and then reconstructed through reading.

To date, studies have not examined the effects of teaching grammar and written language conventions either explicitly or in context on reading comprehension. This lack of research is surprising in that one of the two measures of readability (Fry, 1963) is grammar (the other being

the number of syllables in words).

Language Content

The content component of language involves meaning. Content maps an individual's knowledge about objects, concepts, events, people relationships among them. Included are the rules governing semantics, that subsystem of language that deals with words - their meanings and the links that bind them. It encompasses meanings conveyed by individual words and the speaker's or listener's mental dictionary (called a lexicon) (Owens, 1992).

The content component of language maps an individual's knowledge of not only objects (*big car*), but also the relationship that exists between objects, events, and people. Meaning in language is conveyed through the use of words and their combinations. This knowledge is derived from experiences and is a result of one's cognitive development. The meaning can be both literal and nonliteral and is dependent on linguistic and nonlinguistic contexts.

The *content* dimension addresses what students would know and be able to do with the English Language arts. This includes knowledge of written, spoken, and visual texts and of the processes involved in creating, interpreting, and critiquing such texts. Depending on the nature of the literacy task at hand, content may be connected to personal knowledge, to schooling or technical knowledge, or to social or community knowledge. Any given language event is likely to encompass some combination of personal, academic, and social knowledge (IRA Board of Directors and NCTE Executive Committee, 1996).

As Figure 1 profiles, language content and form are interrelated. In contrast to theories such as Chomsky's (1957) transformational grammar, a branch of linguistics termed Construction Grammar views the form of language inseparable from content and use. In this

model, the form of language is not learned according to basic phrase structure rules which then are modified through transformations. Rather, all types of phrase and sentence types are equally central to forming grammatical patterns, and all dimensions of language (syntax, semantics, pragmatics, discourse, morphology, phonology, prosody) as equal contributors to shaping linguistic expressions. In this model, learning language is usage-based. Language is a repertoire of more or less complex patterns, or constructions, that integrate form and meaning in conventionalized and often non-compositional ways. *Form* in constructions may refer to any combination of syntactic, morphological, or prosodic patterns and *meaning* is understood in a broad sense that includes lexical semantics, pragmatics, and discourse structure. A grammar in this view consists of intricate networks of overlapping and complementary patterns that serve as 'blueprints' for encoding and decoding linguistic expressions of all types (Fillmore et al. 1988).

When grammatical patterns are viewed as learned from their use within a complex context of meaningful exchanges, then the implications for instruction support teaching grammar in context. From this perspective, grammar would best be learned when the patterns are shown to communicate specific nuances of meaning. Therefore, a prepositional phrase that occurs at the beginning of a sentence would be a pattern learned from this usage; the meaning associated with this pattern would provide information about the location of setting before the action is described.

Language Use/Purpose

Language is not produced merely to create an utterance. Rather, language is spoken to achieve a speaker's purposes. To accomplish this, speakers must adhere to the pragmatic rules that govern the use of language in social contexts. These rules include results that govern the reason (s) for communicating, referred to communicative functions or intentions, as well as rules

that govern the choice of codes to be used within communicating (Bloom & Lahey, 1978).

The functions of language relate to the speaker's intention or goal. Greeting, asking questions, answering questions, requesting information, giving information, and requesting clarification are examples of language functions. In addition to coding communicative intentions, a speaker must use information regarding the listener and the nonlinguistic context to achieve his communicative intention. He must choose from alternative forms of a message and choose the one that will best serve his communicative intention. The speaker must take into account what the listener already knows and does not know about a topic, as well as information about the context. The selection of words and sentences to use to formulate a message depends upon this information. For example, knowing the age and occupation of different listeners influences the choice of words to greet them. The form of the message is also influenced by whether the topics of the message are present in the situation in which the utterance is used.

Lastly, pragmatics encompasses rules of conversation of discourse. Speakers must learn to organize their conversations to make them coherent. They must learn how to enter, initiate, and maintain conversations. They must learn how to take turns, how to respond appropriately, and how to tell a cohesive narrative. Armed with these skills, an individual is said to be an effective communicator (Owens, 1992).

The *purpose* dimension addresses the question of why we use language. In other words, it considers the range of motives, reasons, and desired outcomes, or the ends to which we direct our literacy practices. We all use language for a variety of purposes, such as to learn, to express ideas, to convey information, to persuade others, to note things we observe, to savior aesthetic experience, or to engage with others socially. Any given literacy event may involve several of these purposes (IRA Board of Directors and NCTE Executive Committee, 1996).

Language Context

Communicative competence entails the appropriate use of language in social contexts (Gleason, 2001). Because contextual variables influence all areas of learning, context encircles the other three dimensions (form, content, and use) of the model in Figure 1. Social and cultural contexts, in particular shape linguistic patterns, meanings, and uses (IRA Board of Directors and NCTE Executive Committee, 1996). Regardless of whether one is reading or writing, speaking or listening, viewing or visually representing, a context always surrounds any activity. Perhaps one of the most influential aspects of context is the social dimension. Many illustrations of reading and writing show one person alone, looking downward at a text or a paper, deeply immersed in thought. However, being literate is a fundamentally social process. Although language development is social, the process does have private dimensions. For example, an individual reflects on his sets of experiences and strategies when using language to construct meanings from what we read, write, hear, say, observe, and represent. These specific meanings are individual and personal. Yet the range of possible meanings that can be discovered, to a great extent, is socially determined. This knowledge is greatly influenced by what those in an individual's language community know and by shared experiences and shared texts.

Language Varieties

One aspect of communicative competence involves the choices speakers make among language varieties. For example, one would speak differently while giving a formal presentation at school than when playing in one's neighborhood; when talking to chess buddies about strategy than talking with younger siblings about television shows. These language varieties include registers, dialects, and languages. Registers (sometimes called speech "codes" or "styles") are usually thought of as forms of language that vary according to participants, settings, and topics.

Dialects are usually thought of as mutually intelligible forms of language associated with a particular region or defined group of people. As with other aspects of communicative competence, whether a given variety is appropriate and effective depends on the context in which it is used. Two examples of language varieties are those associated with ethnicity and gender (Gleason, 2001).

Language and Ethnicity: African American Vernacular English

Recent research on actual language use shows, moreover, that no single "standard" of English exists around the world, or even within is a single country. Everyone who speaks English speaks different varieties of English depending on whom they are communicating with, the circumstances involved, the purpose of the exchange, and other factors. Indeed creative and communicative powers are enhanced when students develop and maintain multiple language competencies (IRA Board of Directors and NCTE Executive Committee, 1996).

Interest in and concern about children's dialects came was heightened in 1996 when the Oakland (California) School Board made a controversial decision. It declared that "Ebonics," a variety of English spoken by many African Americans, should be recognized and taken into account in teaching "Standard English." According to the Linguistic Society of America, this language variety has systematic and expressive grammatical and pronunciation patterns (Gleason, 2001).

In addition to age, factors such as socioeconomic status and context affect how often children use AAVE and which features they produce (Battle, 1996). AAVE is more commonly used among working-class and low-income African Americans (Washington, 1996) and in informal situations (Battle, 1996).

Some elementary-school-age African American children use AAVE at home and in

other informal settings and switch to SE in more formal, academic settings, a tendency that is more pronounced in adolescence as children become more aware of the social significance of SE (Battle, 1996). According to William Hall (1976), this ability to vary their speech across settings is due to the perceptions of the relative risks as opposed to the gains or benefits to be derived from speaking different varieties. In some settings, using certain forms enables speakers to establish and maintain social bonds and to display cultural pride. In other settings, speakers may focus on social consequences of language variety for teachers' attitudes. They may recognize that using a certain variety has implications for educational and occupational access and success (Gleason, 2001)

Nonetheless, some varieties of English are more useful than others for higher education, for employment and in what the Conference on College Composition and Communication (1993) in a language policy statement calls "the language of wider communication." Therefore, although we respect the diversity in spoken and written English, we believe that all students should learn this language of wider communication (IRA and NCTE, 2001).

Poverty Compounds Language Learning Needs

Language learning differences are apparent in children of poverty from earliest ages. Hart and Risley (1999) showed that preschool children from low-income families heard far fewer words at home compared to children of professional parents. This large disparity in language experience was tightly linked to differences in child outcomes: the more parents talked to children, the faster the children's vocabularies grew and the higher the IQ test scores at age 3 and later. Amount of parental talk accounted for all the correlation between SES or race and the verbal intellectual accomplishments of the children. There was a difference of almost 1,500 words spoken per hour between professional and welfare parents. Each year a professional

family's child heard 11 million words, while children of welfare heard fewer than 500 words per hour, thus started kindergarten having heard 32 million fewer words. Language experience accounted for these differences. Before they began talking, all of the children vocalized approximately 150 times per hour, but by 36 months, each child's talk leveled off at the point where they begin to talk as much as their parents had been talking to them (for other studies documenting SES differences, see Dollaghan, Campbell, Paradise, & Feldman, 1999; Schatner et. al. 1979; Hammer & Weiss, 2000; Hoff-Ginsberg, 1991).

Loban's landmark study (1979) showed that low SES students are similarly behind in their mastery of the complexities of grammar. They entered school at kindergarten with less proficiency in oral language and show poorer written language skills. Loban followed inner city, largely AA children from grades K-12 and found those with the least language skill at kindergarten continued to lag behind peers throughout school. First grade low achievers produced half as many dependent clauses as high achievers, less elaborated noun phrases, and less elaborated verb phrases. By 4th grade the low achievers still used less complexity than high 1st graders, indicating the phenomenon that the rich get richer in language use, while the poor get poorer. Low achievers also demonstrated greater maze behavior (i.e., false starts in sentence formulation, insertion of filler words, incorrect word choices) that increased with grade level, while the level of these maze behaviors steadily decreased as their peers gained greater grammatical proficiency. These findings showed that low achievers fail to acquire these advanced language forms through reading and writing at a level commensurate with their peers. These language differences were even greater in written language skills. High achieving 4th graders used dependent clauses in writing commensurate with their oral language abilities, while low achievers wrote sentences impoverished even compared to their oral language skills.

Children of poverty also lack exposure to storybook reading. As children are read to, they learn to interpret pictures for meaning, sequence pictures to tell a story, and discover the functions, alphabetic principles, and conventions of print (Adams, 1990). Children read to daily may have 750 hours of storybook reading experience and a rich network of knowledge in which to embed and interpret Language Arts instruction. Children without these experiences often learn skills in school for which they recognize no need and so the skills are quickly forgotten. Teachers in the early grades have an almost insurmountable task of making up for needed language experience, while teaching a curriculum children are not yet ready to understand.

Instructional Approaches for Language Arts

Schools cannot hope to compensate for the language experiences children of poverty lack unless language is a rich and integral part of the curriculum from earliest ages. Yet few classroom teachers have themselves taken any coursework in language development, language structure, or linguistic theory. Quiet classrooms and individual seatwork are often valued over oral discussion and group interaction. Children who lack information or who cannot rapidly formulate a response are passed over in favor of children who know the answer. Thus, the classroom becomes yet another setting where low achievers fail to gain language skills.

Explicit Language Teaching Strategies

The quiet classroom and individual seatwork approach continues in middle school and beyond. In upper elementary and middle school, English Language Arts skills are taught separately from the process of reading, typically on worksheets that isolate the skill and teach in a “define and practice” format. Therefore, students are not given the opportunity to understand how to integrate semantic, syntactical, and discourse information simultaneously. When English Language Arts is taught as a separate subject, grammar is taught in the abstract. As a result,

teachers use metalinguistic teaching techniques such as definitions and drills that are devoid of meaning or pragmatic function. Thus, students must then generalize this empty language to that of literature or expository text, which becomes difficult for even high achieving students. Once again, instruction intended to enrich impoverished language skills only adds more confusion, causing the classroom to become yet another setting where the rich gets richer and the poor gets poorer. Therefore, schools cannot hope to compensate for these differences unless language becomes a rich and integral part of the curriculum (Weaver, 1996).

Exercises and drills have been widely used in the past and continue to be a frequently used comprehension teaching strategy. Materials designed to systematically teach a skill or series of skills are presented, often on worksheets. During the 1960's, reading specialists became disappointed by basic skills instruction. Debates continued between two sides, those who wanted to teach from whole-to-part and those who wanted to teach from part-to-whole. While conversation continued among the opposing groups, children's scores on state and national tests failed to improve, especially among at-risk populations. These findings suggest the drill and practice format may not be the best approach for teaching language arts skills (Flood et al, 1991).

Embedded Language Lessons

An alternative to teaching the skills of language explicitly, in isolated activities, is the Embedded Language lesson approach (Norris, 2005; Weaver, 1996). Learning in context shifts the focus from memorizing the products of language through drill and practice, to understanding the process of communication by exploring the effects of grammar, punctuation, and other conventions on the communication of meaning in a context. By focusing on processes and strategies, meta-awareness of the form of language can be increased as talk about the parts of speech is used to explain the meaning it lends to the interpretation of a story (e.g., "this *adjective*

lets us know how Georgie is feeling after seeing the Brits"). No research could be found that explored the efficacy of teaching meta-awareness of grammar and conventions of print within an Embedded Language lesson format, nor the effects of this learning on reading comprehension.

It is known that simply reading literature, such as a story or expository text, is beneficial to language learning. Much of the vocabulary development and syntactic growth that occurs during the school years in normal development has been shown to result from reading and writing experiences (Loban, 1976; Nagy, Herman,& Anderson, 1985). Children with poor reading skills, however, generally experience difficulty in gaining access to this source of language learning. They have difficulty reading written language, and even when they read they often fail to process and comprehend the information because of their poor mastery of semantic, syntactic and pragmatic nuances of language. Reading however, can be treated as an interactive and communicative exchange of information that occurs between the author, the teacher, and the students rather than a solitary experience. During the communicative exchange that occurs, the teacher can mediate language learning by assisting the child in understanding how the author of the text uses language to share meaning and accomplish goals. Recent investigations indicate positive language and reading outcomes in using comprehension-based reading instruction (Norris, 1991).

Whereas the integration of form, content, and use is observed in the language of non-disabled children, a disruption of the components is often found in the language of children with disabilities or of low socioeconomic status. As students increase in grade level, they are expected to read and write in formal literate language style. However, there is an increasing language load in academic courses. This language includes long grammatically complete sentences with multiple dependent clauses, elaborated noun and verb phrases, vocabulary that is

abstract in meaning and often has multiple connotative meanings in context, and demands for morphological markers that must maintain agreement across the boundaries of embedded phrases. This language is often far more elaborated than the everyday oral language experiences of students by the middle school years. Without assistance to interpret the language, reading comprehension and writing abilities would remain poor.

Format of Embedded Language Lessons

The goal of an Embedded Language Lesson would be to teach the complexities of language within authentic contexts of reading and writing. A passage from interesting grade appropriate literature could be used to teach grade-level language arts skills in a manner that examined their occurrence for form, function, meaning. For example, the passage "By the roadside, a very scared Johnny Adams hunkered down. He knew he couldn't take the main road but instead should cross the river at the low spot where he would be out of sight," could be examined. For example, prepositions would be one form targeted for discussion. The first word of the sentence could be pointed to and identified as a preposition. The unusual position of the form could be discussed (e.g., "Usually, prepositions are at the end of the sentence, after the verb.") The sentence in its predicted order then could be read to show the contrast, as in "A very scared Johnny Adams hunkered down in *by the roadside*. The reasons for changing the sentence order could be discussed. In this manner, the term "preposition " is defined, identified, shown how it can take on different positions within the sentence (form) and how a change in form alters function and places a different emphasis on meaningful sentence elements. Likewise, a discussion of "Very scared" could reveal not only how it adds grammatical complexity to the noun phrase, but also humanizes Johnny and his feelings in this situation, helping the story to become more personal and "alive" to the reader. In this manner, students learn to use the skills

taught in language arts to interpret and enrich reading comprehension. The lessons can similarly be adapted to writing (Dinkins, Norris, & Hoffman, 2005).

Speech-Language Pathologists as Consultants

According to ASHA (Technical Report, 2001, Roles and Responsibilities of Speech-Language Pathologists (SLPs) with Respect to Reading and Writing in Children and Adolescents), speech-language pathologists have the specialized knowledge and experience needed to identify spoken and written language problems and to provide the help children need to build critical language and literacy skills. SLPs are often the first professionals to identify the root cause of reading and writing problems through the child's difficulty with language. Because of their training in linguistics, speech perception, speech development, language development, and other areas, speech pathologists have the greatest training in the foundations for developmental spelling, phonemic awareness, word structure, vocabulary training, and reading comprehension. These ASHA guidelines indicated SLPs have the knowledge and expertise to work to a) prevent written language problem, b) identify children at-risk for reading and writing problems, c) assess reading and writing, d) provide intervention documenting outcomes for reading and writing, and e) collaborate with teachers, administrators and other school personnel to meet the specific needs of the heterogeneous population of reading impaired children.

Throneburg et al., (2000) demonstrated that intervention provided in the context of collaboration with the teacher in the classroom resulted in greater increases in vocabulary than either instruction provided by the SLP in the classroom without the presence of the teacher or pull-out intervention by the SLP for identified students. In addition, the students who did not qualify for services but who were in the classrooms made significantly greater gains compared to those with no SLP involvement (i.e., those classrooms using the pull-out model). This study

demonstrates that a) instruction provided in language by the SLP in the classroom setting benefits all students, and b) when the teacher is an active part of the collaboration, greater benefits are accrued.

Questions Addressed in this Study

This study examined a collaborative intervention project between an SLP and a cohort upper elementary and middle school teachers. The questions of this study were:

1. Are embedded language lessons effective for teaching meta-awareness of the following spoken and written language conventions compared to the traditional explicit focus approaches within upper elementary and middle school language arts classrooms:

    a. Types of sentences (i.e., complete, complex, compound, subjects, predicates) and parts of speech (i.e., nouns, verbs, adjectives, adverbs, conjunctions, prepositions, pronouns);
    b. English grammar (i.e., independent, dependent, appositive, adjective, noun, and adverb clauses, infinitives, prepositional phrases)
    c. Vocabulary and word structure (deriving meaning from context, prefixes, suffixes, antonyms, synonyms)
    d. Punctuation (declarative, interrogative, imperative, exclamatory, quotations, apostrophes, and commas)

2. Are embedded language lessons effective for increasing reading comprehension compared to the traditional explicit worksheet teaching approach?

METHOD

A pre-test posttest control group design (Hedge, 1994) was employed to investigate the effect of the embedded language lessons on the mastery of 4 types of spoken and written language conventions typically taught in the language arts curriculum in grades 3 through 8. Twelve teachers, participating in the Project Oral Written Language Literacy Strategies (OWLLS), taught language arts skills in 10 different schools using the embedded language approach, while 12 matched teachers, not participating in Project OWLLS, explicitly taught the same skills using traditional workplace practice activities for 6 weeks. Treatment efficacy was assessed by comparing gain scores between pretest and posttest using a battery of informal and standardized measures. In addition, weekly comprehension probes were administered to examine whether language arts skills taught during the week generalized to the target context of reading.

Participants

Participants for this study were 122 students from 3rd (14 students), 4th (60 students), combined 4th /5th grade class (5 students), 5th (15students), 6th (6 students), 7th (15 students), and 8th (7 students) grades. These participants were selected from the original population of 495 students who completed the pretest battery and for whom signed consent for participation was obtained. From this subject pool, 61 matched pairs of the participants included matched pairs from the experimental (i.e., embedded language) and control group (i.e., explicit teaching). Participants were selected based upon similar performance at pretest. Participants ranged in the age from 8 years to 15 years (mean = 11 years, 5 months). Racially, 65.75% of the students were African American, 23.77% Caucasian, and 2.46% other, including Asian. Additionally, 82.79% of the students were at-risk due to socioeconomic status as evidenced by eligibility for free or reduced school lunch. The demographic profiles of students by classroom are shown in Table 1.

Table 1.
Demographic Profiles of Students in Embedded Language and Explicit Teaching Classroom Conditions

SCHOOL 1 (St. Helena)
Grades 5

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
10-11	11;3	6	0	0	0	1	5	10-13	11;4	6	0	0	0	0	6

SCHOOL 2 (Iberville Elementary)
Grades 4

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
10 -12	10;8	3	0	0	0	0	3	9-12	10; 6	1	1	1	1	1	1

SCHOOL 3 (Dorseyville Elementary)
Grades 4

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
10 –12	10;6	5	1	0	0	0	6	9-10	10;4	4	2	0	2	0	4

SCHOOL 4 (Jackson Elementary)
Grade 4 and Grades 4th and 5th (combined)

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
10-12	10;4	4	1	0	0	0	5	10-12	11;4	4	1	0	1	0	4

Grades 4

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
9-11	10;7	9	2	0	0	0	11	10-11	11;6	10	1	0	0	0	11

SCHOOL 5 (Slaughter Elementary)
Grade 5 and Grade 4

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
11-12	12;6	1	2	0	0	1	2	9-10	9;7	0	3	0	3	0	0

TABLE 1 continued

SCHOOL 6 (Clinton Elementary)

Grades 4

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
9-11	10;4	6	0	0	0	0	6	9-11	10;5	5	1	0	2	0	4

Grades 3

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
8-10	9;6	6	1	0	0	0	7	8-10	9;5	7	0	0	0	1	6

SCHOOL 7 (Erath Middle School)

Grade 8 and Grade 7

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
13-14	14;6	0	7	0	6	1	0	12-13	12;7	1	6	0	5	0	2

SCHOOL 8 (EJGay Middle)

Grades 7

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
12-13	13;7	3	0	0	1	0	2	12-14	13;3	3	0	0	0	0	3

SCHOOL 9 (Clinton Middle)

Grades 6

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
11-12	12;3	2	1	0	0	0	3	12-14	13;2	2	1	0	0	0	3

SCHOOL 10 (Livonia)

Grades 7

Embedded Language								Explicit Teaching							
Age		Race			SES			Age		Race			SES		
range	Mean	AA	CA	Oth	F	R	Fr	range	Mean	AA	CA	Oth	F	R	Fr
12	12;7	0	1	0	0	0	1	12	12;8	1	0	0	0	0	1

AA-African American; Ca=Caucasian, Oth = Other
F=full price lunch, R= reduced price lunch, Fr = free lunch

All students were receiving language arts instruction in the regular classroom. All of the schools had been identified based on the previous year's state and national test scores as being among those having the lowest school performance scores in the state, with rankings in the unacceptable range for language arts. According to school records, 1.64% of the students were identified as Learning Disabled, 2.46% Speech only, 0.82% Speech and Learning Disabled, 0.82% Fine Motor, 0.82% Other Health Impaired, 0.82% 504, and 0.82% 504 and Attention Deficits Disorder (ADD). Academically, 23.84% of the students had repeated a grade, and 36.57% were low readers.

Pre-Posttest Procedures

All students completed group testing for language, language arts, reading comprehension, and writing at pretest and posttest. The testing was conducted during the students' regular classroom time at their home schools. Tests and/or their subtests were administered by the classroom teacher over several days. The teacher read items to students who were unable to read the test material. The pretest scores were used to compare skills levels between experimental and control groups at the beginning of the study. These instruments included a test of spoken language (i.e., The Test of Adolescent Language); a researcher made test of language arts skills; and a test of reading comprehension (i.e., released grade leveled passage with questions from the Louisiana Education Assessment Program [LEAP] test).

Test of Adolescent Language (TOAL 2)

The TOAL 2 (Hammill, Brown, Larsen, & Wiederholt, 1987) is a standardized group administered instrument with norms from 12 to 18 years. Three of the subtests were administered, including a) listening/vocabulary, a picture vocabulary identification task; b) reading vocabulary, or choosing a written word that best goes with three related words; and c) reading grammar,

or selecting the sentence that is equivalent in meaning to the target sentence.

The Listening Vocabulary (LV) is a 35 item subtest and is a variation of the format, "point-to-the picture-of-the-word-I-say" technique. To reduce the likelihood of guessing, students are required to select from four pictures the two that relate to the stimulus word. For example, in one item the student must understand that the *arabesque* is both a design and a position in ballet.

The Reading/Vocabulary (RV) subtest requires students to silently read three stimulus words, all of which are related to a common concept (e.g., the three words, *red, green,* and *blue* are all colors). From four possible responses the student selects the two words that are associated more closely with the three stimulus words (i.e., . of the words *yellow, circle, orange, and light*, the student should select *yellow* and *orange,* because they, too, are colors). The student need not verbalize any concept or word. The format of this subtest emphasizes relational meaning, or the characteristics of ideas or objects and with the various cognitive categories to which they belong.

Reading Grammar is a 25-item subtest was designed to measure the student's ability to recognize meaningfully similar but syntactically different sentence structures. When given five sentences to read, the student selects the two that most nearly have the same meaning. For example, of the following sentences, A and D have similar meanings: a) Sam plays, b) Sam will not play, c) Sam played, d) Sam is playing, e) Sam is going to play.

The norms for this test did not extend to the youngest subjects in this study. However, the test was administered to all subjects because no comparable group language test is available for younger ages, the first items are easier and within the range of younger children, and because gain scores rather than standardized scores were used in the data analysis.

Louisiana Education Assessment Program (LEAP) Reading Passage

The LEAP is a test designed by the state department of education to assess reading comprehension. A reading passage at the 4th grade (given to 3rd – 5th grade) and 8th grade (given to 6th – 8th grade) level was selected from released items. These items were designated to be at the appropriate readability levels and to measure a range of comprehension skills by the developers. Students were required to read the passage and then answer 8 questions, 4 at the basic level (i.e., factual recall and simple interpretation), and 4 higher level (i.e., inference and analogy). Basic level questions required students to recall when, how, where questions, or select the definition or synonym for the underlined word or find the best adjectives to describe a character, determine if the text was fiction or nonfiction, or sequence the events in the story when given four choices. Higher level questions required students to draw inferences about a character's living experiences, determine the author's purpose for writing the passage, select a situation that closely resembled the passage read, and apply the value of the article to a particular profession (i.e., musician, social studies student, or foreign language teacher).

Test of Language Arts

The TOLA is a researcher made test assessing the language arts skills addressed over the 6-week instructional period. Two levels of the test were generated; an elementary level (given to 3rd – 5th grade), and a middle school level (given to 6th – 8th grade). Each level had 2 forms (A and B). Items were taken from commercially available workbooks to form this composite test. Item validity was established by having 2 people judge the items as a) all testing a language arts skill and b) having items representative of the skills covered in the study. The reliability of the test was established using a test-retest procedure. Ten students not participating in the research were given both forms of the test. The scores from these paired tests correlated at r=.746, or

above the level of .7 required for a group administered test (Campbell & Stanley, 1963).

The elementary grade level of the test consisted of 33 multiple choice questions. Both pre and post test items were formatted the same way for forms A and B. Students were given four choices for each question which they were to identify, label, or exclude. Test items were as follows:

7 noun (singular, plural, possessive) questions
7 sentence type and punctuation (comma, quotations) questions
2 adjectives
2 adverbs
6 verb and verb tense questions
3 subject (simple, compound, complete)
1 subject/verb agreement
1 sentence combination
3 predicate (simple, compound, complete)
1 contraction

The middle school grade level of the test consisted of twelve parts, totaling 70 questions. Parts one through seven and nine through ten were fill in the blank on a separate answer sheet and parts eight and eleven through twelve were multiple choice questions. The parts were divided as follows:

Part 1 Sentence or Sentence Fragment (5)
Part 2 Simple/Complete Subject and Predicate (5)
Part 3 Four Sentence Type (5)
Part 4 Dependent Clause and Independent Clause (4)
Part 5 Indirect and Direct Object (4)
Part 6 Gerund, Appositive, Infinitive (10)
Part 7 Adverb, Adjective, or Noun (5)
Part 8 Subject Verb Agreement (6)
Part 9 Parts of Speech (10)
Part 10 Simple, Compound, and Complex Sentences (5)
Part 11 Vocabulary (5)
Part 12 Capitalization and Punctuation (5)

Reliability of Test Scores. The reliability of scoring was assured by rescoring 20% of the test protocols for the non-standardized tests (i.e., the informal test of language arts and the

released LEAP test items). An undergraduate student not involved in the research of the study and naïve to the questions of the study was given the answer key for the TOAL, LEAP, and Language Arts tests. The undergraduate student was instructed to randomly select test protocols and re-score them using the answer key. Results indicated 100% agreement between scorers.

Use of Pretest to Match Groups. Table 2 profiles the scores for this test battery by classroom at pretest. To determine if the experimental and control groups were equivalent, Two Way Analyses of Variance were performed on the Test of Language Arts, Test of Adolescent Language, and Louisiana Education Assessment Program. The results indicated that students in experimental and control group classroom were not significantly different at pretest ($p < .000$).

Table 2
Profile of Student Test Scores in Test of Adolescent Language: Listening Vocabulary (LV), Reading Vocabulary (RV), and Reading Grammar (RG); Test of Language Arts (LA), and Reading Comprehension (LEAP) in Embedded Language and Explicit Teaching Classroom Conditions.

SCHOOL 1
Grades 5

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
12	12	1	22	2	11	18	17	22	4
12	1	0	16	5	7	9	1	16	3
6	8	2	14	4	10	13	12	14	5
12	8	1	17	4	2	9	17	17	3
10	10	8	18	4	10	10	11	18	3
7	10	1	18	3	7	9	22	18	3
9.8	8.2	2.2	17.5	3.7	7.8	11.3	13.3	17.5	3.5

SCHOOL 2
Grades 4

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
3	8	2	13	4	6	8	1	13	5

TABLE 2 continued

6	2	1	9	3	3	1	8	9	4
8	10	1	16	2	10	9	1	16	3
5.6	6.7	1.3	12.7	3.0	6.3	6.0	3.3	12.7	4.0

SCHOOL 3

Grades 4

Embedded Language

LV	RV	RG	LA	LEAP
8	5	0	10	3
7	13	3	16	1
5	16	12	22	6
9	9	1	11	3
15	11	15	14	4
6	10	11	16	4
8.3	10.7	7.0	14.8	3.5

Explicit Teaching

LV	RV	RG	LA	LEAP
10	6	0	10	6
10	12	2	16	5
10	10	17	22	5
9	12	2	14	5
6	11	18	11	3
9	8	12	16	4
9.0	9.8	8.5	14.8	4.7

SCHOOL 4

Grade 4 and Grades 4th and 5th (combined)

Embedded Language

LV	RV	RG	LA	LEAP
7	9	2	18	4
6	8	0	13	2
8	9	2	14	2
5	4	12	11	2
5	10	2	12	2
6.2	8	3.6	13.6	2.4

Explicit Teaching

LV	RV	RG	LA	LEAP
8	8	3	18	4
19	10	14	13	5
5	2	14	14	1
6	5	2	11	2
4	8	2	12	5
8.4	6.6	7	13.6	3.4

Grade 4

Embedded Language

LV	RV	RG	LA	LEAP
6	10	8	13	4
6	10	2	14	5
2	7	2	14	3
12	9	2	11	3
9	7	0	11	5
4	7	4	9	1
6	9	9	9	5

Explicit Teaching

LV	RV	RG	LA	LEAP
2	11	0	13	1
7	10	8	14	5
7	9	0	14	3
10	10	1	11	3
8	7	0	11	3
9	11	2	9	3
0	12	1	9	5

TABLE 2 continued

9	7	0	9	2	6	3	2	9	3
2	6	0	13	1	4	4	0	13	4
9	9	2	18	6	2	8	1	18	4
6	2	10	9	3	3	12	1	9	6
6.5	7.6	3.5	11.8	3.5	5.3	8.9	1.5	11.8	3.6

SCHOOL 5

Grade 5 and Grade 4

Embedded Language

LV	RV	RG	LA	LEAP
6	9	1	14	3
11	16	2	16	5
11	3	4	12	3
9.3	9.3	2.3	14.0	3.7

Explicit Teaching

LV	RV	RG	LA	LEAP
17	19	2	14	3
11	14	1	16	5
10	13	2	12	3
12.7	15.3	1.7	14.0	3.7

SCHOOL 6

Grades 4

Embedded Language

LV	RV	RG	LA	LEAP
8	9	1	11	5
4	2	1	11	4
4	8	0	10	2
1	3	0	12	3
4	2	1	13	3
8	10	5	15	5
4.8	5.7	1.3	12.0	3.7

Explicit Teaching

LV	RV	RG	LA	LEAP
4	3	2	11	3
6	8	1	11	4
4	2	2	10	2
0	3	0	12	3
6	3	0	13	2
11	8	1	15	5
5.2	4.5	1.0	12.0	3.2

Grades 3

Embedded Language

LV	RV	RG	LA	LEAP
5	10	1	13	3
5	8	2	10	1
8	9	1	11	3
1	1	1	10	3
9	2	0	8	1
1	3	2	12	1
6	0	2	12	2
5.0	4.7	1.3	10.9	2.3

Explicit Teaching

LV	RV	RG	LA	LEAP
6	4	2	13	2
6	3	1	10	2
5	8	0	11	4
6	1	1	10	5
6	11	2	8	2
2	7	2	12	1
2	8	1	12	2
4.7	6.0	1.3	10.9	2.6

TABLE 2 continued

SCHOOL 7

Grade 8 and Grade 7

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
25	16	1	30	5	11	17	10	30	5
9	7	10	28	6	8	9	1	28	5
12	23	24	46	7	14	24	15	46	5
5	18	1	29	3	11	16	11	29	7
23	20	21	48	6	20	23	17	48	5
21	19	22	36	4	8	20	22	36	6
12	19	18	35	3	18	18	21	35	6
15.3	17.4	13.9	36.0	4.9	12.9	18.1	13.9	36.0	5.6

SCHOOL 8

Grades 7

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
12	21	15	25	1	9	11	2	25	5
6	10	2	30	4	10	8	10	30	4
9	13	16	34	4	17	13	2	34	6
9.0	14.7	11.0	29.7	3.0	12.0	10.7	4.7	29.7	5.0

SCHOOL 9

Grades 6

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
10	19	1	53	6	3	9	0	53	3
7	12	22	50	3	11	15	13	50	5
10	19	15	41	3	10	9	1	41	3
9.0	16.7	12.7	16.0	4.0	8.0	11.0	4.7	16.0	3.7

SCHOOL 10

Grades 7

Embedded Language					Explicit Teaching				
LV	RV	RG	LA	LEAP	LV	RV	RG	LA	LEAP
23	15	12	48	6	10	11	1	48	4

TABLE 2 continued

23	15	12	48	6		10	11	1	48	4

Procedures for Language Arts Instruction

Both the embedded language group and the explicit language group were instructed over the same content (i.e., the same language arts skills), but used different instructional techniques during the six weeks of the study. Each classroom teacher delivered instruction in either the embedded language or explicit teaching instructional conditions during the regular language arts period. The treatment activity was implemented for approximately 15-20 minutes each Monday through Thursday for 6 weeks, resulting in 24 instructional sessions. Each Friday a reading comprehension probe was administered. All materials were provided to the teachers in both instructional conditions. A comprehension probe was administered each Friday, with the posttest (alternate forms where available) administered at the end of the 6 weeks.

Embedded Language Instruction

In the embedded language condition, the teachers introduced one paragraph of expository text. The teacher read the entire paragraph aloud while students followed along on a transparency. Next, the teacher would point to a target sentence within the paragraph, usually one of the most complex sentences that contained several of the language arts skills addressed in this study. The teachers then would follow a step-by-step written script for analyzing that sentence with their students. The script asked them to a) teach a vocabulary word, including picturing, defining, examining the word structure, and generating a synonym; b) identify the sentence type, including subjects and predicates; c) examine the punctuation for its type (declarative, interrogative, etc.), and for its function within the sentence to order, organize, or emphasize meaning; d) identify parts of speech for target words, and have children explain why

the author made that word choice; e) analyze the sentence for its grammatical structure, including identifying different sentence clauses and their function within the sentence; and f) summarize the information from the paragraph in words and by drawing a picture.

The teachers were trained to implement embedded language instruction by the researcher. They attended a workshop describing the procedure, and practiced generating lessons and correlating them to state grade level expectations and their language arts text. The researcher then modeled the procedure at least once in each teacher's classroom with the entire group. Finally, the researcher observed each teacher at least once during the 6 weeks to assure that the procedure was being implemented according to protocol and provided feedback and suggestions. The researcher was present at each school at least 3 times to answer questions or provide models over the duration of the project.

Explicit Teaching Instruction

The control group classroom continued to use the traditional worksheet approach, teaching the same skills as the embedded language group. Each teacher verified this was the primary strategy for teaching the targeted skills in his/her class. To assure that all of the skills addressed in the embedded language condition were also addressed in the explicit teaching condition (i.e., parts of speech, punctuation, and vocabulary suffixes or synonyms), worksheets were matched with the skills in embedded language lessons. A grade-appropriate worksheet was presented during each day the study focusing on the target skill (i.e., during week 1, the worksheets addressed nouns, singular/plural nouns, pronouns, and direct/indirect objects.

Treatment Fidelity

At least once during the 6-week intervention period, each teacher was observed implementing the lesson. The experimenter observed and followed along with the lesson plan to

assure the instructional script was followed and the lesson done according to protocol. If there were elements that were not being implemented correctly, the experimenter 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 was unsure of how to best use materials.

Materials

All materials for both conditions were prepared in advance by the researcher. Materials and equipment for treatment sessions consisted of an projector, transparency markers, transparencies, binders with researcher prepared worksheets for the Embedded and Explicit Instruction, visual mnemonics depicting parts of speech or other target skills, and researcher designed reading and comprehension probes.

Instructional Materials for Embedded Instruction

The materials used in the Embedded language instructional lessons included equipment needed for whole-class demonstrations and visuals designed to enable students to see and think about difficult concepts during the instruction.

Visual Mnemonic Pictures. Each teacher in the embedded language condition received transparencies of visual mnemonic pictures (Norris, 2005). The purpose of using the visual mnemonic pictures was to reduce the memory load by providing an external representation of the word and its meaning. During embedded language intervention, students were provided with six visual mnemonic pictures of parts of speech and four visual mnemonic pictures of punctuation markers. The teacher used the pictures to define these concepts and displayed them as parts of speech and/or punctuation were explored during the language lessons. For example, the meaning

of the word “noun” was depicted on the letters, so that a smiling face drawn inside of the “o” corresponded to the element of person, a door drawn inside of the “n” corresponded to place, a person thinking inside of the “u” corresponded to the element of concept, and a bow on top of the final “n” corresponded to the element of thing. During instruction, if the students were unable to identify the grammatical part of speech for “ball,” the teacher would use the “n” of “noun” with the bow on top to cue that the object was a “thing” that could be in the gift box with the bow. In order to reduce working memory overload, pictures were recommended to remain within the view of the subjects during the embedded language group for each lesson.

Projector or Document Camera. A projector or document camera was used for each whole group lesson for the embedded lesson conditions. Teachers would place the lesson on the projector or document camera and follow the script accordingly.

Transparency and Markers. Each lesson was presented on either a paper or a transparency for use with an overhead projector if a document camera was not available. Teachers would use the marker to write the correct responses to each question or draw pictures of actions occurring in the paragraph as indicated in the scripts that followed the reading of the paragraphs.

Embedded Language Lesson Binders. Lessons included six expository text passages that were divided into 24 lessons. Each passage was covered over a one-week time period, with one to two paragraphs explored during each daily lesson. Reading passage topics included low-fat diets, Walt Disney, Susan B. Anthony, Groundhog Day, the Pony Express, and Blues music. Under each paragraph, the researcher provided a script that taught the six target language arts skills, including a) vocabulary, b) subjects and predicates, c) punctuation and sentence types, d) parts of speech, e) sentence structure (i.e., conjunction), and f) summarization and visualization of sentences. For each skill, the researcher provided questions for the teachers to ask and

transparencies where questions were displayed and answers were to be recorded.

Instructional Materials for Explicit Instruction

The materials used in the Explicit language instructional lessons included equipment needed for whole-class demonstrations and worksheets placed on transparency.

Projector or Document Camera. A projector or document camera was used for each whole group lessons for the explicit lesson conditions. Teachers would place the lesson on the projector or document camera and follow the instructions specified on the worksheet to introduce the lesson.

Transparency and Markers. Each lesson was presented on either a paper or a transparency for use with an overhead projector if a document camera was not available. Teachers would use the marker to fill in model responses as they were presenting the lesson or recording student responses.

Explicit Language Lesson Binders. Worksheets with 24 lessons were divided into six weeks. Lessons included grammatical terms or punctuation skills, and were taught each day in the order indicated by the researcher. For example, 3rd thru 5th graders received the following worksheets:

WEEK ONE

Day1 Noun
Day 2 Singular and Plural Nouns
Day 3 Pronouns
Day 4 Nouns Functioning as Direct and Indirect Objects

For students 6th thru 8th graders, lessons included:

Day 1 Noun Function (Direct Objects)
Day 2 Noun Function (Indirect Objects)
Day 3 Noun Function (Appositive)
Day 4 (Interrogative and Relative Pronouns)

Reading Comprehension Probe

Each intervention group was administered the same six nonfiction reading comprehension probes, taken from the workbook *Teacher Learning Materials -Nonfiction Reading Comprehension* (2002). The 3rd thru 5th graders were given the 4th grade level probes. The reading passages for this level of probes included "America's First Nurse," "Algonquin Native Americans," "A Female 'Moses'," "Your Genes," "The Story of the Brooklyn Bridge," and "The Man Who Gave the First Shot."

The 6th thru 8th graders were given the 6th grade level probes, including the reading passages "The Father of Genetics," "Let there be Light," "Mexico: Past and Present," "The Census Counts," "The Battle Against Germs," and "The Berlin Wall." Each probe included six multiple-choice questions and one constructive response question, totaling seven questions. The multiple choice comprehension questions consisted of literal recall and understanding of the language of the text such as a) interpreting the meaning of a vocabulary word (multiple choice definitions), b) associating an unfamiliar word from the story with a familiar vocabulary word that was a synonym (i.e., A synonym for suspicion is….), c) interpretations of information given in the text but not directly stated (Picture the ancient Aztecs cities. What are buildings made of…), d) understanding the element of syntax or cohesion from the text (e.g., "On a historical timeline, what happened second…."), and e) inferences (i.e., You can infer that the Soviets built the Berlin Wall because….).

Scoring was completed by the classroom teachers or researcher at the end of each treatment week. Questions to the probes were scored as correct or incorrect. Usually, the teachers of both the embedded and explicit language groups used the comprehension reading

passage and probes as a classroom graded assignment to elicit the best performance from students.

Data Analysis

The pretest-posttest measures were subjected to 2-way analyses of variance to determine if there were reliable differences between the gain scores of the embedded and explicit language learning groups.

The comprehension probes were subjected to a 1-way analysis of variance to determine if there were reliable differences between the groups across time.

RESULTS

There were five dependent values – TOLA, LEAP, LV, RV, and RG. A 2- Time (Pretest, Posttest) x 2- Conditions (Embedded Language, Traditional) mixed model analysis of variance was calculated for each dependent measure. The experimentwise error rate was maintained at $p<.05$ by demanding that the Condition x Time interaction F reach a significance level of $p<.01$ for each dependent measure.

Pretest and posttest measures of oral and written language were obtained for 3 subtests of the TOAL, reading comprehension for LEAP passages, and a test of language arts skills for all students. In addition, weekly measures of reading comprehension were obtained for each of 6 weeks.

Meta-Awareness of Language Arts Skills

To determine whether teaching language arts in the context of Embedded Language Lessons is more effective in increasing meta-awareness of these skills than traditional worksheet instruction (i.e., Explicit Lessons) for late elementary and middle school students, the mean pretest and posttest test scores for vocabulary and language arts skills (i.e., parts of speech and punctuation) were compared. Inspection of means on Table 3 shows that higher scores were achieved for both groups on all measures at posttest. The Embedded Language instructional group made greater gains for the Test of Language Arts, while the Explicit Language instructional group made greater gains for the Listening Vocabulary subtest of the TOAL2. The Test of Language Arts directly measured the skills taught during intervention, while vocabulary is an indirect measure.

Table 3

Means, Standard Deviations, and ANOVA Results for Gains in Meta-Awareness Skills for the Embedded Language and Explicit Language groups on the Test of Language Arts and Test of Adolescent Language-Listening Vocabulary (LV)

Test of Language Arts

Group	Mean	SD	Mean	SD	F	Sig.	Partial Eta Square
Embedded	18.90	11.78	22.01	11.72			
Explicit	18.90	11.78	19.13	9.87			
Group* Time					7.38	.008	.058

Test of Adolescent Language-Listening Vocabulary

Group	Mean	SD	Mean	SD	F	Sig.	Partial Eta Square
Embedded	8.26	5.02	9.03	4.13			
Explicit	7.95	4.38	9.16	4.84			
Group* Time					0.35	.557	.003

The results of the ANOVA indicate differences between the scores for the Test of Language Arts were significant at the $p<0.008$ level. These results indicate that teaching the meta-awareness skills in context (i.e., the Embedded Language Lessons) was more effective than teaching the same skills using traditional worksheets (i.e., the Explicit Language instructional group). The gain scores for the Listening Vocabulary subtest of the TOAL2 were not significantly different ($p< .557$).

Reading Comprehension

To measure whether meta-awareness instruction for parts of speech, syntax, vocabulary, and punctuation had a positive effect on reading comprehension and whether Embedded Language Lessons held an advantage, four measures were used. These included the pre-posttest comparison for the Reading Vocabulary and Reading Grammar subtests of the TOAL2, the reading comprehension scores for LEAP passages, and the weekly comprehension probes

elicited across the 6 weeks of the intervention.

Comparison of Pretest-Posttest Scores

The mean pretest and posttest test scores for Reading Vocabulary and Reading Grammar of the TOAL and the LEAP comprehension passages were compared to determine whether teaching language arts in the context of Embedded Language Lessons is more effective in improving reading comprehension than traditional worksheet instruction (i.e., Explicit Lessons). Inspection of means on Table 4 shows that higher scores were achieved for both groups on all measures at posttest, although the Explicit Language group made minimal gains on the LEAP measure. The Embedded Language instructional group made greater gains than the Explicit Language instructional group for all measures of reading comprehension. To determine if these means were reliably different, a mixed design ANOVA was used to test for significance.

Table 4

Means, Standard Deviations, and ANOVA Results for Gains in Reading Comprehension for the Embedded Language and Explicit Language groups on the Test of Adolescent Language-Reading Vocabulary (RV) and Reading Grammar (RG), and the Louisiana Education Assessment Programs (LEAP) Reading Comprehension Passages.

Test of Adolescent Language – Reading Vocabulary

Group	Mean	SD	Mean	SD	F	Sig.	Partial Eta Square
Embedded	9.54	5.49	11.66	4.98			
Explicit	9.75	5.05	10.21	5.51			
Group*Time					4.103	0.45	.033

Test of Adolescent Language – Reading Grammar

Group	Mean	SD	Mean	SD	F	Sig.	Partial Eta Square
Embedded	5.25	6.66	5.59	6.67			

TABLE 4 continued

Explicit	5.43	6.78	6.01	7.33			
Group* Time					.056	.813	.000

Louisiana Education Assessment Program (LEAP)

Group	Mean	SD	Mean	SD	F	Sig.	Partial Eta Square
Embedded	3.42	1.48	4.15	1.50			
Explicit	3.87	1.42	3.57	1.43			
Group*Time					11.03	.001	.084

* gain scores were greater than the SEM of 1 for the TOAL

The results of the ANOVA indicate differences between the scores were not significant for the Reading Vocabulary ($p<0.45$) or the Reading Grammar ($p<.813$) subtests of the TOAL2. The scores for the Embedded Language Lesson group were significantly greater than those for the Explicit Language group ($p< .001$) for the reading comprehension (i.e., released Louisiana Education Assessment Program items) test. These results suggest that generalization of meta-awareness skills to reading comprehension occurred best when the skills were taught within a coherent reading passage.

Comparison of Weekly Comprehension Probes

The effect of the meta-awareness instruction on reading comprehension was further explored using reading probes at the end of each week of instruction. Reading comprehension probes obtained from commercially prepared multiple-choice reading passages were administered each week across the 6 weeks of intervention. Each probe included 7 questions. The mean number of correct responses to probes for each group is profiled in Figure 1. The findings revealed that the embedded language group and the explicit language group

performances were similar and did not favor either group. The results further showed that responses to the comprehension questions did not systematically increase across time.

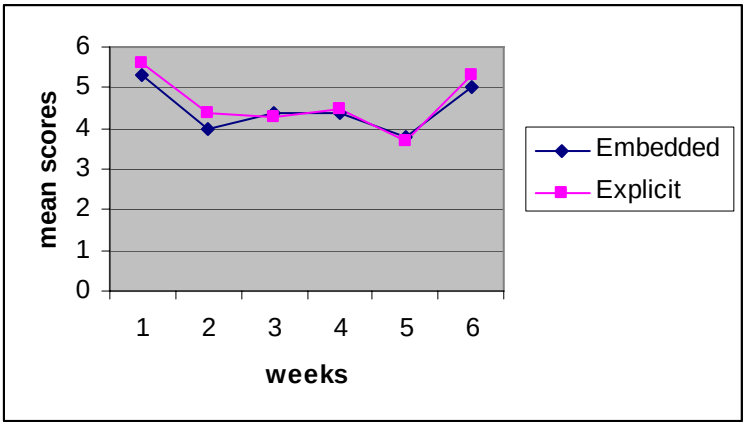

Figure 1

Mean Number of Comprehension Probes for Embedded Lesson Language and Explicit Language Lesson groups

DISCUSSION

This study addressed two important questions. The first examined whether language arts skills, such as grammatical parts of speech and conventions of punctuation and capitalization could effectively be taught in context. The second was whether becoming more meta-aware of language provided low achieving students with new insights and tools for thinking about the language of a text that would improve reading comprehension. These two issues were related. In the traditional language arts curriculum, skills first are taught in isolation, generally introduced and practiced on worksheets or workbook activities. The student must internalize this knowledge and then generalize it to functional contexts such as reading literature or writing prose. The premise of this study was that if the skills could be taught in the context of literature, then students would simultaneously be exposed to the form of the grammar and print conventions, but also their meaning and function within text. Thus, the skill would not have to first be learned and then later generalized. Rather, the skills would be learned as an informative part of the process of reading and interpreting text.

Effectiveness of Embedded Language Lessons for Meta-Awareness Skills

The results of this study supported this premise. When the grade level expected language arts skills were taught in the context of a reading passage (i.e., Embedded Language Lessons), they were learned as effectively as when the skills were isolated and systematically taught. In fact, the differences in the gain scores on the Test of Language Arts were significantly greater under the Embedded Language conditions. This researcher-designed test was a direct measure of the skills taught under both conditions over the 6-week intervention period. This result was counter to the expectation of many of the classroom teachers who expressed concerns that the Embedded Language approach was too complex, addressed too many skills in a single lesson,

and did not provide systematic practice.

The Embedded Language lessons were more complex and did address a wide range of skills within the same session. And yet the students in these groups did not exhibit confusion or frustration. Instead, they were attentive, interactive, and excited to volunteer to name a part of speech or explain a punctuation or grammatical pattern. Several factors contributed to this engagement. The first and most important is that each skill talked about during the lesson was explained on multiple levels including form, function, and meaning. For example, if a sentence began with a prepositional phrase (*In the early morning, Jess pulled on his boots and headed toward the door*), the part of speech for the word "in" might first be identified (i.e., form); the fact that the prepositional phrase ordinarily belongs at the end of the sentence would be noted, followed by a discussion of why the author would choose to move it out of its canonical position (i.e., the meaning and function of the phrase within the sentence). In this manner, the word "preposition" provided students a needed label for identifying which word/phrase had been moved. The meta-term thus became meaningful and functional to the student's communicative needs. The meta-term was integrally linked to meaning as the student talked about how the author chose to establish the setting first in order to set the stage for the character and the action. We know that children are "meaning makers" (Wells, 1986) and that language is easy to learn when the word makes sense and has a purpose for the learner.

A second factor that may have contributed to the active participation and increased learning was the use of visuals to support the skills addressed during the Embedded Language Lessons. For example, parts of speech such as "noun," "proper noun," or "adverb" are metalinguistic terms. Their meanings are known through definitions provided using words, and remembered using auditory recall of the definitions. For most young students, learning the

definitions, recalling the definitions, and holding the definition in auditory memory while simultaneously comparing words and making judgments about whether the word fits the definition is a formidable task. By defining the words visually through picturing the meaning on the letters of the word, the processing demands are decreased. The definitions are made more visual and concrete, remaining in view without the need for auditory rehearsal to keep the definition in memory. The students then could compare the target word to each part of the pictured definition (i.e., Is the word "morning" a person – a place – a concept – a thing?), a much easier task for many students than comparing the word to each element of an auditory definition. Further research comparing learning with and without the pictured grammar cards is needed to determine if the visual cues contributed to the increased scores.

The fact that listening vocabulary scores on the Listening Vocabulary subtest of the Test of Adolescent Language (TOAL 2) did not improve significantly following the 6 weeks of instruction is not surprising. Vocabulary learning was one skill addressed within the Embedded Language lessons, but there was not a focused attention on word learning. Only a few vocabulary words could be addressed in the time allotted, and the lessons placed a greater emphasis on parts of speech and print conventions. Thus, it is unlikely that any words learned actually appeared in the posttest. Further, the TOAL is normed across a broad age range, with only a few items selected to sample the vocabulary at each grade level. The test thus was not sensitive to changes in vocabulary that might have been detected with an instrument that focused more narrowly on a specific age range.

Effectiveness of Embedded Language Lessons for Reading Comprehension

The results of this study were inconsistent for the premise that learning skills of language arts would have a positive effect on reading comprehension, with greater gains for the Embedded

Language condition. Two subtests of the Test of Adolescent Language (i.e., Reading Vocabulary and Reading Grammar) addressed reading comprehension skills. Gains from pretest to posttest were shown for both groups, but only the Embedded Language group had gains greater than the standard error of measurement (SEM) for this test. Thus, the gains exhibited by the Explicit Teaching group could be attributed to random error in testing. However, the difference in the gain scores did not prove to be statistically different. The Test of Adolescent Language may not have been sensitive enough to indicate changes that may have occurred. Both the embedded language and explicit language teachers had to adhere to a short period of instructional time to conduct the lessons. Teachers could not devote an unlimited amount of time to teaching higher order skills that are assessed in the TOAL. Thus, the teachers may have done a better job of teaching the surface level skills in the lessons. This is supported by the outcome that the language skills which changed were those that were emphasized in instruction. A different language instrument should have been used that would be more sensitive to measure language changes.

The direct measure of Reading Comprehension taken from released items of the LEAP test showed significantly greater gains for the Embedded Language group. The Explicit Teaching group showed minimal changes from pretest to posttest. This finding suggests that when the language analysis skills were taught in the context of the intended target (i.e., meaningful reading passages), the skills did enhance reading comprehension. In contrast, for the Explicit Language condition where the skills were taught in isolation and then needed to be generalized to the reading context, gains in reading comprehension were negligible.

These results were not supported by the weekly reading comprehension probes. These probes did not reveal increases in comprehension across time for either group, or advantages in

comprehension for either group. Interestingly, the weekly scores and pattern showing of a drop from week 1 to week 2, a stable performance at that level for 4 weeks, and then a rise back to approximately the week 1 level were essentially identical for both groups. These findings are consistent with those evaluating the effects of instruction for meta-awareness of grammar on writing, for which no positive benefits have been found (see Hudson, 2001 for a review). The findings of this study are inconsistent, indicating that the improvements seen for reading comprehension on the LEAP test need to be interpreted cautiously and further research either supporting or refuting these results needs to be conducted.

Collaboration between Classroom Teachers and SLPs

The results of this study align with other research involving collaboration between the speech-language pathologist (SLP) and classroom teachers. For example, the related research of Thornburg (2000) demonstrated that intervention provided in the context collaboration with the teacher in the classroom resulted in greater increases in vocabulary than either instruction in provided by the SLP in the classroom without the presence of the teacher or pull-out intervention by the SLP for identified students. In addition, the students who did qualify for services but who were in the classrooms made significantly greater gains compared to those with no SLP involvement (i.e., those classrooms using the pull out model). This study demonstrates that a) instructional plans in language designed by the SLP for the classroom setting benefits all students, and b) when the teacher is an active part of collaboration, greater benefits are accrued.

Implications

In this age of "Evidence Based Practice" and "Scientifically Based Instruction" (NCLB, 2001) this study provides an important controlled experiment demonstrating the efficacy of teaching meta-awareness skills in the context of meaningful reading passages. The results indicate that

parts of speech, grammatical complexity, and punctuation can be taught in the context of a reading passage, where there is at least some evidence from this study that it improves reading comprehension. The finding that essentially no change in reading comprehension was obtained for the control group suggests that the benefits to reading comprehension only accrued when the instruction focused on talking about how the conventions and forms communicated important aspects of meaning. A longer period of instruction is needed to determine if these advantages in language arts skill learning are maintained, and if the reading comprehension findings are robust.

The study also suggests that for low achieving students to succeed, language arts skills must be taught using enriched oral language interactions. Each of the Embedded Language lesson plans instructed the teachers how to talk with, explain, elaborate, clarify, and provide opportunities for children to interpret and talk about the language of the text. Each skill was talked about in terms of how it communicated meaningful information about the content of the story (i.e., "The prepositional phrase was moved to the front 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., Explicit Language teaching) where the focus is on form (identifying the part of speech, punctuation mark) with no additional talk about meaning or use. The greater gains in the short length of this study suggest that low achieving students can be successful and engaged in instruction, two factors that keep students in school. This is important, in that the dropout rate for public school students in Louisiana has increased in two recent years (Sentell, 2005). Dropout rates rose by 1,572 students between 2001 and 2003 school years, nearly all of these (i.e., 1,533) are African-American students. Also, according to the new statistics form the Louisiana Department of Education, an increase in younger dropouts is reported, starting at the eighth grade.

Limitations and Future Research

Although results of the study provided empirical support for improving meta-awareness of spoken and written conventions and reading comprehension skills, the study was not without its limitations.

The teachers that participated in Project OWLLS were encouraged to improve their school statewide assessment performance by implementing these lessons within the classroom. The motivation and enthusiasm of the directors and the assigned researcher could have resulted in better teacher performance for the LEAP and TOLA assessments. Future study should include periodic videotaped observations in both conditions analyzed using an objective measure to determine if implementation was equally enthusiastic and adhered to protocol, including equal instructional time to implement the lessons..

The instruments used to measure language arts and reading comprehension were derived from other tests. The instruments were shown to be reliable measures and had item validity. However, further research establishing stronger tests of validity need to be conducted.

The comprehension questions for both the LEAP and weekly probes varied in type, from factual recall to inferential and metaphoric interpretation. In this study, questions were scored as correct or incorrect, with no further analysis. Determining if there were greater changes in high level comprehension as a result of the Embedded Language instruction would provide important insights.

The subjects of this study were primarily African American children from families of lower and lower middle socioeconomic levels. Thus, the results cannot be generalized to the total population, including other racial groups or students from middle to upper middle socioeconomic classes.

A representative sample of the population from southern Louisiana was included in this study, as 10 different school districts participated. However, replication in other regions of the state and country are needed to generalize the results.

The study also needs to be replicated with specific populations, including those with learning disabilities, language disorders, and ADHD to determine if the Embedded Language approach is beneficial to these at-risk groups.

Future Research

Future research would include a follow-up study over the next year to determine if long-term effects were obtained for spoken and written conventions as well as reading comprehension.

Future research needs to explore the embedded language learning with specific populations, including those with learning disabilities, language disorders, and ADHD. Results from this study will be compared to see how well these scores compare with this more general study.

The effects of implementing the Embedded Language Learning approach for a longer period of intervention used need to be explored.

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APPENDIX A

PARENTAL PERMISSION FORM

Project Title: An Examination of Learning Language Arts Skills in Context

Performance Site: Public Schools participating in LaSIP funded project throughout the state.

Investigators: The following investigator is available for questions, M-F, 9:00 a.m.-3:00 p.m.

Dr. Janet Norris
Communication Sciences and Disorders Dept., LSU
(225) 578-3936 or 766-7561

Erica Dinkins, Graduate Research Student
Communication Sciences and Disorders Dept., LSU
(225) 359-9893

Purpose of Study: The purpose of this research project is to determine the efficacy of teaching language arts skills within the context of reading passages.

Inclusion Criteria: Students in 4th through 8th grade who participate in classrooms whose teacher is participating in LaSIP training.

Exclusion Criteria: None

Description of Study: Over a period of 8 weeks, your child will participate in the regular language arts class to learn grammar, parts of speech, punctuation and other skills. Two teaching approaches will be compared to help us learn which approaches work best with different students. Signing this form indicates that you agree to allow your child to be tested at the beginning and end of the project to measure changes in his/her skill level and to provide comments about this learning.

The investigator may videotape all or part of the teaching lessons. These videotapes will only be used for purposes of this research. Signing this form says you agree only to allow us to videotape your child and to use these videotapes to observe your child's learning for this project. Your child's videotape will not be shown to anyone for any purpose without your additional permission.

Potential Risks and Benefits:

There are no risks for students participating in this study. Students will be participating in regular classroom activities with their regular teacher throughout the 8 weeks. Reading and language arts material for the study is from the regular classroom curriculum. The test results will only be used to determine how well the teaching strategies work, and will not be used to make educational decisions about your child. Testing and intervention will be done at the child's school building during regular school times. There is no cost to you or to your school for participating.

Right to Refuse: Participation is voluntary, and a child will become part of the study only if both child and parent agree to the child's participation. At any time, either the student or the student's parent may withdraw the subject from the study without penalty or loss of any benefit to which they might otherwise be entitled.

Privacy: The school records of participants in this study may be reviewed by investigators. Results of the study may be published, but no names or identifying information will be included for publication. Subject identity will remain confidential unless disclosure is required by law.

Financial Information:

There is no cost for participation in the study, nor is there any compensation to the subjects for participation.

Signatures: The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigator. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, Institutional Review Board, (225) 578-8692.

I will allow my child to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Parent's Signature _____ Date _____

The parent/guardian has indicated to me that he/she is unable to read. I certify that I have read this consent from to the parent/guardian and explained that by completing the signature line above he/she has given permission for the child to participate in the study.

Signature of Reader _____ Date_____

APPENDIX B

CHILD ASSENT FORM

I, _____, agree to be in a study to find ways to help teachers discover ways to improve children's ability to learn language skills such as grammar, parts of speech, and punctuation when reading. I will have to participate in a lesson, referred to as the 12 minute lesson, where I will have to read a short paragraph, refer to the author's purpose, use visual pictures to locate parts of speech (including nouns, verbs, and adverbs) and define unknown vocabulary words within the passage.

Child's Signature _____ Age _____ Date _____

Witness _____ Date _____

VITA

Erica L. Dinkins is a licensed, certified speech-language pathologist (SLP) with job related experiences in Houston, Texas, and Baton Rouge and New Orleans, Louisiana. Her work experiences as a practicing SLP range among school-based intervention, long term care intervention, part-time university faculty, and research grant site coordinator. In many venues of her professional experience, she was employed or volunteered as a supervisor.

Scholarly presentations received during her dissertation research included the 2004 Graduate Fellowship in Educational Leadership from the Board of Governor of the Phi Delta Kappa Educational Foundation and the Board of Directors of Phi Delta Kappa International. She also received the Louisiana State University Minority Graduate Student Tuition Award during the years of 2003 thru 2005.

Her areas of professional interest include evaluation and treatment of school age and adolescent language and learning disorders, with a special focus on intervention in Language Arts. She will receive the degree of Doctor of Philosophy in May at the 2006 commencement.