

MAIN IDEA IDENTIFICATION WITH STUDENTS WITH MILD INTELLECTUAL
DISABILITIES / SPECIFIC LEARNING DISABILITIES: A COMPARISON
BETWEEN AN EXPLICIT AND A BASAL
INSTRUCTIONAL APPROACH

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Cecil Alan Miller

Certificate of Approval:

Caroline Dunn
Professor
Rehabilitation and Special Education

Craig B. Darch, Chair
Humana-Germany-Sherman Professor
Rehabilitation and Special Education

Karen Rabren
Associate Professor
Rehabilitation and Special Education

David M. Shannon
Professor
Educational Foundations, Leadership,
and Technology

George T. Flowers
Dean
Graduate School

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Cecil Alan Miller

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Signature of Author

Date of Graduation

VITA

Cecil Alan Miller, son of Glenda F. Miller and Cecil G. Miller, was born September 5, 1969, in Pensacola, Florida. He attended W.P. Davidson High School in Mobile, Alabama where he graduated with honors in 1987. In August of 1987, he entered Auburn University in Auburn, Alabama. In December of 1990 he graduated with a Bachelor of Arts in Psychology and History (cum laude). After serving in the United States Army for five years, he attended graduate school at Troy University in Troy, Alabama. He received a Masters of Science in Special Education in March of 1997. He worked as a special education teacher for five years before moving into the field of school administration. He has served as an elementary school principal, a district coordinator, and currently serves as the Director of Student Services for Eufaula City Schools. He has also served as a graduate teaching assistant in the Department of Rehabilitation and Special Education. He has been married for ten years to his wife Gina Miller. They have two sons, Gavin Miller and Riley Miller, and one daughter, Emily Miller.

DISSERTATION ABSTRACT

MAIN IDEA IDENTIFICATION WITH STUDENTS WITH MILD INTELLECTUAL
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Cecil Alan Miller

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With the passage of the No Child Left Behind Act of 2001 children with mild intellectual disabilities / specific learning disabilities have increasingly been integrated into most facets of the general education curriculum. In order to be successful, a child with mild intellectual disabilities / specific learning disabilities must learn to cope with the extensive reading demands associated with the general curriculum.

The purpose of this study was to examine the effects of two instructional approaches to teaching main idea identification with students with mild intellectual disabilities / specific learning disabilities.

The first instructional approach, or treatment condition, examined by this study was a basal approach that can be generally characterized as student directed. The second instructional approach, or treatment condition, examined by this study was an explicit approach that can be generally characterized as teacher directed. The key instructional difference between the two approaches is that the explicit approach utilized instructional scaffolds such as rule based statements, multi-step procedures, and immediate correction procedures; whereas the basal approach made limited use, if any, of these instructional supports.

A total of 38 students served as participants in this study. They were all students from the same rural school district in Southeastern Alabama. The participants were randomly assigned to either an explicit treatment condition or a basal treatment condition. The participants in this study received either the explicit or basal instructional approach during a treatment session that lasted 25 - 30 minutes a day, four days a week. The course of the treatment condition lasted for three weeks, resulting in 12 treatment sessions per participant.

The results of this study indicated that the explicit instructional approach produced significantly better scores on two measures that were based on the story content and procedures taught during the lessons. These measures were the story retells and the unit tests. However, the other dependent measures used in this study such as the (a) pretest, (b) behavioral measure, (c) social validity measure, (d) posttest, (e) and maintenance measure failed to demonstrate statistically significant differences.

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I. INTRODUCTION

“We are in the midst now of a great shift in how minimum literacy is defined in the United States” (Hull, 1998, p. 169).

The concept of literacy has changed throughout the history of the United States. Some of our earliest beliefs about literacy were influenced by the agricultural nature of our society. Prior to the formation of the United States, our common culture utilized primarily an oral exchange of information. As such, literacy was conceptualized, for many people, mainly in terms of expressive and receptive linguistic abilities. However, during the 1700s, the agricultural society of the United States became more transient. Increased travel and trade caused a need for written records and contracts. This meant that many more people needed rudimentary reading and writing skills. This in turn caused an expansion in the way literacy was defined (Hull, 1998). Caught in this expansion were people with disabilities. In fact, even though people with mild intellectual disabilities are mentioned throughout recorded history, only during this time was the concept of literacy seriously applied to them.

Juan Pablo Bonet, working in Spain during the 1600s, was one of the first to include people with mild intellectual disabilities into any conceptualization of literacy. Far from the historical view of people with disabilities as “fools” or “monsters,” Bonet

saw their potential to function in a literate society. Inspired by Bonet's work, Jean Marc-Gaspard Itard, and later, Maria Deteressa Montessori continued to educate people with mild intellectual disabilities well into the late 1800s (Katims, 2000). However, this relatively simple conception of literacy, the ability to apply basic reading and writing skills, continued into the early 1900s (Hull, 1998).

Many significant social and academic changes occurred in the early 1900s that would lead to our modern concept of literacy. Events such as the industrial revolution ushered in the need for better, and more analytic, reading skills on the part of the general populous (Hull, 1998). This movement caused a similar shift in how the literacy of people with mild intellectual disabilities was viewed. Samuel A. Kirk, one of many notable educators during the early 1930s, developed innovative instructional techniques in an effort to demonstrate that people with mild intellectual disabilities, and people with other disabilities as well, were capable of attaining something more than just the most rudimentary facility with written language (Katims, 2000). Educators of the time were also able to show that people with mild intellectual disabilities, like their peers, were capable of analyzing and decoding text to a degree not previously required of them (Katims, 2000). In order to be considered literate, one now had to demonstrate the ability to decode increasingly difficult text. In fact, the 1930s saw, in general, the beginnings of the scientific study of reading development and education (Indrisano & Chall, 1995).

The concept of literacy continued to be slowly refined until the 1980s and 90s, when it experienced many significant adjustments (Indrisano & Chall, 1995). In particular, the purpose for reading shifted from simple analytical applications to more critical ones. This shift is evident in some of the teaching practices found in today's

contemporary schools. In many reading classrooms, students are being asked to be active learners while at the same time being the manager of their own thinking. In effect, they are being asked to choose which aspects of the text to believe and which aspects to disbelieve (Hull, 1998).

Through the process of expanding our views of literacy, its very definition has changed dramatically from its early form of meaning simply the ability to decode basic texts. More open definitions were proposed such as “A set of sanctioned communication practices with assigned political authority and social status given to selected sign systems” (Myers, 1996, p. 119). However, such open definitions have only limited functionality. For example, “sanctioned communication practices” is clearly not a practical statement of what society expects from literate people. These types of definitions are especially problematic when attempting to use them to drive the formulation of an instructional program for people with mild intellectual disabilities. Given that in the past the societal expectations for people with mild intellectual disabilities have been dismal, there is no room for ambiguity over their role in our modern, literate, society (Katims, 2000).

Fortunately, many of the more recent definitions of literacy have taken an applied approach. For example, Venezky (1995) provided an early model of an applied definition of literacy in that “Literacy is the minimal ability to read and write in a designated language, as well as a mindset or way of thinking about the use of reading and writing in everyday life...Literacy, therefore, requires active, autonomous engagement with print and stresses the role of the individual in generating as well as receiving and assigning independent interpretations to messages” (p. 142). Influenced by a similar desire to

expand the definition of literacy, educators working with people with mild intellectual disabilities began to link their instructional practices to this new applied conceptualization. Comprehensive, integrated, approaches to literacy education were tried with people with mild intellectual disabilities. Yet, despite some success, the development of instructional programs has not been an easy task given the history of instructional methods used with people with mild intellectual disabilities. Many of the early instructional programs were limited in their methodological approaches to teaching reading. For example, some focused solely on multisensory methods of instruction, while others focused on immersion in literacy-rich environments (Katims, 2000).

With our shifting ideas about literacy over the last few decades, there has come an explosion of educational reform movements. The impetus for many of these reform movements was the emergence of some truly astonishing statistics concerning the state of education in America. Yet some of the actual remedies encompassed in these reform movements were not based on rigorous research at all. Some reformers viewed the desperate state of education as an opportunity to present their own agenda of reforms, while leaving the validation of their ideas to others (Pogrow, 1996).

Especially interesting are the reform movements in the last twenty years, many of which are significant in their impact, or lack of impact, on literacy in the United States. For example, some of the activities incorporated into recent reform movements, such as whole language, authentic assessment, and heterogeneous grouping, have been enthusiastically embraced by many education reformers (Pogrow, 1996). However, as Elmore (1997) points out, “the story of U.S. educational reform since the early 1980s resembles a Gilbert and Sullivan operetta or the theater of the absurd” (Orlans, 1998, p.

7). In fact, the history of educational reform is replete with examples of major educational reforms failing to survive and become institutionalized. Consider the fate of “open space” and “community-based” education, both popular reform movements of the 1960s and 70s, that advocated physically open classrooms as well as curricula that were more fluid, less rigid constructions. To their detriment, they both lacked the capacity to provide simple unambiguous goals and small incremental changes, and as a result, both were ultimately washed away by a new wave of reforms during the 1980s (Pogrow, 1996).

Many of the reforms during the 1980s stemmed from the 1983 federal report, *A Nation at Risk* (Orlans, 1998). On August 26, 1981, Secretary of Education, T.H. Bell, created the National Commission on Excellence in Education, and gave it the task of examining the quality of education in the United States. The Commission found some alarming trends in the reading abilities of Americans. By some of the simplest measures of everyday reading, writing, and comprehension, 23 million American adults were found to be functionally illiterate. For example, they could not locate specific information from a newspaper article, or determine the time or location of a meeting listed on a simple form. Also, among the nation’s 17-year-olds, about 13% were considered to be functionally illiterate. Equally alarming, functional illiteracy among minority youth was 40%, an astounding level. In short, the Commission found that, on average, graduates of our schools in the early 1980s were not as well educated as the average graduates of 25 or 35 years ago (National Commission on Excellence in Education, 1983). This was particularly disturbing in light of the other findings that described the generally poor

levels of educational attainment of students with disabilities (Moody, Vaughn, Hughes, & Fischer, 2000).

In addition to providing statistics reflecting the current state of literacy, and education in general, the report offered several recommendations to address the ills of the educational system in America. Of particular interest were some of the beliefs upon which these recommendations were based. The report stated that the recommendations were based “on the belief that everyone can learn,” and “that everyone is born with an urge to learn which can be nurtured” (National Commission on Excellence in Education, 1983, p. 70). Such language seemed to suggest the inclusion of students with disabilities in the reform movements called for by the Commission. Unfortunately, this was not the case. At the time of *A Nation at Risk*'s release, America's declining position in the global economy was seen as a failure of individual Americans to compete in the world market. Specifically, American's lacked the skills and knowledge to be competitive. In fact, many people viewed public education as the primary provider of marketplace skills. Yet, the few reforms that actually came about as a result of the Commission's report gave only minimal consideration to special education. This is not surprising given the market values placed on education, especially since people with disabilities were not commonly viewed as competitive members of the workforce (Edgar, 1997). By the end of the 1980s, the beliefs driving *A Nation at Risk* were perhaps moot. The new president, George Bush, would soon begin a new effort at reform by convening a national Education Summit (Orlans, 1998).

At the Education Summit, the president and the nation's governors agreed on creating “explicit state and local goals and standards” (Orlans, 1998). During the early

1990s, the Clinton administration and Congress would build on the foundation laid by the Education Summit and pass the Goals 2000: Educate America Act. The purpose of this Act was to provide a framework for educational reform. Specifically, Goals 2000 sought to ensure equitable educational opportunities for all students, and to promote the voluntary adoption of national standards and certification. The Act even called for consideration to be given to the effect national standards might have on students with disabilities (Goals 2000: Educate America Act, 1994). However, by the late 90s, the degree to which we had met the eight main goals of the legislation was in question. In fact, of the 28 progress indicators articulated in Goals 2000, slight increases in performance have occurred on only 12 of them (Gifted Child Education, 2000). Indeed, the movement for the adoption of national standards had lost much of its momentum (Orlans, 1998). As former Secretary of Education Richard Riley pointed out, America will have to stay focused on the goals of the legislation if Goals 2000 is to have any impact in the future (Gifted Child Education, 2000).

Unfortunately, as the 1990s drew to a close, the statistics on literacy in America were not much better than they were twenty years earlier. The results of a government survey published in the early 90s indicated that 40 million American adults had only “rudimentary reading and writing skills.” The results of the National Adult Literacy Survey (ALS) also indicated that of those 40 million adults, almost 8 million were “unable to perform even the simplest literary task” (National Center for Education Statistics, 1992). The statistics for the school-aged population were not much better. For example, the reading scores of 17-year-olds in 1996 were not significantly higher than they were at the time of the publication of *A Nation at Risk*. In fact, the average scale

score in reading for 17-year-olds on the National Assessment of Educational Progress has remained relatively constant (The Condition of Education, 1999).

Even the independent reading habits of students in general did not show any significant changes in the last twenty years (Lewis, 1998). Indeed, the average reading performance of school-age children has fluctuated over the course of the last decade. In fact, the percentage of students scoring near or above their grade level increased by 4% to 7%, particularly during the early 90s. Unfortunately, by the late 90s these gains had all but disappeared, and average reading performance had returned to the same levels that were present at the beginning of the decade. Also, the results of the 1998 National Assessment of Educational Progress (NAEP) indicated that over 40 percent of fourth grade students performed below grade level in reading. Alarming, over 10% of fourth grade students had such severe reading difficulties that they could not even effectively participate in the National Assessment of Educational Progress (The Condition of Education, 1999).

Unfortunately, the results of the latest National Assessment of Educational Progress administered in 2000 indicated that no substantive progress in the reading performance of fourth grade students had occurred during the intervening years; indeed the same conclusion can be drawn when the NAEP 2000 results are compared with the 1996 and 1992 results. Yet, the NAEP 2000 results are unique in two respects. First, they brought to light a disturbing trend in the data, which suggests that even though on average the performance of fourth grade students nationwide stayed relatively constant, the gap in performance between the highest performing students and the lowest performing students increased measurably. Second, the National Assessment of

Educational Progress included certain provisions for testing accommodations, which allowed the performance of children with disabilities, for the first time ever, to be included in a meaningful way in the overall picture of student achievement. The NAEP 2000 report published its findings in two ways. One was from a sample in which the performance of children with disabilities was removed so that historical comparisons of performance could still be made. The other was with another sample in which the performance of children with disabilities was included to create a baseline for future comparisons that would include these children. The NAEP 2000 results clearly showed that when the scores of these two samples were compared, the performance of children with disabilities had an adverse impact on the nationwide scores of fourth grade students. The implications of these findings are significant. Not only does it appear that real performance gaps are hidden within the national averages, but that among the groups of children adversely affected by these performance gaps, children with disabilities appear to be among those most severely affected (National Center for Education Statistics, 2001)

The National Institute of Child Health and Human Development (NICHD), an organization within the National Institutes of Health (NIH), has conducted extensive research on reading development over the past 33 years. In total, NICHD researchers have studied the reading development of over 34,501 children and adults. About 21,860 typical readers have participated in various NICHD studies in an effort to investigate normal reading development. Significant efforts on the part of NICHD have also been devoted to understanding why some people do not successfully learn to read. In support of these efforts, about 12,641 children and adults with severe reading difficulties have been studied. In a recent report from NICHD's Keys to Successful Learning Summit 99,

the findings of epidemiological longitudinal studies indicated that 17 to 20% of the general population exhibits a reading disability. This suggests that 10 million children, or 1 in 5 children, will experience significant difficulty learning to read. Unfortunately, NICHD longitudinal studies indicate that these difficulties do not reflect some transient developmental lag. To the contrary, 74% of students who experience difficulty reading in third grade still experience difficulty reading by the end of high school (National Institute of Child Health and Human Development, 1999). Indeed, the results of other longitudinal studies have highlighted equally disturbing trends. Students who experienced reading difficulties in the primary grades earned lower classroom grades in core courses, and scored lower on reading proficiency tests in high school (National Center for Education Statistics, 1997).

Thus, many of the most current statistics on literacy in America seem to cast doubt on the effectiveness of the general education curriculum to produce acceptable levels of performance in many of today's students, particularly students with disabilities. In response to this lack of acceptable educational gains, President George W. Bush announced early in 2001 that the cornerstone of his presidency would be the passage of one of the most far-reaching educational reform laws in nearly four decades. The No Child Left Behind Act of 2001 (NCLB) has as one of its operating principles the belief that all children can read successfully by the completion of third grade. Of course, the goal of universal literacy by the end of the primary grades is by no means a new one. What is new is that NCLB has established substantial penalties for educational entities that fail to meet this goal within a predetermined time. The NCLB law allows for no excuses on the part of educational entities for failing to educate all children under their

charge. One major implication of this legislation is that there will be no more excuses accepted by the federal government for the failure of children with disabilities to receive appropriate reading instruction (No Child Left Behind Act, 2001).

An added benefit of this legislation is certainly the timing of its passage. It comes at the tail end of a growing movement to increase the level of participation in the general curriculum on the part of students with disabilities. The 10 years from 1986 to 1996 saw a substantial increase in the number of students with disabilities educated in general education classrooms. For example, the percentage of students with disabilities educated in the general education classroom increased by almost 20% to about 45.4%. This is certainly true of students with mild disabilities, even students with mild intellectual disabilities saw an increase in their level of participation albeit much less than students with mild disabilities. In fact during the 1995–96 school year, the percentage of students with speech or language impairments educated in the general education classroom was about 89%, compared to only 10% of students with intellectual disabilities receiving instruction in the general education classroom (U.S. Department of Education, Office of Special Education and Rehabilitation Services, 1998).

Nevertheless, students with intellectual disabilities have indeed been included in the general education curriculum more now than ever before (Tali & Malka, 1998). This is demonstrated by the increasingly less restrictive placements for students with intellectual disabilities. During the same 10 year period from 1986 to 1996 the percentage of students with intellectual disabilities educated in separate facilities decreased by almost 10 percentage points, while at the same time the percentage of students with intellectual disabilities educated in separate classrooms within general education facilities

decreased as well by about 3 percentage points (U.S. Department of Education, Office of Special Education and Rehabilitation Services, 1998). Not only is this important in terms of the educational growth of students with mild intellectual disabilities, but it is significant in that increased inclusion of students with mild intellectual disabilities can have profound effects on their social adjustment (Bruce & Shade, 1996). In fact, some research suggests that the inclusion of students with mild intellectual disabilities into the general education classroom can actually increase their feelings of loneliness and depression (Tali & Malka, 1998). This is particularly important when one considers the fact that the number of children being classified as having intellectual disabilities has increased by over 11% during the 1990s. In fact when one looks at the growth rate of resident populations and student enrollments over this same period, and one compares it with the rate of growth for children classified as having intellectual disabilities, one finds that the rate of growth for the population of children with intellectual disabilities is more than twice as large. Indeed by the year 2000, well over 600,000 children aged 6 to 21 were classified as having intellectual disabilities (U.S Department of Education, 2001).

Given that more students with intellectual disabilities are being identified, and subsequently included into the general education classroom, questions arise concerning how appropriate the techniques and materials used in the general education classroom are to meet the needs of students with mild intellectual disabilities. Typically, the purpose of reading instruction in the general education classroom is ultimately for the student to gain meaning from the text (Connors, 1992). Yet in the case of the special education resource room, the focus of reading instruction with students with mild intellectual disabilities has rarely been one of gaining the global meaning of text. Instead, literary instruction with

students with mild intellectual disabilities has concentrated for much of its history on the identification of single words. Although this may be accomplished through exposure to well-constructed sets of sequential subskills, this type of instruction still does not compare to the use of integrated multiple sentence text routinely used in the general education classroom (Katims, 2000).

The historically limited exposure to mainstream instructional materials by students with mild intellectual disabilities can be explained in part by past perceptions of their reading and writing abilities. Some educators espouse the view that regardless of what instructional materials are used, students with mild intellectual disabilities seldom read better than the third grade level (Bos & Tierney, 1984). In fact, Katims (2000) pointed out that “virtually every review of the literature on reading and intellectual disabilities finds people with intellectual disabilities read well below their own mental-age” (p.11). However, Katims offered an intriguing explanation for this finding. He proposes that this result may be due, in part, to the fact that teachers de-emphasize reading instruction for students with mild intellectual disabilities. Instead, they center their efforts heavily on social, personal, and vocational related areas. For example, Epstein (1982) found that students with mild intellectual disabilities were not being provided appropriate educational services. In fact, Epstein also found that factors other than instructional techniques, such as teacher expectations, might influence the quality of services provided to students with mild intellectual disabilities. In other words, it was the attitudes of teachers that sometimes negatively impact the quality of services students with mild intellectual disabilities receive regardless of the techniques being used (Morrison, Forness, & MacMillan, 1983).

Out of all the possible reasons, perhaps the greatest barrier to providing quality services to students with mild intellectual disabilities has been the lack of appropriate curricula designed to specifically meet their instructional needs (Polloway, Epstein, Polloway, Patton, & Ball, 1986). Indeed, some research has addressed this need for better-designed curricula, particularly in the areas of decoding and reading comprehension (Polloway et al., 1986). Yet, if “virtually every review” of the literature concerning the abilities of students with mild intellectual disabilities shares a common view of their abilities, what would a review of the literature find concerning the instructional techniques used with students with mild intellectual disabilities?

II. REVIEW OF THE LITERATURE

Mild Intellectual Disabilities: Definition and Characteristics

Mild Intellectual Disabilities Defined

The concept and definition of intellectual disabilities has evolved significantly over the past few decades. The debate surrounding the construct of intellectual disabilities intensified in the late 1990s when the American Association on Mental Retardation (AAMR) redefined its definition, and in doing so, abolished its long established levels of intellectual disabilities (Mild, Moderate, Severe, and Profound). These levels, which were based on the individual's measured level of cognitive dysfunction (MacMillian, Siperstein, & Gresham, 1996), permeated the literature regarding intellectual disabilities. Indeed almost without exception, some form of classification system based on the individual's level of psychometric performance was used in every study concerning intellectual disabilities. Although some differences did exist, generally speaking, terms such as educable mentally retarded, developmental disability, and mild intellectual disabilities referred to the same group of children. In fact, the term mild intellectual disabilities springs directly from the old AAMR classification system that identified children as "mild" whose psychometric performance was 2 to 3 standard deviations below the mean. In relation to intelligence quotient (IQ), this meant

that an individual with mild intellectual disabilities scored within the 55 to 70 point range (MacMillan, 1988).

The discussion surrounding the terminology associated with and definition of intellectual disabilities has continued well into the current decade. Increasingly, the term *intellectual disabilities* is being used in place of the term *mental retardation*. Indeed, even professional and advocacy organizations are embracing this shift in terminology, such as AAMR's adoption of a new organizational name, the American Association on Intellectual and Developmental Disabilities (AAIDD). These changes, however, do not necessarily represent an operational shift, in the sense that these organizations are no longer concerned with individuals who were previously categorized as having *mental retardation*; to the contrary, the term *intellectual disabilities* is an inclusive term intended to be applied to many individuals who were identified under the previous classification systems (Schalock, Luckasson, & Shogren, 2007).

Currently, the Individuals with Disabilities Education Improvement Act (2004) defines intellectual disabilities as follows: intellectual disabilities means significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance. This definition is very similar to the current AAIDD definition of intellectual disabilities, which is as follows: intellectual disabilities is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior, covering many everyday social and practical skills, which originates before the age of 18. Additionally, the AAIDD definition stresses that other facets of the individual should also be considered when conducting an evaluation, such as the

individual's community environment, and the individual's linguistic and cultural influences. All of these things should factor into a determination of the presence of an intellectual disabilities. Furthermore, in the AAIDD's conception of intellectual disabilities there is an assumption that strengths exist along with limitations in these individuals, and that through the use of proper supports over a sustained period of time, the functioning of these individuals can be improved (Schalock, Luckasson, & Shogren, 2007).

These definitions of intellectual disabilities do not seem to require a system of classification based on psychometric performance. However, there is a case to be made for maintaining a classification system. MacMillan, Siperstein, and Gresham (1996) point out that all individuals with intellectual disabilities do not experience the same level of impairment. They maintain that individuals with mild intellectual disabilities (i.e., individuals with IQ's between 55–70) are markedly different from other individuals with more pervasive intellectual disabilities (i.e., moderate, severe, and profound), and as such cannot be viewed as existing on the same continuum. In terms of etiology, prevalence, and reliability, mild intellectual disabilities appears to still be a viable diagnostic category, despite evolving definitions (MacMillan, Siperstein, & Gresham, 1996).

Overview of Characteristics

Students with mild intellectual disabilities, like all other students, differ from one another along a myriad of individual features. However, students with mild intellectual disabilities do seem to share some general characteristics that effect their reading comprehension. Detterman (1999) summarizes the research on the general characteristics of mild intellectual disabilities as follows: "After 1960, the majority of research was

conducted to find the major cognitive deficit that caused intellectual disabilities. The results of that research indicated that nearly every cognitive process studied was deficient in persons with intellectual disabilities” (p. 26). Interestingly, prior to 1960, Haywood, Meyer, and Switzky (1982) characterized the majority of research concerning learning in children with intellectual disabilities as being randomly theoretical, or for all practical purposes, atheoretical. One important benefit of this shift towards studying processes was that it allowed researchers to more readily identify characteristic patterns in learning performance (MacMillan, Keogh, & Jones 1990). An examination of the breadth of research on learning characteristics reveals that some of the most widely cited deficits seem to occur in the areas of memory, attention, and language abilities (Dixon, Carnine, & Kameenui, 1996).

Memory deficits. In terms of memory, deficits have been detected in virtually every global aspect of the memory process examined in students with intellectual disabilities (Detterman, 1979). Indeed, students with mild intellectual disabilities also exhibit deficits in almost every type of specific memory task (Vakil, Shelef-Reshef, & Levy-Shiff, 1997; Wyatt & Connors, 1998), to include the functioning of major memory components like short-term memory, long-term memory (Dulaney & Ellis, 1991), and working memory (Hambrick, Wilhelm, & Engle, 2001). This is significant in light of results that suggests that memory deficits are associated with poor reading performance (John & Rattan, 1991).

In order to better understand memory’s effect on reading performance, a brief explanation of the structure of memory is needed. Various neuropsychological studies have offered support to the theoretical view that there are separate memory stores within

the brain (John & Rattan, 1991). These memory stores have generally been defined as short-term memory and long-term memory. In addition, other neuropsychological studies have identified a structure called working memory that appears to be an important bridge between short-term and long-term memory (Hambrick, Wilhelm, & Engle, 2001).

Working memory seems to be a structure that initiates two key processes. The first process accesses information in the short-term memory, and transforms that information into a form suitable for storage in long-term memory. The second process serves as a monitor of cognitive performance, which also helps to oversee the transfer of information from short-term to long-term memory (Hambrick, Wilhelm, & Engle, 2001).

The first process initiated by working memory seems to be of particular importance to students with mild intellectual disabilities, given that they appear to have significant difficulty with short-term memory in particular (Hambrick, Wilhelm, & Engle, 2001). Short-term memory is commonly thought of as having a limited capacity and a limited duration (John & Rattan, 1991). As such, a mechanism to transfer short-term information into long-term memory is critical for a complex skill like reading comprehension (Swanson, 1994). Researchers have frequently focused upon this mechanism as the precursor of many of the memory deficits found in students with mild intellectual disabilities. Typically, they view this mechanism in one of two ways. One perspective is that this mechanism is fundamentally similar in students with or without mild intellectual disabilities; however, in the case of students with mild intellectual disabilities, the mechanism has a more limited capacity. The other perspective is that the mechanism in students with mild intellectual disabilities is fundamentally different (Detterman, 1999).

Interestingly, it would seem that the application of a cognitive strategy is vital for this mechanism to function successfully. Bray (1979) defined cognitive, or memory strategies as “a set of behaviors specifically initiated to cope with the problem of remembering” (p. 716). As such, cognitive strategies are called upon to organize, encode, and ultimately retrieve information (Turner & Matherne, 1994). In particular, in order for information to be maintained in our memory, it appears that some form of cognitive strategy, such as rehearsal or association, often has to be applied to facilitate the transfer of information into our more permanent long-term memory store. The application of cognitive strategies occurs within the context of working memory, and as such, appears to form the basis of the first process initiated by our working memory (Swanson, 1994).

In fact, the poor memory performance of students with mild intellectual disabilities may be due more to an inefficiency, or failure, in utilizing such memory strategies than in any inherent limitation of capacity (Dixon, Carnine, & Kameenui, 1996; Luftig & Johnson, 1982; Turner, Hale, & Borkowski, 1996). The effective use of cognitive strategies is therefore a crucial factor in addressing the memory deficits of students with mild intellectual disabilities (Mason, 1978). Indeed, much of the reading comprehension difficulties experienced by students with mild intellectual disabilities may significantly be due to their lack of effective strategy usage (Boyle, 1996).

This may offer an insight as to why students with intellectual disabilities organize, rehearse, and elaborate to a lesser extent than their peers without disabilities (Scruggs & Mastropieri, 1995). One reason for this may be the fact that students with mild intellectual disabilities often approach memory tasks in a passive manner, and therefore fail to adopt strategies spontaneously. In fact, students with mild intellectual disabilities

appear to benefit little from extended presentation time, when such time is given in an effort to aid strategy adoption (Turner & Matherne, 1994). There is even a tendency among students with mild intellectual disabilities to over employ old strategies in place of adopting new, more contextually appropriate ones (Mason, 1978).

Such findings suggest the need for specific strategy instruction, the importance of which came to light in research by Male (1996), who investigated to what extent students with mild intellectual disabilities knew about appropriate cognitive strategies. Male's work a few years earlier had suggested a link between prior knowledge of cognitive strategies and the application of such strategies. Male's later work seems to confirm this, in that proper strategy usage seems to require prior knowledge of the necessary cognitive approaches. Indeed, Keeler and Swanson (2001) found that strategy knowledge appeared to be a key indicator of proper strategy usage. Of course, the positive effects associated with building strategy knowledge through specific strategy instruction have already been widely reported. Brown, Campione, and Murphy (1974) reported improvements in the short-term memory performance of students with mild intellectual disabilities when instruction on cognitive strategies such as rehearsal and practice was presented to them.

The second process initiated by working memory also seems to be of importance in students with mild intellectual disabilities given that in addition to poor usage of cognitive strategies, Turner and Matherne (1994) found that poor metacognition only served to confound these existing cognitive deficits. Effective metacognition is essential for students to realize the need for a cognitive strategy, to select an appropriate strategy, and to monitor its effectiveness. Thus, deficits in working memory often lead to the

failure of students with mild intellectual disabilities to effectively monitor their own cognitive behaviors (Swanson, 1994).

Attention deficits. Over the last four decades, nearly 1000 separate studies have examined attention deficits. Common to many of these studies is the generally held belief that, at least for some children, the longer they are engaged in a given activity the harder it is for them to sustain their attention. Yet despite this substantial collection of research concerning attention deficits in general, very few of these studies have investigated to what extent, if any, the intellectual ability of an individual has on the level of sustained attention they are able to demonstrate (Tomporowski & Simpson, 1990). Gadow and Poling (1988) point out that this is not particularly surprising since subaverage intelligence (i.e., IQ of less than 80) has often been viewed as a legitimate reason to exclude individuals from studies dealing with attention deficits. Fortunately, in recent years, an increasing number of researchers have begun to recognize that significant attention deficits do indeed occur in individuals with mild intellectual disabilities (Johnson & Handen, 1994; Pearson et al., 2003). In fact, while attention deficits are generally exhibited by about 3 to 5% of typically developing children, attention deficits are actually found in about 9 to 18% of children with intellectual disabilities (Epstein, Cullinan, & Gadow, 1986).

As some of the earliest researchers to study the attention deficits of individuals with intellectual disabilities, Zeaman and House (1963) found that these individuals had a difficult time attending to the relevant dimensions of a given task. In a sense, the student with mild intellectual disabilities seems to lack the ability to control effectively his or her own attention. In other words, this lack of control appears to manifest itself as difficulties

with selective attention, or meta-attention. In fact, such deficits in attention are a very commonly reported characteristic of students with mild intellectual disabilities (Dixon, Carnine, & Kameenui, 1996; Epstein, Polloway, Patton, & Foley, 1989).

More recent studies have suggested that deficits with selective attention often result in students with mild intellectual disabilities not only having difficulty selecting the relevant features of an isolated task, but also selecting the relevant features of information in general that is presented to them (Scruggs & Mastropieri, 1995). This difficulty may also be exacerbated by their inability to inhibit their responses to other stimuli not directly related to the task (Forness & Kavale, 1993). Unfortunately, this distractibility, or lack of vigilance, seems to increase the longer they are engaged in completing a given task (Tomprowski & Simpson, 1990). In essence, students with mild intellectual disabilities appear to lack the ability to effectively allocate their own capacity for attention. This is of particular importance since students with mild intellectual disabilities seem to have less attention to allocate than do typical students (Dixon, Carnine, & Kameenui, 1996).

This may offer some insight as to why students with mild intellectual disabilities, unlike typical students, seem unable to simultaneously attend to multiple features of a task (Zeaman & House, 1979). In addition, the capacity to shift attention from one feature, or task, to another is also diminished in students with mild intellectual disabilities (Bergen & Mosley, 1994; Yoder & Kaiser, 1993). In fact, some students with mild intellectual disabilities may experience an increased amount of perseverance in their responses due to this lack of the ability to switch attention efficiently from one task to

another. This failure to coordinate successive approaches to multiple tasks is typical of decreased capacity in relation to metacognition (Cornish, Munir, & Cross, 2001).

Fortunately, there is some evidence to suggest that improvement in the ability to attend to relevant features of information is possible with students with mild intellectual disabilities, yet such improvement has generally taken longer to achieve than similar gains with students without disabilities (Zeaman & House, 1963). Although students with mild intellectual disabilities typically fail to spontaneously activate metacognitive processes, with proper instruction it appears that they can be taught to monitor their own cognitive performance (Ezell & Goldstein, 1991; Sternberg, 1997).

Language deficits. Language deficits are the third commonly reported characteristic of students with mild intellectual disabilities (Epstein et al., 1989). In fact, language deficits occur in a greater proportion among students with mild intellectual disabilities than with students who do not have disabilities (Bernstein & Tiegerman, 1993). Language is frequently defined as a system of symbols, which may be auditory, visual or kinesthetic, that allow people to interact in social and academic settings (Schoenbrodt & Kumin, 1997). In terms of expressive language, students with mild intellectual disabilities typically have difficulty initiating, or terminating, a conversation smoothly. In addition, the tone of such conversations often tends to be too informal in social contexts that require formality. This is further complicated by these individuals' tendency to repeat segments of the conversation, and to overly rely on clichés to express their thoughts (Paul-Brown & Diggs, 1994).

In addition, such language deficits may lead to difficulties with receptive language. Abbeduto and Nuccio (1991) found that students with mild intellectual

disabilities tend to focus on the more formal aspects of spoken language. As such, they typically emphasize the sound and sequence of words rather than their semantic, or conceptual, aspects. As a result, Abbeduto and Short (1994) concluded that students with mild intellectual disabilities often fail to comprehend a significant amount of the language that they hear spoken.

Compounding the difficulties created by their lack of adequate language comprehension is the tendency of students with mild intellectual disabilities not to signal their non-comprehension (Ezell & Goldstein, 1991; Fujiki & Brinton, 1993). Some researchers suggested that this reluctance to signal non-comprehension on the part of the listener with mild intellectual disabilities was due primarily to their differential relationship with the speaker, who almost always did not have a disability (Abbeduto & Short-Meyerson, 1997). Still other researchers suggested that the nature of the message itself was the determining factor. Specifically, students with mild intellectual disabilities were less likely to signal non-comprehension when the speaker's message contained ambiguous information rather than just incompatible information. And further still, students with mild intellectual disabilities may lack the ability to recognize their own non-comprehension (Fujiki & Brinton, 1993).

The findings of Abbeduto and Short-Meyerson (1997) seem to support the latter supposition. They found that the speaker's message, rather than any particular characteristic of the speaker, seemed to be the determining factor governing comprehension. In support of earlier findings, Abbeduto and Short-Meyerson found that messages with intentionally ambiguous information seemed less likely to prompt non-comprehension signaling. And, in fact, students with mild intellectual disabilities seemed

to have language deficits that make them less aware of their own comprehension, particularly when presented with ambiguous information.

Their language deficits also lead to difficulties with complex vocabulary, complex sentence structure, and complex passage structure (Ezell & Goldstein, 1991). Students with mild intellectual disabilities tend to have markedly smaller vocabularies than their peers without disabilities. And in fact, students with mild intellectual disabilities tend to acquire new vocabulary at a much slower rate than typically developing students (Mervis, 1990). There seem to be many factors influencing the slower rate of acquisition, and generally limited vocabularies of students with mild intellectual disabilities. One factor is that students with intellectual disabilities seem to experience the normal period of rapid vocabulary acquisition at a much later age than typically developing students (Yoder & Kaiser, 1993). A second factor is that students with mild intellectual disabilities simply have more difficulty with memory functioning, which seems to limit the scope of their vocabularies (Mervis, 1990).

Additionally, students with mild intellectual disabilities often experience difficulty constructing semantic representations of sentences that contain vocabulary that is context dependant. Specifically, they may experience difficulty in selecting the appropriate meaning for a word that has multiple meanings. Indeed, the greater the degree to which the words of a sentence are related, the greater the likelihood that the student with mild intellectual disabilities will understand the meaning of the sentence (Merrill & Jackson, 1992). This seems to be supported by research that indicates that students with mild intellectual disabilities comprehend idiomatic sentences significantly less than their peers without disabilities. Idiomatic sentences, by definition, often have a

low degree of relatedness among the words contained within them (Ezell & Goldstein, 1992).

The sensitivity of students with mild intellectual disabilities to the grammatical complexity of the sentences illustrates the difficulty posed by complex sentence structure. Berry (1972) found that an increase in grammatical complexity often produced a decrease in understanding of the sentence's meaning. Admittedly, this may also be the case with students without disabilities as well; however, the amount of control sentence structure has over language comprehension seems to be greater for students with mild intellectual disabilities (Merrill & Jackson, 1992).

When both complex vocabulary and complex sentence structure combine to produce complex passages, the same difficulties appear for students with mild intellectual disabilities. Specifically, although all students generally experience difficulty with complex passages, students with mild intellectual disabilities appear to experience difficulty to a much greater extent. This is especially the case when students are asked to recall elements of a reading passage after a few days have elapsed. Students with mild intellectual disabilities were less able to access information from these structurally complex passages (Wolman & Van Den Broek, 1997).

Research has shown that improvements in language skills are possible with students with mild intellectual disabilities through the use of carefully developed instructional programs (Abbeduto & Nuccio, 1991; Rondal & Edwards, 1997). A key component of these programs is a clear focus on the typical sequence of language development (Rondal & Edwards, 1997). By attending to developmental sequences,

teaching strategies that encompass crucial language skills can be formulated and better implemented (Abbeduto & Nuccio, 1991).

Overview of the Literature

Although reading has been researched for well over one hundred years, little of the early historical research focused on comprehension (Venezky, 1984). During this period researchers, and teachers as well, felt that comprehension was the natural result of reading and, therefore, the process of comprehension did not necessarily need to be researched or taught, just measured (Dole, Duffy, Roehler, & Pearson, 1991; Durkin, 1978–1979). This perception changed dramatically in the early 1980s with the publication of Dolores Durkin’s (1978–1979) seminal study of reading comprehension. She found that teachers devoted less than one percent of their instructional time to actually teaching comprehension. Durkin further pointed out that when teachers did teach reading comprehension it amounted to little more than mentioning it, rather than actively demonstrating or explaining the whole comprehension process. Not surprisingly, her findings prompted a flood of dedicated research on comprehension (Asselin, 2002).

As interest increased in studies that investigated reading comprehension, so did interest in developing new theories about the nature of reading comprehension. New theories began to emerge that viewed reading comprehension as an active, receptive process that engaged the reader. Reading comprehension evolved into a construct that was dependent upon the intentional interaction between the reader and the text, the result of which was the derivation of meaning (Durkin, 1993; Rumelhart, 1980; Spiro, 1980). Indeed, in a very real sense, the text took its meaning from the reader, as much as the

reader took it from the text (Harris & Hodges, 1995). Such a revolution in our thinking about comprehension has occurred in the last 30 years that, as Durkin (1993) points out, comprehension is now generally viewed as being “the essence of reading.”

How does one bring shape and form to this body of research? Asselin (2002) maintains that the last 30 years of reading comprehension studies fall nicely into two streams of research. One stream of research focuses upon the nature and characteristics of the comprehension process. In essence, these are descriptive studies that attempt to provide a better understanding of the many intricate aspects of this process. The other stream of research focuses upon comprehension instruction. These are intervention studies that attempt to provide a better understanding of how reading comprehension can best be taught.

Yet contained within each of these two broad classifications of the research, there appear distinct categories. Maria (1990) conceptualized the reading comprehension process as having three distinct operands whose reciprocal interactions produced meaning and understanding. These were simply defined as the reader, the text, and the environment or teacher (Maria, 1990). The organizational themes of reader, text, and teacher have been recurring elements in many reviews of the literature surrounding reading comprehension (Gersten, Fuchs, Williams, & Baker, 2001; Mastropieri, Scruggs, Bakken, & Whedon, 1996). As such, this paper will organize research on reading comprehension with students with mild intellectual disabilities into two general categories, descriptive and intervention, along with utilizing the organizational themes of reader, text, and teacher. Specifically, the organizational themes of reader and text will be utilized under the province of descriptive research, while the organizational theme of

teacher will be utilized primarily under the province of intervention research (National Reading Panel, 2000).

Finally, this literature review will focus on what some have called the very essence of comprehension, the identification of main ideas (Williams, 1988). This will be accomplished through the examination of a variety of studies that deal specifically with the abilities of students with mild intellectual disabilities, and students with mild disabilities in general, to recognize and express the main ideas of text. These studies will examine a wide range of instructional techniques, from the application of relatively simple strategies to the application of more systematic and global approaches.

Descriptive Studies in Reading Comprehension

In this next section, descriptive studies focusing upon the interplay of the reader and the text, and the resulting influence they exert over the reading comprehension abilities of children with mild intellectual disabilities, will be reviewed. This section will begin by focusing on some critical factors often associated with the reader, namely prior knowledge, comprehension monitoring, and strategy usage; then some critical factors associated with the text will be examined, with the review focusing on the smallest aspects of text first (i.e. letters), followed by a logical progression in complexity all the way through to an examination of the effects on comprehension of stories as a whole.

The reader. Over the past 30 years, many studies (Caillies, Denhiere, Kintsch, 2002; Chall, 1983; Means & Voss, 1985; Pearson, Hansen, & Gordon, 1979; Snider & Tarver, 1987) have consistently found that the level of a child's prior knowledge concerning the information contained within a given text has a significant influence on the child's ability to successfully comprehend. In effect, children with high levels of prior

knowledge appear to readily use that knowledge in constructing more accurate and cogent representation of the text than do children with low levels of prior knowledge (Caillies, Denhiere, & Kintsch, 2002). Researchers have speculated that this may be due to the fact that prior knowledge provides a framework for the reader to use, which results in the reader being able to form new inferences and hypotheses that help them to better process and incorporate new information (Cain-Thoreson, Lippman, & McClendon-Magnuson, 1997; Kintsch, 1994; Perrig & Kintsch, 1985).

Interestingly, there is some evidence that suggests that extensive prior knowledge may even be a hindrance to successful comprehension. Whereas, low prior knowledge may prevent the reader from generating adequate expectations about the text, too much prior knowledge can conversely lead to too many expectations about the text. So powerful are these expectations that they interfere with the reader's understanding of what is explicitly written (Davey & Kapinus, 1985; Lipson, 1983; Maria & MacGinitie, 1980; Spiro, 1979). Riley and Shapiro (1990) provide an easily understood example of what can happen when children rely too much on prior knowledge instead of what is exactly written in the text. Specifically, they illustrate this by discussing what kind of representations of a text about horse back riders children might construct. Regardless of the details provided in the story, a child from the country might represent the "rider" in the story as a cowboy, whereas a child from the city might represent the "rider" in the story as a mounted policeman. In both cases, their prior knowledge leads them to make powerful predictions about the information in the text, which they accepted in spite of any contradictory details contained within the actual text.

Davey and Kapinus (1985) conducted a study based on the premise that both reader and text factors need to be considered when attempting to investigate the effects of prior knowledge on the reader's ability to comprehend unfamiliar information contained within the text. Thus, their study looked at to what extent prior knowledge influenced the reader's ability to integrate unfamiliar information so that it could be recalled immediately, and even after some delay. A particularly interesting aspect of their study was that Davey and Kapinus embedded unfamiliar information within familiar information, even going so far as to manipulate the order in which these kinds of information were presented.

What they found was that prior knowledge did indeed interact with text factors such as the ordering of information. In fact, even average to above average readers appeared to be sensitive to the relative order of information. Davey and Kapinus (1985) found that seemingly good comprehenders (i.e., children with relatively high prior knowledge) actually appeared to recall unfamiliar text less effectively when it followed highly familiar text, which they maintain may be due to the potentially dampening effects of high prior knowledge. Thus, some "good comprehenders" appeared to be too willing to incorporate new information into well established scheme without regard as to what was explicitly contained within that information.

Even when one examines the effects of prior knowledge in children who are not generally thought of as being "good comprehenders" (i.e., children with mild disabilities), there appears to be a reciprocal relationship between prior knowledge and comprehension. Specifically, it appears that relatively high degrees of prior knowledge among children with mild disabilities tend to help facilitate comprehension; and in turn,

successful comprehension tends to facilitate more extensive knowledge. However, because of the myriad of other factors limiting the productivity of the reading of children with mild disabilities, they often fail to acquire a substantial base of knowledge to begin with, which consequently hampers their ability to comprehend (Snider & Tarver, 1987).

Caillies, Denhiere, and Kintsch (2002) also conducted a study examining the effects of prior knowledge on the comprehension abilities of what they classified as “beginner readers”, and compared them to what they termed “intermediate” and “advanced” readers. They believed that advanced readers, those who possessed the greatest amount of prior knowledge, would naturally perform better on comprehension tasks than would beginner readers. What the results of their study indicated was not surprising. The level of prior knowledge possessed by the reader did indeed influence comprehension performance, with so called advanced readers performing significantly better on comprehension tasks than did beginner readers. In fact, not only did the intermediate and advanced readers demonstrate better accuracy in their responses when compared to beginner readers, they also appeared to demonstrate greater fluency as well.

This aspect of Caillies, et al., (2002) findings are equally important because fluency has long been regarded as a necessary prerequisite for successful comprehension (Perfetti, 1985; Snider & Tarver, 1987; Stanovich, 1982). The belief is that the decoding of text must be rapid and accurate so that the reader does not have to devote too much attention to completing it. In essence, successful reading is a zero-sum game, the more attention that has to be allocated to the decoding means that less can be allocated to comprehension. This is particularly significant when one realizes that children with mild disabilities often have a limited capacity for attention (Snider & Tarver, 1987).

The concept of comprehension monitoring has its roots in the early work of Flavell (1976) who first championed the theoretical construct of metacognition. Metacognition, in a classic sense, is generally viewed as an awareness of one's own internal cognitive processes (Wong, 1986). Early researchers, like Brown (1980), soon began to apply this construct to reading, and in doing so underscored its prominent role in effective comprehension (Wong, 1986). Many subsequent researchers (Baker, 1989; Brown, Armbruster, & Baker, 1986; Cain-Thoreson, Lippman, & McClendon-Magnuson, 1997) have extended these findings and built a strong body of evidence that suggests a link between good metacognition (comprehension monitoring) and successful reading comprehension, in that good comprehenders tend to monitor the efficacy of their own comprehension.

Comprehension monitoring is generally thought of as the process by which the reader examines, and subsequently forms a judgment as to the quality of his or her own understanding (Revelle, Wellman, & Karabenick, 1985). In order to be successful at comprehension monitoring, a child with mild intellectual disabilities, or any child for that matter, must be able to realize when their efforts to derive meaning have been unsuccessful, and consequently, they must actively seek clarification (Ezell & Goldstein, 1991).

Ezell and Goldstein (1991) conducted a study to investigate the comprehension monitoring abilities of children with mild intellectual disabilities. They believe that the best overt evidence that any child is utilizing comprehension monitoring skills is the frequency and quality of requests for clarification they make during the performance of comprehension tasks. The problem was that children with mild intellectual disabilities

rarely exhibited these kinds of behaviors. In fact, in a study by Kamhi and Johnson (1982), children with mild intellectual disabilities appeared to ask significantly fewer questions during comprehension tasks than did typical children of comparable mental ages. Interestingly, one common compensatory strategy that children with intellectual disabilities did exhibit when faced with difficulties comprehending was to simply pretend to understand, or just to refuse to respond. This refusal to respond, in particular, represented a desperate and disastrous strategy employed in a situation for which the child appeared to have nothing in his repertoire to guide him (Horner, Bellamy, & Colvin, 1984).

Accordingly, Ezell and Goldstein (1991) attempted to address the notion that children with mild intellectual disabilities, at least in some situations, simply lacked a strategy to employ. Specifically, they were interested in investigating to what extent, if any, children with mild intellectual disabilities could be taught to actively monitor their comprehension, and in doing so mediate this critical reader characteristic often attributed to them. What they found was that the extent to which children with mild intellectual disabilities monitored their comprehension varied significantly. Their results showed that despite this, however, children with mild intellectual disabilities were indeed capable of improving their comprehension monitoring skills through the acquisition of more strategic approaches. This conclusion was further supported by the findings of subsequent studies like the one performed by Abbeduto and Short-Meyerson (1997).

Abbeduto and Short-Meyerson (1997) set out to determine which factors could possibly be influencing the variability observed in the extent to which children with mild intellectual disabilities requested clarification during difficult comprehension tasks. They

devised a study in which children with mild intellectual disabilities were presented with a message that was either inconsistent in nature, or ambiguous in nature. In addition, they also varied the identity of the person delivering the message. In essence, they sought to determine whether the variability identified in previous studies was due to factors related to the nature of the message, or the messenger (Abbeduto & Short-Meyerson, 1997). This was an important distinction because it is generally held that children with mild intellectual disabilities have the wherewithal to generate requests for clarification (Rosenberg & Abbeduto, 1993), therefore their apparent failure to seek clarification when faced with difficulty comprehending is likely due to other factors.

For their study, Abbeduto and Short-Meyerson (1997) chose to measure verbal responses, or questions, as an indicator of successful comprehension monitoring. Although other overt indicators were present (i.e., hunched shoulders, puzzled expressions), they were viewed as too problematic to measure. The results of their study indicated that the identity of the person providing the message did not appear to account for the variability present in the rates of signaling noncomprehension among children with mild intellectual disabilities. What did appear to be a significant mediating factor of noncomprehension signaling rates was the nature of the message itself. It should be noted that what interested Abbeduto and Short-Meyerson was not that these children failed to understand a message that was purposefully designed to be incomprehensible, but rather that they failed to recognize that the message was the probable source of their confusion, and that failure resulted in no subsequent request for clarification of the message. It is a bit of a fine distinction, but it is at the heart of the difficulties in comprehension monitoring experienced by children with mild intellectual disabilities.

The results of Ezell and Goldstein (1991) made reference to one final characteristic that is frequently associated with children mild intellectual disabilities, which is inefficient strategy usage. It is perhaps fitting to discuss this particular characteristic last because it is probably inextricably linked to the effects of both prior knowledge and comprehension monitoring; in other words, children with mild intellectual disabilities who exhibit strategy deficits generally appear not to understand the task, and not be able to evaluate their own performance (Turner & Matherne, 1994).

In the late 1970s, Mason (1978) developed a study to examine the role strategy usage played in the reading performance of children with mild intellectual disabilities. She points out that poorly performing readers without disabilities still seem to demonstrate some basic knowledge about our language's rules and structure, and indeed in some respects they do employ strategies in their approaches to reading. Mason was therefore interested in knowing if, like a typical poor reader, children with mild intellectual disabilities would employ similar strategies. She focused on the results of previous research that brought into question the ability of children with mild intellectual disabilities to readily recognize redundant patterns, which she speculated was an important element of formulating strategies. Mason's study set out to explore whether children with mild intellectual disabilities could effectively pronounce words and produce appropriate associations between words, with the assumption being that the ability to do this was indicative of the employment of successful strategies.

The results obtained by Mason (1978) indicated the reading performance of children with mild intellectual disabilities was hampered by their tendency to overuse certain strategies. She found that children with mild intellectual disabilities were likely to

over-generalize successful strategies into inappropriate contexts, essentially transforming them from productive strategies into unproductive strategies which often resulted in inefficient reading. In fact, Mason concluded that this peculiar over-use seemed to interfere with the development of better reading skills on the part of children with mild intellectual disabilities.

Around this same time, Vandever and Neville (1976) conducted a study to examine how children with mild intellectual disabilities compared to typically performing children in relation to the application of two specific strategic approaches. For the purposes of this study, they assumed that there were two basic global strategic approaches a reader could take to decipher a passage of text: a synthetic approach and an analytic approach. A synthetic approach would involve the reader considering each of the smaller aspects of the text in an effort to create an understanding of the passage as a whole; as where an analytic approach would involve the reader taking into account the passage as a whole in an attempt to understand its constituent parts. Vandever and Neville sought to evaluate these two strategic approaches in terms of their effectiveness with a group of typically performing children, and with a group of children with mild intellectual disabilities. Also, if one approach was found to be more beneficial, they were interested in whether or not differences could be established between each group of children.

Vandever and Neville (1976) found that in relation to the first aspect of their study, a comparison of the two approaches in general, the synthetic approach seemed to produce better results than did the analytic approach. This was true across both groups of children. Their results suggested that this overall strategy was generally well suited to the

unique characteristics of children with mild intellectual disabilities; which led them to conclude that when provided with more effective strategies to use, children with mild intellectual disabilities can demonstrate strategic reading behaviors.

Over the years that followed, studies (e.g., Bray & Turner, 1987; Campione & Brown, 1977) continued to show that children with mild intellectual disabilities were deficient in their application of strategic behaviors (Turner & Matherne, 1994). By the late 1990s, Turner, Hale, and Borkowski (1996) had developed a unique study to examine how children with mild intellectual disabilities actually develop their strategic approaches, and how that development compared to development of similar strategic behaviors among typical children. One key notion in their study was the proposition that, at least in children without disabilities, as children increase in age there is a corresponding increase in strategy usage. They conceded, however, that few studies of this sort had been performed with children with mild intellectual disabilities, and of those that were, many failed to detect a significant increase in strategy usage over time. However, there were studies (e.g., Butterfield, Siladi, & Belmont, 1980; Ornstein, Medlin, Stone, & Naus, 1985) that suggested the use of a particular strategy was in fact dependent on the child having reached a certain developmental milestone; which according to Turner et al. (1996) suggested that in order for a study to detect improvement in strategy usage, it would have to be of sufficient duration to allow for these developmental events to occur.

Therefore, Turner et al. (1996) created a study that would span three years, and attempt to describe the natural process of strategy development in both children with mild intellectual disabilities and children without disabilities. Their study would pay particular

attention to two crucial aspects of this process. First, they sought to determine whether children with mild intellectual disabilities really were less strategic in their behavior, as past findings had suggested. Second, they sought to determine if natural incremental improvements in strategy usage could be detected in children with mild intellectual disabilities, in the same manner that past research had found this to be the case with children without disabilities.

The results of the Turner et al. (1996) study indicated that children without disabilities did indeed perform better than children with mild intellectual disabilities, in that they were deemed more strategic in their behaviors. Although this was the case, the authors made it a point to note that the children with mild intellectual disabilities in their study were far from non-strategic, as some past research had characterized them. These children did, in fact, continue to demonstrate strategic approaches throughout the course of the study. Unfortunately, in terms of the second aspect of their investigation, children with mild intellectual disabilities were not found to exhibit an increase of strategic behavior as their age increased. It appeared that simple maturational effects were not sufficient enough to result in any significant increase in beneficial strategic behaviors.

An earlier study by Turner and Matherne (1994) actually attempted to address some of the intangible factors that Turner, Hale, and Borkowski (1996) had hoped might result in a natural increase in strategy usage over time. Turner and Matherne suggested that the general deficit in strategy usage demonstrated by children with mild intellectual disabilities may be positively impacted by some of the peripheral aspects of the task. For example, something as seemingly simple as providing feedback to a child with mild intellectual disabilities, or any other child for that matter, during the performance of a

task might lead to an improvement in the application of strategic behaviors. Indeed, without feedback how could they be expected to define an appropriate goal, much less assess their own progress towards reaching that goal? In the absence of feedback, the child with mild intellectual disabilities may simply assume that no refinement of their approach is required, since they tend not to spontaneously evaluate their own performance. Therefore, Turner and Matherne (1994) set out to measure what effect, if any, the application of performance feedback would have on mediating the strategy deficits of children with and without mild intellectual disabilities.

The results of Turner and Matherne's (1994) study did yield one finding that was not entirely unexpected, namely that by providing performance feedback, they were able to show an increase in strategy usage among children without disabilities. Unfortunately, their results did not indicate the same to be true of children with mild intellectual disabilities. Even though their supposition proved to be true in the case of children without disabilities, Turner and Matherne conceded that two factors may have resulted in the disappointing results in relation to children with mild intellectual disabilities. First, the nature of the tasks involved in this assessment were "one time events" that offered no practice opportunities. Although practice effects were not an intentional part of this study, Turner and Matherne speculated that they may have been an unintentional part of other past studies upon which their supposition, once again that children with mild intellectual disabilities would improve, was based. Second, Turner and Matherne speculated that children with mild intellectual disabilities may be less adept at interpreting feedback. As a result, any potential benefit associated with providing feedback may have simply been lost in the child's failed attempt to understand the feedback.

The text. Perhaps the simplest way to begin any examination of text is to first focus upon its most fundamental component, letters. All letters contained within any given text have been combined to form words according to a set of orthographic rules particular to the native language of the text. The orthographic structure of English language texts is predicated upon a body of rules that dictate exactly which sequence of letters are acceptable when forming English words. For example, the nonsense word “tam” could be an English language word because it is orthographically sound; however the nonsense word “csb” could not be an English language word because it does not contain a vowel. For all practical purposes, the orthographic rules of our language require that all sequences of letters contain at least one vowel if they are to be considered an English language word (Allington, 1981).

Beginning in the late 1970s, researchers began to establish a link between the reading ability of students and their sensitivity to the orthographic structure of text, the supposition being that students who were naïve about orthographic structure tended to not read and comprehend as well (Allington, 1978; Gibson & Levin, 1975; Niles, Grunder, & Wimmer, 1977). Allington (1981) points out that the research conducted in the 1970s showed that in general most readers develop a sense of what orthographic structures are acceptable through repeated exposure to text. It was proposed at the time that this acquired sense of proper text orthography helped the reader to process the text quicker, and thereby become a more fluent reader; which, in and of itself, is critical to successful comprehension (Allington, 1981; Gibson & Levin, 1975).

Allington (1981) implemented a study to investigate the development of this sensitivity to orthographic rules among students with mild intellectual disabilities. He

sought to extend the findings of past research to the population of students with mild intellectual disabilities in an effort to determine what role intelligence played in the seemingly natural process of acquisition. What Allington found was that the results of his study seemed to support the notion that students with mild intellectual disabilities did in fact develop an increased sense of orthographic structure after repeated exposure to text. Indeed, the results appeared to indicate that intelligence did not exert a significant influence on this process, but rather the initial reading level of the student with mild intellectual disabilities seemed to be predictive of the extent to which they developed an awareness of common orthographic patterns. However, Allington did acknowledge that even though intelligence, in a general sense, did not appear to play a role, other specific factors and characteristics related to the intellectual capacity of students with mild intellectual disabilities likely do impact the initial reading levels of these students.

Kabrich and McCutchen (1996) acknowledge a similar conclusion in their study on phonemic support in comprehension with children with mild intellectual disabilities. They maintain that previous research seems to support the assertion that children with mild intellectual disabilities in general have the necessary capacity to comprehend written text. The difficulty experienced by children with mild intellectual disabilities in comprehending appears to be associated more accurately with their inability to successfully execute the requisite processes that good comprehension requires. Apart from simply recognizing the orthography of single words, another fundamental skill is the ability to establish cohesive and meaningful relationships between the individual words in a sentence (Merrill & Jackson, 1992). It is this process that Kabrich and McCutchen (1996) examine in their study. Specifically, they look at how children with

mild intellectual disabilities activate their knowledge of individual words, and how they store that information until the comprehension process can be applied to the entire sentence.

Kabrich and McCutchen (1996) maintain that typical readers utilize their knowledge of phonemic rules and principles to gain an understanding of each individual word in a sentence through a construct called the articulatory loop. As each individual word is understood, its meaning is stored in another construct known as the phonological store until such time as enough individual words of a sentence are understood, and a subsequent meaning can be assigned to the sentence as a whole. In fact, many researchers (i.e., Kintsch, 1988; Merrill & Jackson, 1992) have mentioned the importance of being able to integrate the meanings of individual words as a crucial component of sentence comprehension. What Kabrich and McCutchen found was that children with mild intellectual disabilities seemed to encounter two significant obstacles which often result in this process ending in an incomplete, or just plain incorrect, understanding of the sentence they are attempting to read. The first obstacle is that children with mild intellectual disabilities have a tendency to apply their knowledge of the phonemic code, which may in fact be incomplete, in an inconsistent fashion. So much so that Kabrich and McCutchen have suggested that the information that finally reaches the phonological store is often “impoverished”. The second obstacle faced by children with mild intellectual disabilities is that without some form of active maintenance, this information, as potentially impoverished as it is, begins to decay rapidly. So rapid is this loss of information, that the child does not have sufficient time to properly utilize it in the

comprehension process before significant amounts of it perish (Kabrich & McCutchen, 1996).

Fortunately, a study by Merrill and Jackson (1992) seems to suggest that the difficulties children with mild intellectual disabilities experience when attempting to store and retrieve information can be mediated by the very nature and character of the contextual information contained within the sentences they are attempting to understand. They proposed to investigate to what extent the semantic relatedness of words in a sentence had on the ability of children with mild intellectual disabilities to construct and assign a meaning to the sentence as a whole. This proposition seems reasonable in light of the results of other studies (e.g., Caillies & Denhiere, 2001; Caillies, Denhiere, & Jhean-Larose, 1999) that suggest high degrees of semantic relatedness helps children access prior knowledge, which would provide further assistance to them in their efforts to construct and assign meaning. What Merrill and Jackson found was that when both typical children and children with mild intellectual disabilities were presented with sentences of “low-association,” typical children were more successful at constructing an appropriate meaning for the sentence than were children with mild intellectual disabilities. In contrast, when presented with sentences Merrill and Jackson described as “high-association” sentences, children with mild intellectual disabilities appeared to be more successful. In fact, there was essentially no difference between the two groups when they were presented with sentences containing words that exhibited a very high degree of relatedness.

Interestingly, these findings were supported by the study performed by Ezell and Goldstein (1991), which suggested the benefits of highly related words within a sentence

by demonstrating how difficult children with mild intellectual disabilities find sentence comprehension to be with sentences containing little or no relatedness. Specifically, they examined how successful children with mild intellectual disabilities were at comprehending idioms. They relied upon a classic definition of an idiom contained within a study performed by Seidl and McMordie (1978), which said that an idiom was a sentence or expression that contained a number of individual words whose collective meaning was essentially unrelated to the meanings of its individual parts. Therefore, to approach assigning a meaning to an idiom in the traditional way, one risks creating a substantial misrepresentation of what is intended to be conveyed. This finding is quite important in light of the results of a study by Lazzar, Warr-Leeper, Nicholson, and Johnson (1989) that found that on average about 11% of teacher's communications with children in kindergarten through grade 8 contained idioms. In fact, the results indicated that the specific numbers of idioms used by teachers steadily increases with each grade.

In light of previous research concerning the sentence comprehension abilities of students with mild intellectual disabilities, Ezell and Goldstein (1991) reasoned that these children may be especially sensitive to idiomatic expressions. Unfortunately, they found that the overwhelming majority of past studies used typically performing children in their investigations. They did find some studies that used populations of students whose performance varied (e. g., Gibbs, 1987; Nippold & Martin, 1989) so much so that the findings may be potentially significant in relation to children with mild intellectual disabilities. Specifically, these studies found that when supporting context was provided, children had a much easier time accurately identifying the meaning of sentences containing idiomatic expressions. Ezell and Goldstein (1991) felt that because speech

idioms were almost always used within some accompanying context when they occurred in natural text, they should also provide a context for the idioms used in their study. And so, this study examined how the comprehension abilities of children with mild intellectual disabilities compared to those of typical children when asked to assign meanings to idioms.

The results of Ezell and Goldstein's (1991) study were not particularly unexpected, in that they found that children with mild intellectual disabilities exhibited significant differences in their abilities to accurately understand the meanings of idioms when compared to typical children. Interestingly, the fact that a context was provided did not seem to be as great a help to the children with mild intellectual disabilities as one might have expected. Ezell and Goldstein speculated that this might be due to the fact that children with mild intellectual disabilities were unable to hold the entire context in their working memory long enough for them to consider it fully when attempting to assign a meaning to the idiom.

Apart from the degree of relatedness among the words in a sentence, there is yet another aspect of text that often poses difficulties for children with mild intellectual disabilities in terms of sentence comprehension, namely the grammatical complexity of the sentence itself (Berry, 1972). Berry brought this fact to light in a very early study of the effects of grammatical complexity. He chose to compare children with mild intellectual disabilities to children of varying abilities, from children with severe intellectual disabilities to children without disabilities. In order to accomplish this, he took sentences that were generally similar in length, content, and phonemic form, and then varied their grammatical complexity by making some of them present continuous

and some of them possessive. He supposed that the possessive sentences were more grammatically complex, and therefore would pose a greater challenge to comprehend for each group of children.

What Berry (1972) found was that the level of grammatical complexity had an effect on the success of the children in comprehending the sentences presented to them. The possessive sentences were of greater grammatical complexity, and consequently much more difficult for the children to comprehend as compared to the relatively easy present continuous sentences. Interestingly, Berry found this to be true of children with mild intellectual disabilities as well as typical children who were assumed to have generally better comprehension abilities, and children with severe intellectual disabilities whose comprehension abilities were generally assumed to be the most limited. The implications of these findings seem to be that the very form of the text, even at its most basic level (i.e., the sentence), has a significant influence on comprehension.

However, in terms of text, it is not enough to examine the difficulty children with mild intellectual disabilities have in reading comprehension simply in relation to words and sentences. One also has to examine larger text units in order to gain a complete understanding of the reading comprehension difficulties children with mild intellectual disabilities experience, because reading comprehension represents a dynamic and complex process (Bos & Tierney, 1984). Bos and Tierney set out to do just that with a study that focused on the inferential reading abilities of these children. They based their study on the premise that the reader, any reader, must sometimes create novel information to “make sense” of explicit information contained within the text; in effect they must draw a logical inference in order to truly understand what is explicitly written.

For example, Bos and Tierney maintained that in order for any child, and certainly a child with mild intellectual disabilities, to understand the following statement, “it would be unsafe for beavers to live on land with such short legs” they would have to draw the logical inference that beavers would not be able to escape predators easily with short legs, and that they typically don’t live on land in the first place.

Therefore, Bos and Tierney (1984) designed a study to investigate whether children with mild intellectual disabilities generated fewer inferences as compared to more typically performing students, and to what extent, if any, the inferences they do generate differ qualitatively from those generated by children without intellectual disabilities. Their findings suggested that children with mild intellectual disabilities did in fact generate about the same number of inferences from a given text as did children without intellectual disabilities. However, they did find qualitative differences among the two groups. Interestingly, the qualitative differences appeared to be linked to the type of text presented to the readers. When presented with expository text, children with mild mental retardation generated fewer plausible inferences than typically performing students; however, even though they still generated fewer inferences than typical readers, this was less pronounced when narrative text was presented.

Bos and Tierney (1984) offered an intriguing explanation as to why expository text appeared to pose greater challenges for children with mild intellectual disabilities. They pointed out that their results also seemed to indicate that text type exerted an additional influence on the recall abilities of the children with mild intellectual disabilities in that they performed poorer in terms of recall on expository passages than they did on narrative passages. It could be, according to the authors, that these children

were simply generating the best inferences that they could based on the limited recall of the passage's content that they had at their disposal. The seeming implausibility of their responses could very well be due to the incompleteness of the information they were able to access, rather than a fundamental inability to engage in the proper process of deriving a satisfactory response.

Only a few years prior, Luftig and Johnson (1982) completed a related study with children with mild intellectual disabilities focusing on their ability to recall textual information. In their study, they attempted to determine the relative accuracy of children with mild intellectual disabilities in differentiating between important and unimportant information contained within a specified passage of text, with the assumption being that successfully differentiating between important and unimportant information had a significant impact on successful recall. Luftig and Johnson reasoned that since good comprehenders are generally thought of as being sensitive to the "levels of text importance," then perhaps poorer comprehenders (i.e., children with mild intellectual disabilities) would exhibit difficulties in this regard.

The results of Luftig and Johnson's (1982) study suggested that children with mild intellectual disabilities were indeed capable of identifying the relative importance of information contained within a text. And in fact, the information that they deemed to be important appeared to be information that they were more easily able to recall. However, there were plenty of examples of textual information that children with mild intellectual disabilities in the study deemed as important that other observers, and even the author in some cases, judged to be unimportant. Luftig and Johnson believed this to be significant because it appeared that regardless of whether information was intended to be important

or not, once it was identified as such by the reader with mild intellectual disabilities, it was more likely to be recalled.

Wolman and Van den Broek (1997) also conducted a study to investigate the ability of children with mild intellectual disabilities to recall information contained within a given text. They compared the performance of children with mild intellectual disabilities with the performance of both children with learning disabilities and children without disabilities. They chose to examine text recall because many prior studies (i.e., Bos & Tierney, 1984; McConaughy, 1985; Weaver & Dickinson, 1982) had used this as an indicator of overall text comprehension. At the heart of their study, Wolman and Van den Broek sought to determine the extent to which the “causal structure” of a story influenced a child’s ability to comprehend the text; as indicated by their proficiency at recall. In a previous study, Wolman (1991) defined the “causal structure” of a story as the “central path” of the story that leads from the beginning of the story to its conclusion. Additionally, they differentiated between immediate and delayed recall, because they speculated that each would pose unique challenges across the different groups of children in the study. In essence, they developed a study to assess to what extent causal structure has on both the short-term and long-term retention capacity of various groups of children.

Wolman and Van den Broek’s (1997) findings were consistent with past research, such as Wolman’s (1991), in that children with mild intellectual disabilities recalled less textual information than children with learning disabilities and children without disabilities. However, the performance of children with mild intellectual disabilities was similar to that of other children in the study in one respect, primarily in that causal structure seemed to influence their ability to recall. Wolman and Van den Broek found

that information contained within the story's causal chain of events was significantly easier for children with mild intellectual disabilities to recall, as opposed to information that was only peripherally associated with the story's causal chain. In addition to improvements in informational recall, the children with mild intellectual disabilities, along with the other children in the study, demonstrated an increased ability to form connections between information contained within the causal chain, as opposed to information that was not.

Wolman and Van den Broek (1997) acknowledge that they controlled for the decoding demands of the text by ensuring that the readability of the text was well below the instructional level of the children, that is, the level at which the children are about 90% accurate in their decoding. Yet they maintain that this does not detract, in particular, from one important implication associated with their findings. Namely, their findings suggested that children with mild intellectual disabilities are certainly capable of developing and remembering coherent and appropriate representations of a story, albeit to a lesser degree than that of other children.

Intervention Studies in Reading Comprehension

Prior to 1970, there was very little research conducted to investigate the effects of a teacher's instructional activities on the reading comprehension abilities of their students (Dole, Duffy, Roehler, & Pearson, 1991; National Reading Panel, 2000). In fact, it was not until the early 1970s that agencies like the now reconstituted federal Department of Education began to provide substantive funding to researchers, which led to the formation of a credible body of research concerning the effects of a teacher's instructional activities (Brophy & Good, 1986). What emerged was a stream of research

that was generally referred to as process-product research; the “process” embodied the various instructional acts of successful teachers and the “product” embodied the various behaviors of successful students. Process-product research allowed researchers to hone in on the instructional strategies and approaches that truly seemed to benefit students (Dole et al., 1991).

As a result, over the course of the last twenty years reading comprehension instruction has been a major area of focus for reading research (Gersten, Fuchs, Williams, & Baker, 2001; Mastropieri, Scruggs, Bakken, & Whedon, 1996; National Reading Panel, 2000). The premise that drives much of this research is that children can be taught to apply specific strategies, or to think more strategically in general, when they encounter difficulties in comprehending. Consequently, the intervention studies of the past twenty years demonstrate a wide range of focus from teaching very specific strategies that address very specific aspects of comprehension like vocabulary acquisition (words) to providing instruction that addresses much broader aspects of the comprehension process, such as the formation of logical inferences (i.e., text and story) (National Reading Panel, 2000).

Words. Vocabulary instruction (i.e., vocabulary acquisition) is an example of a very specific aspect of reading comprehension for which very specific strategies can be applied to generate an overall improvement in comprehension abilities (National Reading Panel, 2000). Vocabulary instruction is a topic of particular importance to children with mild intellectual disabilities, since many studies have reported that they tend to have difficulty learning new vocabulary (Mervis 1990; Strominger, Winkler, & Cohen, 1984; Yoder & Kaiser 1993). One early study by Scruggs, Mastropieri, and Levin (1985)

applied two separate interventions in a cross-over group design to 20 children with mild intellectual disabilities who were randomly assigned to two separate groups. In this study both groups experienced each intervention in an effort to determine any subsequent effects on vocabulary acquisition. The first method Scruggs et al. examined was the mnemonic technique, which was the primary focus of the study followed by a second method, which was direct instruction.

The mnemonic technique, or keyword method, is a three step approach to vocabulary acquisition. First an unfamiliar vocabulary word, for example, dogbane (Scruggs et al., 1985), is paired with a familiar word of similar sound and structure like dog. Then the keyword, in this case “dog”, is related to the meaning of the unfamiliar word, dogbane, through the use of a picture. Since dogbane is a tropical plant, the picture might involve a dog sitting next to a dogbane plant. Finally, when the child is asked the meaning of the unfamiliar word dogbane, the “dog” in dogbane should trigger the image of the dog with the plant, and hopefully prompt the child to respond “a plant” (Scruggs et al., 1985). The direct instruction method on the other hand involves the fast-paced presentation of information within a highly structured and teacher controlled context. This “direct” and scaffold approach is enhanced by its ability to engage the children in the lesson through frequent responding opportunities and specific correction procedures (Gersten, Woodward, & Darch, 1986).

For their study, Scruggs et al. (1985) selected 20 “unfamiliar” words from previous vocabulary acquisition studies. These words were assumed to be unfamiliar due to their low frequency in grade appropriate texts. First, 2 groups of 10 words each were randomly formed, followed by the assignment of a corresponding method to go along

with each group. Since the design of the study called for each child to be exposed to both groups (i.e., both methods), the sequence that they were presented in was varied in an attempt to control for any potential confounding effects related to the order in which the two approaches were implemented. Finally, all children were given identical recall tests at the conclusion of the presentation of each approach.

The results of the Scruggs et al. (1985) study seemed to indicate that while both methods were successful, the mnemonic method produced the greatest gains in terms of associative information. One implication of their findings would seem to be that the mnemonic method is the more effective method of vocabulary instruction with children with mild intellectual disabilities. However, Scruggs et al. conceded that the way in which mnemonic instruction was implemented in their study did not appear to differ substantially from direct instruction in two key aspects. Specifically, like direct instruction, mnemonic instruction capitalized on highly defined teacher procedures and questioning, along with teaching to well defined objectives. It is not clear to what extent, if any, this may have influenced their results.

In a later study by Losardo and Bricker (1994), direct instruction was once again implemented, along with a more activity-based method, in an effort to improve the acquisition of new vocabulary. In this study a single-subject design was used to evaluate the effectiveness of each intervention on the ability of six young children with developmental delays to acquire and generalize the names of unfamiliar objects. Losardo and Bricker pointed out that direct instruction has already been shown to be an effective method of instruction in a variety of contexts. As such, their study attempted simply to extend these findings to a younger population of children, while at the same time

comparing the effectiveness of direct instruction with an activity-based method. It was assumed that the children, as a function of their age alone, would respond well to the activity-based method because of its child-centered approach which was fluid in its planning and routines (Bricker & Cripe, 1992).

Losardo and Bricker (1994) chose 12 objects that each of the 6 children could not accurately identify but did, however, exhibit some degree of familiarity with its use. First, the 12 words were sorted into two approximately equal groups in terms of their phonemic form and difficulty. A treatment condition, either direct instruction or activity-based, was then randomly assigned to each group. Therefore, all 6 children received instruction on one group of six words using direct instruction, followed by instruction on the other group of six words using the activity-based method. The effectiveness of each approach was evaluated through the use of observational data, and data obtained through probes that measured the number of correct object names given.

Losardo and Bricker (1994) found that direct instruction was more effective than the activity-based approach in terms of the acquisition of object names. However, the activity-based approach seemed to facilitate more generalization of new object names among the children in the study. While Losardo and Bricker highlighted many possible explanations for the differential effects both methods seemed to produce, they maintained that the clear implication of their findings is that direct instruction can be extended to a younger population. In fact, both methods appear to have value as an instructional intervention to improve vocabulary development with young children identified as having developmental delays.

Text. Kim and Lombardino (1991) examined comprehension in more complex terms to determine to what extent the structure and context of language influences the ability of children with mild intellectual disabilities to comprehend. In particular, they examined certain aspects of script contexts, things such as sequential organization and causal relationships. Kim and Lombardino based their notion of a “script”, or a framework for understanding textual information through the ordering of events in a particular spatial and temporal context, on the earlier work of Schank and Abelson (1977). Kim and Lombardino maintained that there is ample evidence in the literature to support the idea that script-based interventions are successful in increasing the acquisition, generalization, and maintenance of information during comprehension tasks. However, according to Kim and Lombardino, there is some question as to the effectiveness of this approach with children with intellectual disabilities. As a result, their study sought to investigate how children with intellectual disabilities would respond to both script-based and non-script based interventions in relation to their ability to comprehend.

Four young female children with intellectual disabilities were selected to participate in this single-subject design study. Specifically, Kim and Lombardino (1991) used an alternating-treatments design to investigate the effects of the script-based intervention, and to compare the results obtained from this intervention with those obtained from a non-script based intervention. However, this type of experimental design only allowed them to examine treatment effects within each subject; therefore, in conjunction with the alternating treatment design, a multiple baseline design was also used to provide the necessary across subject comparison.

In the baseline condition, all four subjects demonstrated the required stability in performance necessary for subsequent comparisons. With the introduction of the script-based intervention, three of the four children exhibited increased comprehension as demonstrated by an increase in acquisition, as well as an increase in accuracy on the probes. In terms of accuracy, the children in the study showed a clearly positive (i.e., accelerating) trend with respect to the number of correct responses given under the script-based conditions (Kim & Lombardino, 1991). Although some improvements were seen under the non-script based conditions, Kim and Lombardino characterized them as “slight and variable” when compared to what was measured during the script-based condition. Nevertheless, the findings of the study appear to indicate that the script-based approach is a better method to improve the comprehension of children with intellectual disabilities.

Another example of the importance of context in relation to the comprehension of textual information by children with mild intellectual disabilities can be found in two studies conducted by Ezell and Goldstein (1991, 1992). In the first study, Ezell and Goldstein (1991) found that children with mild intellectual disabilities did indeed have greater difficulty comprehending idioms than did typically performing children; in the second, subsequent study, Ezell and Goldstein (1992) they found that a supportive context seemed to help children with mild intellectual disabilities to comprehend idioms better. This finding was in agreement with the conclusions reached by earlier researchers (i.e., Cacciari & Levorato, 1989; Nippold & Martin, 1989) that presenting idioms to children within a “context condition” enhanced their comprehension.

Ezell and Goldstein (1992) considered this research to be of particular importance for children with mild intellectual disabilities. Specifically, children with mild intellectual

disabilities were being increasingly integrated into the general education classroom, where Ezell and Goldstein believe idioms are used relatively frequently (i.e., Lazar, Warr-Leeper, Nicholson, & Johnson, 1989), especially in the upper elementary grades. Given the difficulty in accurately assigning meanings to idioms experienced by children with mild intellectual disabilities, Ezell and Goldstein speculated that this may lead to routine failures in comprehension. Therefore, they developed an intervention study to investigate the effectiveness of a direct training program that makes use of context to increase the comprehension abilities of children with mild intellectual disabilities.

Ezell and Goldstein (1992) created a study that included a simple literal approach to deciphering a given idiom where the child simply had to identify the apparent meaning of the idiom. For example, when given the idiom “hit the sack”, the child would have to indicate that it meant for someone to strike a sack. They then contrasted this approach with another approach that provided the children with mild intellectual disabilities with a context that suggested the intended (figurative) meaning of the idiom. In terms of our example, this would mean that the child would have to identify the meaning of the idiom as “going to bed” or some other similar expression for going to sleep. For their study, Ezell and Goldstein selected two elementary aged boys and two elementary aged girls with mild intellectual disabilities to participate in a multiple baseline design across subjects and across sets of idioms.

A total of 20 idioms were used during the course of this intervention, with six of them derived from lists of idioms used during previous studies, and 14 newly selected for this intervention. Each of these idioms had a short narrative with accompanying picture that suggested a very literal interpretation, and each idiom had another narrative with an

accompanying picture that provided a context adequate enough to suggest the true intended meaning of the idiom. Both methods of instruction (literal and context) were presented to the children with two slightly different variations for each word. So in effect, each child was exposed to four (one very literal, one slightly literal, one slightly contextual, one very contextual) presentations per word. This was done to ensure a low rate of correct responding due to chance alone by including these possible foils. Ezell and Goldstein hoped to demonstrate that through direct training and supportive context, children with mild intellectual disabilities can accurately generate appropriate figurative interpretations for idioms as easily as they can generate literal interpretations.

The results of Ezell and Goldstein's (1992) study seem to support the notion that, given a supportive context, children with mild intellectual disabilities can generate appropriate figurative interpretations of idioms. In fact, the results showed that their accuracy rates for figurative interpretations climbed to approximately the same level as their rates for literal comprehension. Additionally, it appeared that the children with mild intellectual disabilities in the study were somewhat able to generalize their comprehension of the recently learned idioms into unfamiliar contexts, which further supports the efficacy of the intervention.

Interestingly, relatively simple intervention studies, even ones that address the comprehension process in more global terms such as through the use of multiple strategies, have demonstrated positive results as well. Such was the case with an intervention study performed by Fowler and Davis (1985) that demonstrated the efficacy of the Story Frame Approach to improve the general comprehension abilities of children with mild intellectual disabilities. In their study, the authors pointed out that as far back

as the early work on cognition performed by F.C. Bartlett (1932); there has been consistent mention in the literature of the notion that the child's comprehension ability may be predicated upon his or her ability to organize information within their own experiential framework. Consequently, Fowler and Davis believe that imbedded within any comprehension intervention there should be a mechanism to enhance the impoverished experiential frameworks associated with many children with mild intellectual disabilities.

Story. In the Story Frame Approach used by Fowler and Davis (1985), the teacher does not devote his or her energy to facilitating the usual question-and-answer exchanges often incorporated into typical lessons. Instead, the teacher concentrates on providing the children with "frames," or templates, which function as guides that help the children correctly link information found in a story. Fowler and Davis investigated the effectiveness of this approach by utilizing a relatively straightforward single subject design study involving two elementary aged children with mild intellectual disabilities.

Over the course of five days, each child in the study was asked to read the same collection of five stories and respond to a set of five general comprehension questions regarding each story. Fowler and Davis (1985) used this data to establish a baseline for both children. Subsequently, both children were taught how to utilize the Story Frame Approach to assist them in answering the five general comprehension questions. When the children's responses were compared with their earlier baseline performance, both showed clear improvement in their ability to respond correctly to the five comprehension questions. This improvement persisted even when unfamiliar text was presented to them, suggesting that they were successful in generalizing this approach.

The Story Frame Approach is of course an example of cognitive mapping. Darch and Eaves (1986) defined cognitive mapping in general terms as the use of spatial arrangements to illustrate a story's content and structure. In essence, one provides the reader with a framework that easily allows implicit information and relationships to be viewed in an explicit way. According to Kavale, Forness, and Bender (1987) these types of frameworks serve to impose order and sequence on implicit information, often bringing to the forefront the most important elements of the information presented to the reader. Therefore, it is not surprising that the value of cognitive maps in relation to improving the reading comprehension of students with mild disabilities, as well as typical students, is well established through the positive findings of numerous studies (Boyle, 1996; Darch & Carnine, 1986; Darch & Eaves, 1986; Oja, 1996; Welch, 1992). However, Joseph Boyle (1996) pointed out that much of this previous research did not investigate to what extent children with mild disabilities could generate these cognitive maps independently. Boyle (1996) sought to investigate this aspect of cognitive maps further considering the findings of Darch, Carnine, and Kameenui (1986) which support the notion that a student's comprehension of important information and concepts would likely be improved if the student were the one generating the cognitive map.

Boyle (1996) set out to teach students with mild disabilities, many of whom were identified with mild intellectual disabilities, to construct their own cognitive maps as they read short passages. His sample contained 20 students with learning disabilities and 10 with mild intellectual disabilities, all of whom were given a pre-measure of reading comprehension performance upon which, through a pairwise matching procedure, 15 pairs of students were obtained. As a result, both members of the pair were nearly

identical in terms of classification and pretest score. Boyle was then able to form both a control and experimental group, through random assignment, that were statistically equivalent in terms of their pretest performance.

For his dependent measures Boyle (1996) selected two commercially available assessments along with locally produced curriculum based reading questions. These measures were used to assess the student's comprehension of different reading passages, each about 400 words long and covering a variety of topics. For the independent variable an instructional strategy called TRAVEL (a mnemonic meaning: Topic, Read, Ask, Verify, Examine, and Link) was implemented over the course of 11 sessions during which the researcher described and modeled the strategy.

The results of Boyle's (1996) study showed that once students with mild disabilities, even mild intellectual disabilities, were taught how to implement more strategic approaches, they were capable of independently selecting important ideas and subsequently constructing appropriate cognitive maps. Furthermore, the results of Boyle's study indicated that the students who were taught the intervention were able to increase both their literal and inferential comprehension of the passages presented to them. Not only did Boyle's findings support and extend previous research on cognitive maps, it also supported the previous findings of studies like Bigler's (1984) that demonstrated the positive effects of implementing direct teaching strategies to improve inferential comprehension.

Numerous studies (Adams, Carnine, & Gersten 1982; Patching, Kameenui, Carnine, Gersten, & Calvin, 1983; Singer & Donlan, 1982) performed immediately prior to Bigler's (1984) have successfully demonstrated the effectiveness of applying direct

instruction methodology to the teaching of comprehension skills. Believing that this prior research supported the notion of applying these techniques to students with mild intellectual disabilities, Bigler designed a study to investigate the efficacy of two direct instruction techniques on inferential comprehension. The first instructional technique involved a procedure the author characterized as “looking for clues”, a manifestation of which would be the underlining of key details, for example, as a way to increase the student’s ability to draw conclusions and predict outcomes. The second instructional technique, a “think out loud” procedure, involved modeling and practice as a way to once again increase the student’s ability to draw conclusions and predict outcomes.

Bigler (1984) selected eight students with mild intellectual disabilities as subjects for her study. A cross-over experimental design was used with each subject receiving both experimental conditions (i.e., looking for clues, think out loud). The order in which the subjects were presented with these two independent variables was varied to reduce the impact of any possible sequencing effects associated with this implementation. The dependent measure for this intervention was an inference rating scale that evaluated responses based on their non-contradictory nature, factualness, and specificity. Due to the fact that the responses of students with mild intellectual disabilities tended to vary markedly in quality, Bigler found it problematic to classify these responses to inferential question as “correct” or “incorrect”. She therefore chose to use a rating scale as the method by which these responses would be evaluated.

After establishing a baseline, each student began with either Condition A, which involved the “looking for clues” technique, or Condition B, which involved the “think out loud” technique. Under Condition A the students were explicitly taught strategies for

identifying “clues”, or important details, coupled with corrective feedback and verbal reinforcement. While under Condition B, the teacher verbally modeled explicit strategies and the student practiced, coupled once again with corrective feedback and verbal reinforcement. After exposure to either condition, the students were asked inferential questions requiring them to draw conclusions and make predictions. The responses to these questions were later evaluated using the rating scale (Bigler, 1984).

Bigler (1984) found that the performance of all eight subjects increased from their earlier baseline performance in inferential comprehension skills, drawing conclusions and making predictions. Interestingly, there appeared to be no significant difference in the effectiveness of either direct instruction technique in terms of its influence on the comprehension abilities of students with mild intellectual disabilities. Although there was some variability in the magnitude of the improvement of each subject on the dependent measure, each technique, nevertheless, produced positive gains. This improvement seemed to be maintained even in the absence of further instruction, as demonstrated by the students’ performance over the short follow-up phase included in the study.

Main Idea Studies in Reading Comprehension

Students with mild disabilities often demonstrate deficits in many aspects of the comprehension process; this is particularly true for their abilities to identify the main ideas of text (Jitendra, Hoppes, & Xin, 2000). Identifying the main idea of text has often been viewed as laying at the very heart of the comprehension process, and therefore absolutely crucial to a student’s ability to study effectively and to read critically (Williams, 1988). Interestingly, despite the importance of main idea identification within the larger context of successful comprehension, less research has focused on it

specifically than on more general reading strategy instruction. Fortunately, there is increasing research to support the notion that explicit teacher directed instruction can foster improvement in main idea comprehension (Jitendra, Chard, Hoppes, Renouf, & Gardill, 2001). The intervention studies that will be discussed in this section all center around strategy instruction designed to enhance the comprehension of main ideas; however, they do not all focus on students with mild intellectual disabilities. The commonality among them is that they focus on students with mild disabilities, a group etiologically similar to students with mild intellectual disabilities.

In one such study, Chan (1991) selected the identification of main ideas as her focus because it is crucial to successful comprehension, and in a larger sense, learning from text in general. Chan chose to utilize an intervention that would provide instruction on how to apply sound self-questioning strategies, which have been used extensively in a variety of instructional contexts, in an effort to facilitate the identification of main ideas. In addition, she sought to investigate whether an added component designed to foster generalization would also be beneficial.

Chan (1991) selected a total of 60 elementary aged students, with a demonstrated reading disability, to participate in a repeated measures design that featured assessment conducted within subjects. The subjects were randomly assigned to either a standard instructional condition or a generalization instructional condition. Both groups received the independent variable which was instruction on how and when to apply a uniform set of 15 self-questions designed to bolster their ability to negotiate the process of main idea identification. Specifically, Chan maintained that to successfully negotiate such a process the student has to be able to discount irrelevant and redundant information, and recognize

explicit and implicit information. Therefore, these sessions, which would typically last 40 minutes and occur once a day, sequentially focused on one facet of the process of main idea identification at a time, like how to identify and ignore irrelevant information. The real difference between the two groups was that those subjects in the generalization instructional condition received additional instruction on a multi-stage procedure to better promote generalization of a self-questioning strategy. This multi-stage procedure was predicated upon the teacher providing modeling and overt guidance, at least in the initial stages of the intervention.

Chan (1991) used three assessments during the course of her study, one pretest and two posttests. The dependent variable in this study was the subjects' performance on a main idea identification test. Each posttest consisted of four related paragraphs and five multiple choice items developed to measure the subject's ability to correctly identify the main ideas of each paragraph and the passage as a whole. The subjects' performance on the posttests indicated that both conditions produced an increase in the ability of students with reading disabilities to accurately identify main ideas. As expected, in the absence of any prompts, the subjects in the generalization condition performed better than those in the standard condition due to their exposure to the additional component designed to enhance generalization. Chan contends that one of the implications of her findings is that students with mild disabilities do indeed benefit from explicit strategy instruction.

In a study similar in purpose to Chan's (1991), Jitendra, Hoppes, and Xin (2000) implemented a group design study to investigate the role self-monitoring plays in effective main idea identification. In another reference to Chan's study, the current study sought to determine the extent to which the strategy presented in the intervention was

generalized. Jitendra et al. selected 33 subjects from upper elementary age to middle school age, all of whom exhibited mild disabilities, to participate in their study. With consideration given to grade level, these students were randomly assigned to either a control or an experimental group. As expected, membership in the experimental group entailed exposure to the independent variable, while the subjects in the control group received an equal amount of exposure to a traditional reading program.

The independent variable was an instructional sequence that incorporated a blend of main idea identification strategies with self-monitoring strategies. The main idea identification strategies were modeled by the teacher, and followed by guided and independent practice. The self-monitoring aspect of the intervention was utilized during the practice phases of the main idea identification strategy training; specifically, a four step self-monitoring procedure was utilized by the subjects during this time. It involved the subjects checking off a series of steps listed on a prompt card that they referenced as they read passages and worked on identifying the main ideas (Jitendra et al., 2000).

Jitendra et al. (2000) utilized the same pretest, posttest, and delayed posttest for each group, with the subjects' performance on the post measures serving as the dependent variable of the intervention. The results of the intervention demonstrated that when instruction on main idea identification was blended with self-monitoring instruction, students with mild disabilities performed better than similar students who received more traditional instruction. In fact, their findings also showed that these improvements persisted, and resulted in better performance for the subjects in the experimental group on the delayed measure when compared to that of the subjects in the control group. Jitendra, et al. suggest that their findings support the notion of the beneficial role self-monitoring

strategies play within the overall context of improving main idea identification in students with mild disabilities, in addition, their findings extend the earlier findings of Jitendra, Cole, Hoppes, and Wilson (1998).

In an earlier study, Jitendra, Cole, Hoppes, and Wilson (1998) used a single subject design, with multiple probes across students, to investigate the effects of direct instruction procedures. The procedure used in this study was also designed to increase the identification of main ideas and included a self-monitoring technique to encourage generalization. They selected four upper elementary age children to participate in the study, with one of the four serving as a control and therefore not exposed to the independent variable. All four of the students were identified as having mild learning difficulties.

Jitendra et al. (1998) maintained that while research in general tends to suggest that direct instruction procedures are effective in addressing many areas of reading instruction with students with mild disabilities, because of the very nature of such disabilities, interventions that capitalize on these kinds of approaches may require the inclusion of instruction on how to actively monitor strategy usage. They reference a study performed by Malone and Mastropieri (1992) that demonstrated that by the inclusion of a self-monitoring component, even a relatively short intervention dealing with main idea summarization could be made more effective. Thus, Jitendra et al. (2000) took direct instruction procedures based on the earlier work of Carnine, Silbert, and Kameenui (1990), which were designed to enhance main idea summarization and identification, and combined them with a similar procedure for self-monitoring like the one developed in the study conducted by Malone and Mastropieri.

The independent variable in Jitendra, Cole, Hoppes, and Wilson's (1998) study was a direct instruction program that consisted of seven carefully sequenced lessons. The subjects under the experimental condition were taught in a teacher-directed fashion the seven lessons over the course of three months, with each instructional session lasting between 40 and 50 minutes. This was coupled with only two days of self-monitoring training, which was similar to the time allocated for this kind of training in the Malone and Mastropieri (1992) study. Interestingly, the authors reported that two days were all that was required for the subjects to reach the performance criterion prescribed in the study.

Multiple probes were used throughout the course of the intervention, with each probe consisting of a small passage of text accompanied by both multiple choice and production items. The results of the dependent measures indicated that the direct instruction procedure used to teach the main idea strategy resulted in greater performance for the subjects exposed to the independent variable than that demonstrated by the control subject. An additional finding of the study was that while the self-monitoring component did produce positive results, those results tended to fade relatively quickly. Their study would suggest that this may have been due to the short application of the technique, and that in order to keep realizing a benefit from incorporating the self-monitoring techniques; they must be periodically reinforced throughout the course of the intervention (Jitendra, Cole, Hoppes, & Wilson, 1998).

Discussion

The preceding literature review was divided into three sections. The first section examined descriptive studies, while the second section focused on intervention studies. The final section investigated studies specifically addressing the abilities of students with mild intellectual disabilities to identify main ideas.

The descriptive studies contained within this literature review began by examining factors associated with the reader. Factors like the level of prior knowledge, the ability to monitor comprehension, and the ability to select and use appropriate comprehension strategies were all shown to have a significant effect on the performance of students with mild intellectual disabilities. Even factors associated with the text itself like the orthographic structure, the complexity of sentences, and the complexity of the passages were shown to have a significant influence on the comprehension abilities of students with mild intellectual disabilities. In general terms, these studies suggested that students with mild intellectual disabilities do not comprehend what they read as well as typical readers without disabilities, and in fact, in some aspects, they do not comprehend as well as students with other mild disabilities like specific learning disabilities.

The intervention studies contained within this literature review exhibited a wide range of focus. However, whether the area of focus was comprehending individual words or entire stories, these studies suggested that students with mild intellectual disabilities can be taught to apply appropriate strategies, and can be taught to think more strategically. These studies have also shown that every instructional intervention is not equally effective. Many factors such as the explicitness of the approach, the age of the student, and the duration of the intervention appear to influence the overall benefit that

students with mild intellectual disabilities receive from instructional interventions. Nevertheless, the results of these intervention studies support the general proposition that there are effective instructional techniques that can be applied to students with mild intellectual disabilities.

The final section of this literature review involved studies relating to the identification of main ideas. These studies concentrated on providing an explicit presentation of a main idea identification strategy that also incorporated a self-monitoring component. What the results of these studies suggested is that not only is it important that students with mild intellectual disabilities have a strategy to use, but also that those students are aware of how successful they are in applying it.

While there are volumes of studies that show what students with mild intellectual disabilities cannot do, fortunately there are also some studies that show what they can do. Their ability to comprehend what they read appears to be linked, at least to some extent, on how they are taught to approach the comprehension process. Far from being innately incapable, their performance may depend more on the quality and effectiveness of the instructional strategies that we teach to them.

In the past, these instructional strategies were often applied in homogeneous instructional groupings, and often times in a resource setting. However, the practice of ability-grouping students into homogeneous instructional groups has prompted considerable debate. Research has indicated a multitude of negative consequences resulting from this practice; such as the delivery of inferior instruction, increased stigmatization, and negative effects on the student's self-esteem (Goodlad, 1984; Peterson, 1989; Poole, 2008; Reutzler & Cooter, 1991). In fact, the effects of this practice

were judged to be so detrimental that many school districts have now abandoned them, and have moved to heterogeneous instructional groupings. Such is the case with the service delivery models used by many districts with their students with disabilities. As a result, the students with mild intellectual disabilities often receive their reading instruction in these mixed-ability groupings with other students with disabilities who may function higher in reading, like students with specific learning disabilities (Chorzempa & Graham, 2006; Poole, 2008; Vaughn, Hughes, Moody, & Elbaum, 2001).

III. METHOD

This study examined the effects of two different instructional approaches to improving main idea identification in upper elementary and middle school students with mild intellectual disabilities / specific learning disabilities in two low-income rural schools. The two instructional approaches that were examined in this study were an explicit instructional approach and a basal instructional approach. This chapter addresses the following: research methods and design, sample selection, procedures for data collection, a description of the independent variable, and a description of dependent variables / measures. In addition, this chapter details the research questions, and the corresponding null hypotheses, as well as the statistical analysis performed in this study.

Research Methodology and Design

This study utilized a quasi-experimental group design without a traditional control group to investigate the efficacy of two different approaches (basal and explicit) to improving main idea identification in students with mild intellectual disabilities / specific learning disabilities. An ideal experimental design with randomization and the use of a control group can be difficult to achieve in a school setting with children who have higher need disabilities that constitute a relatively small percentage of the total school population (Anda, 2007). There are also ethical and potential legal issues

associated with withholding treatment from children with disabilities, given that they are mandated to receive specially designed instruction to meet their needs. Therefore, this study was designed in such a way as to provide some form of treatment to all participants. It featured experimental manipulation of the independent variable (i.e., either a basal or an explicit approach) along with random assignment of participants to both of the experimental conditions. As a result, the group that receives the basal experimental condition served as a contrast group as opposed to a non-treatment control group.

Sample Selection

A sample of 38 students with mild intellectual disabilities / specific learning disabilities, as defined by the identification criteria articulated in the Alabama Administrative Code Supp. No. 07-2 Ch. 290-8-9, was selected for participation in this study. The population from which the participants of this study were selected was upper elementary students (grades 3, 4, and 5) and middle school students (grades 6, 7, and 8) enrolled in a school district in rural Southeast Alabama. For the purposes of this study, mild intellectual disabilities was defined as having a full scale IQ, as measured by the Wechsler Intelligence Scale for Children (WISC III) or comparable intelligence measure, of between 60 and 70. Additionally, the definition of mild intellectual disabilities included the presence of deficits in adaptive behavior as demonstrated by clinically significant scores on adaptive behavior assessments. Specific learning disabilities was defined as having a significant discrepancy between full scale IQ, as measured by the WISC III or comparable intelligence measure, and a composite score on an individual test of achievement. For the purposes of this study a significant discrepancy was defined as at

least 16 points, or at least one standard deviation as determined by the test publisher. The sample was composed of students with mild intellectual disabilities / specific learning disabilities from at least the upper elementary grades, as opposed to the primary grades (grades K, 1, and 2), to ensure that an adequate degree of decoding skills have had an opportunity to develop.

The appropriate school and district administrators, as well as the participating classroom teachers were asked to give their permission and consent for participating in and implementing this study. The parents / guardians of the participants were sent letters detailing the study, or were contacted by telephone using an approved script detailing the study, and were asked for consent to allow their children to participate. In addition, permission from Auburn University's Institutional Review Board was obtained prior to the implementation of this study. A copy of the letter used can be found in Appendix A.

Of the students identified as possible participants, consent was obtained through letters, and/or phone contacts utilizing approved scripts, from 40 participants. Each potential participant for whom permission was obtained was given two screening instruments by the experimental teachers to (1) determine suitability for inclusion in the study, (2) establish a level of baseline performance, and (3) verify group equitability. The first screening instrument was the Dynamic Indicators of Basic Early Literacy (DIBELS) that determined functional decoding ability as measured by fluency rate on a one minute reading of unfamiliar text at the participants' functional level. The second screening instrument was the Kaufman Test of Education Achievement II Form A (KTEA-II), which also served as a pretest measure for this study.

The Dynamic Indicators of Basic Early Literacy (DIBELS) was chosen as a screening instrument for this study because fluency rate is an effective indicator of functional decoding ability. The participants in this study must have had at least a functional level of decoding present in order to read text complex enough to contain main idea statements (Kamps & Greenwood, 2005). DIBELS is a well established measure with demonstrated validity and reliability that yields three performance bands across multiple grade levels: benchmark, strategic, and intensive (Good & Kaminski, 1996; Good, Simmons, & Smith, 1998).

Each participant needed to achieve the strategic level of performance on a grade level screener commensurate with their functional reading level. Based on a review of each potential participants' reading records conducted with the special education staff at the participants' respective schools, the appropriate grade level text for the screener used in grades 3–5 was DIBELS Grade 1 Oral Reading Fluency (ORF) Benchmark #1, 6th edition. The DIBELS Grade 3 ORF Benchmark #1, 6th edition was determined to be the appropriate level text for participants in grades 6–8. All participants obtained a score on this screening instrument at least commensurate with the strategic level of performance as defined by the DIBELS assessment; therefore none were excluded based on these results.

The second screening instrument, the KTEA-II Form A, was selected due to its ease of administration and appropriateness as a standardized instrument for use with individuals from age 5 to 18. It is a norm-referenced instrument that has demonstrated adequate alternate form reliability across age and grade levels, with a comprehensive achievement reliability range from .92 to .95. The KTEA-II's reading comprehension reliability coefficients across all ages and grades ranged from .76 to .88. The KTEA-II

yields standard scores, with a mean of 100 and a standard deviation of 15 (Cohen, Cohen, West, & Aiken, 2003).

The use of the KTEA-II Form A in this study as a screener / pretest was to establish the participants' baseline level of performance in reading comprehension, and to verify that the participants were indeed experiencing difficulties in reading comprehension at the time of the study's implementation. Although all participants had previously demonstrated difficulties with reading comprehension at the time of their identification under the eligibility requirements articulated in the Alabama Administrative Code, it was not clear that each participant continued to demonstrate difficulty with reading comprehension (i.e., main idea identification). This was particularly true of the participants who had previously met the identification criteria for the presence of a specific learning disability (i.e., the presence of a severe discrepancy between predicted achievement and obtained achievement). Therefore, as a result of this screening, one participant was excluded from participation in the study because her scores no longer indicated difficulties in reading comprehension.

Furthermore, one participant was subsequently removed from the study due to disciplinary issues that resulted in his placement in the district's alternative school. No participants were removed due to excessive absence, defined as missing more than three treatment sessions over the course of the study.

Random assignment to both of the experimental conditions (basal and explicit) was used to ensure that characteristics such as ethnicity, gender, and disability category did not result in group membership being a confounding factor. The upper elementary and middle school students with mild intellectual disabilities / specific learning

disabilities who participated in this study were selected from Reading / Language Arts classes ranging in size from approximately 20–30 students. The participants selected from each class were randomly assigned to one of the two treatment groups. Assignment of participants was accomplished through a randomized process whereby names were manually drawn by the researcher from a collection containing the names of each participant. Once drawn, the names of the participants were alternately placed into one of the two treatment groups. A description of the sample is presented in the following table.

Table 1

Sample Demographics

Basal Approach (N = 18)		Explicit Approach (N = 20)	
Characteristics	N	Characteristics	N
Gender		Gender	
Male	14	Male	14
Female	4	Female	6
Exceptionality		Exceptionality	
SLD	13	SLD	14
MR	5	MR	6
Ethnicity		Ethnicity	
African American	14	African American	15
Caucasian	4	Caucasian	5

(table continues)

Table 1 (continued)

Basal Approach (N = 18)		Explicit Approach (N = 20)	
Characteristics	N	Characteristics	N
Grade		Grade	
7th	2	7th	0
6th	1	6th	3
5th	5	5th	5
4th	8	4th	7
3rd	2	3rd	5

Setting

The schools that participated in this study were located in a rural area of Southeast Alabama. The district was located 90 miles southeast of the state capital and has an estimated population of 14,500 residents according to U.S. Census 2009 population projections. During the 2008–2009 school year the elementary school selected to participate in this study served approximately 620 students in grades 3–5, and the middle school selected served approximately 580 students in grades 6–8. According to data published by the Alabama State Department of Education for the 2008–2009 school year, the schools that participated in this study had approximately 55% of their students reported as African American. A larger percentage of students, approximately 65%, in this district received free or reduced meals.

Methods and Procedures

Teacher Training

Fully certified special education teachers, with experience teaching students with mild intellectual disabilities / specific learning disabilities served as the experimental teachers in this study. Consequently, the use of multiple experimental teachers helped the internal validity of the study. A balanced assignment of treatment conditions across experimental teachers, with each experimental teacher implementing both treatment conditions (basal and explicit), helped control for the effects of varying levels of professional training and experience. This also helped to control for any possible teacher bias.

In an effort to increase the fidelity of treatment for both instructional groups, each experimental teacher participated in two four-hour training sessions prior to the implementation of the study, with one session focusing on the explicit treatment condition and the other session focusing on the basal treatment condition. Each experimental teacher received training on delivering instruction using both of the assigned treatment conditions. Additionally, each experimental teacher had an opportunity to practice both delivery methods during these training sessions. The researcher provided coaching and corrective feedback during the experimental teachers' practice demonstration lessons. The first training session focused upon the importance of key components of the explicit approach such as providing direct instruction and ensuring adherence to the lesson format. The second training session was tailored towards implementing the key components of the basal approach by focusing on one adopted reading series, McGraw-Hill Reading (2001), currently utilized in general education

classrooms. Finally, both training sessions covered classroom management and the importance of the experimental teacher maintaining a positive, consistent learning environment during the implementation of the treatment conditions.

All of the experimental teachers were Caucasian females who held masters degrees in special education. The teaching experience of the experimental teachers ranged from 9–22 years in public education. In the following table, a brief description of the experimental teachers is presented.

Table 2

Experimental Teacher Characteristics

	Gender	Ethnicity	Certification	Experience
Experimental Teacher 1	Female	Caucasian	Mild Learning Disabilities K-12	9 Years
Experimental Teacher 2	Female	Caucasian	Specific Learning Disabilities K-12	14 Years
Experimental Teacher 3	Female	Caucasian	Specific Learning Disabilities K-12	18 Years
Experimental Teacher 4	Female	Caucasian	Intellectual disabilities K-12	22 Years

Materials

The instructional materials used by the participants and experimental teachers in both treatment groups were adapted from a current basal reading program employed in the district (McGraw-Hill Reading, 2001) and were provided to them by the researcher. Using basal materials in both treatment conditions required that the selected text be matched to the functional reading level of the participants in the respective groups.

Therefore, the reading materials used in this study were controlled for readability, meaning that the text was specifically selected to lessen the decoding demands placed on the reader since decoding was not the focus of this study. This selection was based on the results of the first screening instrument, DIBELS, as well as the results of the second screening / pretest instrument, the KTEA-II Form A. As such, it was determined that the appropriate basal material for the participants in grades 3-5 would be drawn from second grade instructional material, while the grade 6-8 participants would utilize third grade instructional material. As a result, one set of 12 stories (one per treatment day) was selected for use at the participating elementary school, while another set of 12 stories (one per treatment day) was selected for use at the participating middle school.

The instructional material used by the experimental teachers was either the exact published basal materials taken from McGraw-Hill Reading (2001), or an instructionally modified version of the published basal materials. The instructional modifications were performed by the researcher based upon the explicit instructional formats found in the Voyager Passport (2004) intervention program, which is also a program utilized by the participating school district. When the experimental teachers were implementing the basal approach, they provided instruction exactly as directed by the published program without modification. The instructionally modified materials were used by the experimental teachers when implementing the explicit approach in order to enable the inclusion of rule-based statements and multi-step procedures. These modifications were implemented by the experimental teachers through the use of a scripted presentation format. Although the stories utilized across both treatment conditions were the same depending on the grade levels of the participants, the format of the student instructional

materials was modified with the explicit condition, to allow for things such as the removal of any pictures that accompanied the text. This was done to control for any possible confounding effects associated with picture clues. See Appendix B for an example of both of the lesson formats, including the modified explicit lesson plan format.

Treatment Setting

All participants in this study continued to be taught with their core reading programs in their scheduled Reading or Language Arts classes at their assigned schools. In addition to their usual whole group reading instruction, the treatment conditions in this study were applied during small group reading sessions in the experimental teachers' resource rooms. The application of the treatment, basal or explicit, lasted for 25–30 minutes per session, with one session conducted per day, four days a week for a period of three weeks (i.e., 12 treatment sessions). Each treatment group utilized the same selection of instructional stories to control for any confounding effects associated with story content. As previously mentioned, the three basal groups and the three explicit groups (six groups total) at the elementary school used the same set of 12 stories, while the one basal and one explicit group at the middle school used the other set of twelve stories. Therefore, the differentiation of treatment was in the instructional design, and not in the selection of materials or the selection of the treatment setting. This study was conducted during the normal school day and by the respective faculties of the participants' schools, thus allowing these students to have full access to the curriculum and resources of their school during the intervention phase of the study.

Timeline for the Study

Before the application of the independent variable (instructional approach), the experimental teachers completed their training and the participants were screened and randomly assigned to groups. Two weeks prior to the start of the intervention phase of the study, experimental teacher training was conducted and completed over a two day period. One week prior to the start of the intervention phase of the study, the participants were given the first screener (DIBELS) and the second screener / pretest (the KTEA-II Form A) by the experimental teachers. The random assignment of participants was conducted by the researcher along with checks of group equivalency. These checks of group equivalency involved the researcher performing independent-samples *t*-tests on the study's three screening variables: (a) obtained IQ score, (b) reading comprehension standard scores, and (c) oral reading fluency rates.

The first week of the intervention phase (i.e., the application of the independent variable) of the study involved the following activities: Tuesday (treatment session 1) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a behavioral observation on an explicit group, and completed inter-rater reliability on explicit retells. Wednesday (treatment session 2) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a fidelity observation of an explicit group, and independent observer reliability was conducted. Thursday (treatment session 3) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a behavioral observation on a basal group, and completed inter-rater reliability on basal retells. Friday (treatment session 4) implemented

both basal and explicit lessons, collected story retells from the students after the completion of the lessons, unit tests were administered, and conducted a fidelity observation of a basal group.

The second week of the intervention phase of the study involved the following activities: Monday (treatment session 5) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a behavioral observation on a basal group, and completed inter-rater reliability on basal retells. Tuesday (treatment session 6) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a fidelity observation of a basal group, and independent observer reliability was conducted. Wednesday (treatment session 7) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a behavioral observation on an explicit group, and completed inter-rater reliability on explicit retells. Thursday (treatment session 8) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, unit tests were administered, conducted a fidelity observation of an explicit group, and independent observer reliability was conducted.

The third week of the intervention phase of the study involved the following activities: Monday (treatment session 9) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, and conducted a fidelity observation of an explicit group. Tuesday (treatment session 10) implemented both basal and explicit lessons, collected story retells from the students after the lessons, conducted a behavioral observation on an explicit group, and completed

inter-rater reliability on explicit retells. Wednesday (treatment session 11) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, conducted a fidelity observation of a basal group, and independent observer reliability was conducted. Thursday (treatment session 12) implemented both basal and explicit lessons, collected story retells from the students after the completion of the lessons, unit tests were administered, conducted a behavioral observation on a basal group, and completed inter-rater reliability on basal retells. Friday (first post-treatment day), student satisfaction survey administered to both groups, and KTEA II Form B posttest administered to both groups.

During Monday of the first week after the intervention phase of the study, posttests for the participants were completed. No other activities were conducted for the week. During the second week after the intervention phase, the maintenance measure was administered. Table 3 illustrates the major activities and timeline associated with the implementation of this study.

Table 3

Timeline of the Study

		Days	Implementation Activities	
Week One	Pre-intervention	Monday	Teacher Training	
		Tuesday		
		Wednesday	Teacher Training	
		Thursday		
		Friday		
Week Two	Pre-intervention	Monday	Screener & Pretest	
		Tuesday	Screener & Pretest	
		Wednesday		
		Thursday	Randomization & Equivalency	
		Friday	Checks	
Week Three	Intervention	Monday	Treatment Session 1 (Retell)	Basal & Explicit: Behavioral Observations (IRR on Retells), Fidelity Observations (IOR)
		Tuesday	Treatment Session 2 (Retell)	
		Wednesday	Treatment Session 3 (Retell)	
		Thursday	Treatment Session 4 (Retell,	
		Friday	Unit Test)	
Week Four	Intervention	Monday	Treatment Session 5 (Retell)	Basal & Explicit: Behavioral Observations (IRR on Retells), Fidelity Observations (IOR)
		Tuesday	Treatment Session 6 (Retell)	
		Wednesday	Treatment Session 7 (Retell)	
		Thursday	Treatment Session 8 (Retell,	
		Friday	Unit Test)	
Week Five	Intervention	Monday	Treatment Session 5 (Retell)	Basal & Explicit: Behavioral Observations (IRR on Retells), Fidelity Observations (IOR)
		Tuesday	Treatment Session 6 (Retell)	
		Wednesday	Treatment Session 7 (Retell)	
		Thursday	Treatment Session 8 (Retell,	
		Friday	Unit Test) Student Survey & Posttest	
Week Six	Post-intervention	Monday	Posttest	
		Tuesday		
		Wednesday	No Activity	
		Thursday		
		Friday		
Week Seven	Post-intervention	Monday		
		Tuesday		
		Wednesday		
		Thursday		
		Friday	Maintenance Test	

Control for Possible Extraneous Variables

Six key variables were held constant over the two treatment conditions in an effort to eliminate, or limit, any confounding influence these variables might have had on the independent variable (instructional approach). These six variables were grouped into two classifications: three that pertained to the instructional environment and three that were linked to the experimental teachers.

The first of the three variables pertaining to the instructional environment was the length of time each treatment session lasted. The application of both treatment conditions was designed to take approximately 25–30 minutes per treatment session. Through the implementation of systematic fidelity observations, the researcher was able to ensure that both treatment conditions received consistent and equitable instructional time. The second variable was the application of the independent variable in a small group setting. Both treatment conditions were able to utilize similar participant groupings for the basal and explicit lessons. The third variable pertaining to the instructional environment was scheduling. Both treatment conditions were scheduled to be implemented during the participants' normal reading period. Therefore, the issue of any order effects associated with the groupings of participants was lessened given that the participants were able to carry on with their typical reading schedules, thus affording no advantage to membership in either group.

The first of the three variables linked to the experimental teachers was the amount of training provided to the teachers on each of the two treatment conditions. Each experimental teacher was provided with identical training in terms of content coverage and duration. Practice opportunities were also equally distributed among the experimental

teachers. The second variable linked to the experimental teachers was the assignment of treatment conditions. In this study each experimental teacher implemented both treatment conditions, therefore differences among experimental teachers in terms of instructional efficacy were controlled for through this arrangement. Finally, the researcher instituted a systematic observation schedule designed to evaluate any differences in the fidelity of implementation between the basal and explicit conditions.

Independent Variable

In this study the independent variable was the type of instructional approach utilized by the experimental teachers. Each experimental teacher implemented both an explicit lesson format and a basal lesson format on the same story. The explicit instructional approach modified the presentation of the basal reading material, and utilized a lesson format that reflected many of the key principles of the direct instruction approach to teaching. Specifically, this approach was characterized by scripting to control for confusing teacher language, instructional scaffolds, and immediate corrective feedback. This approach reflects a teacher directed method of delivering content. By contrast the basal approach was student directed. The basal approach was characterized by an unmodified presentation of the basal text, with a more activity-oriented lesson and self-study on the part of the student.

Conceptual Framework for the Explicit Approach

The explicit instructional approach is based upon a belief in the effectiveness of systematic, clear, and unambiguous teaching. It is a teacher directed approach that leaves little learning to chance (Arrasmith, 2003). The explicit approach seeks to organize the

requisite skills into purposeful, well organized, and hierarchical instructional sequences. The result of this approach is that students typically benefit from more instructional interactions with their teacher and spend a greater amount of classroom time engaged in the instructional task at hand (Torgesen, 1996). As such, its use has been demonstrated to be effective across many content areas and with students identified as having various disabilities (Vaughn & Linan-Thompson, 2003).

One content area that the explicit instructional approach has been demonstrated to be effective is in the area of reading, in particular reading comprehension. Explicit instruction is most effective in developing reading comprehension when the lesson includes certain key elements: (a) rule-statements, (b) a set strategy for solving problems, (c) multi-step procedures for applying this strategy, (d) frequent opportunities for both guided and independent practice, (e) immediate correction procedures, and (f) feedback on classroom performance. Typically, with this approach each lesson is cumulative in that it builds on the previous content, and depending on where a particular lesson falls on the curriculum continuum, it may contain more or less instructional scaffolding as compared to other lessons (Darch, 1993; Tarver, 1999).

The presentation of content under this instructional approach (i.e., the lesson) follows a predetermined format. Lessons typically begin with a quick review of the key elements of the previous lesson along with a statement of the current lesson's goals. A general rule statement or strategy is presented that is intended to help the student learn the skill being taught in the lesson. For example, a rule statement might be that when attempting to identify the main idea of a paragraph pay close attention to the topic sentence (i.e., the first sentence) and the concluding sentence (i.e., the last sentence) of

the paragraph. The lesson would then involve the teacher modeling and leading the students through the implementation of a strategy. In the current example it might be highlighting these crucial sentences or going back and re-reading them after the student reads the whole paragraph. The students would then be given a chance to practice on their own while the teacher monitors and provides corrective feedback. All throughout the lesson the teacher would maintain a crisp pace and provide reinforcement for desired student behaviors. The lesson concludes with a closure activity that sets the stage for the next lesson (Darch, 1990; Rosenshine, 1986; Tarver, 1999).

Conceptual Framework for the Basal Approach

The basal instructional approach is predicated upon the use of a classroom reading series that typically includes three fundamental components. The first component is the student reader which is a basic anthology of literature. These anthologies provide a wide variety of material that covers various genre of writing and are often spiral and progressive in content (Wiggins, 1994). The second component is the teacher resource guides, which assist the teacher in dividing the anthology into instructional units that address specific requisite skills, strategies, and themes. The third basic component is the supporting materials. Typically, there are a variety of worksheets, trade books, and instructional software that support the individual lesson objectives (Stein, Johnson, & Gutlohn, 1999).

The basal driven reading classroom is typically one that utilizes homogeneous grouping. Although each lesson may begin with a whole group presentation of the material or a whole group discussion, generally the lesson is broken down into segments that are then repeatedly taught to a variety of smaller groups. The class as a whole is

usually divided into three homogeneous reading groups (high, average, low) that rotate between instructional centers, seatwork, and small group reading time with the teacher. As a result, in a typical 90 minute Language Arts block every student spends approximately 30 minutes with the reading teacher and 60 minutes engaging in supporting activities either independently or in peer groups (Shannon, 1989; Wiggins, 1994).

Because the different groups are able to rotate through the various areas of the classroom, students complete the Language Arts block having typically followed the same generic basal lesson format. Namely, they will have initially completed some form of pre-reading activity to activate prior knowledge, or review key concepts and vocabulary. Then they will have participated in some form of reading activity, usually conducted through a combination of whole group silent reading followed by reading aloud in small groups with the teacher. Finally, they will have all had the opportunity to firm up or practice skills and strategies taught during the lesson (Poplewell & Doty, 2001; Wiggins, 1994).

Description of Treatment Conditions

The explicit instructional approach made use of two comprehension strategies that have been demonstrated to be effective in improving comprehension, chiefly, the use of rule statements and multi-step procedures. Rule statements were generated to guide the participants in their efforts to identify the main ideas of paragraphs and passages. For example, one rule statement was that the main ideas of paragraphs are usually expressed in the first few sentences of the paragraph. With respect to the multi-step procedure, it articulated a series of actions designed to assist the participants in coping with multi-

paragraph passages. Such passages have many ideas that are important, but only one that is the central idea of the passage. Having this procedure incorporated into the explicit lesson helped to guide the participants in their efforts to properly select the idea that mattered most in terms of the passages' overarching meaning.

These two instructional scaffolds, rule statements and multi-step procedures, were used during each lesson of the explicit instructional implementation. If the instructional scaffolds were not readily understood or were not consistently being applied by the participants, then the experimental teachers made use of a standard correction procedure. The correction procedure was immediate and direct. It furnished the participants with the correct responses through modeling by the teacher of the correct response, followed by leading the participant in providing the correct response. The correction procedure concluded with the teacher testing the participant's ability to furnish the correct response unaided. An example of the lesson plan format for this approach can be found in Appendix B.

It should be noted that during the entire implementation of the explicit lesson, whether it was during the presentation of the rule statement, the multi-step procedure, or while the correction procedure was being executed, adherence to a predetermined script was paramount. Scripting was crucial in ensuring that the rule-statements and any explanation of the multi-step procedures were provided in a consistent fashion to the participants of the study. As such, scripting helped to control for the use of confusing vocabulary on the part of the experimental teacher, as well as for the use of complex syntax or sentence construction on the teacher's part. Because of the importance of scripting, it was specifically addressed on the fidelity observation checklist used by the

researcher during the explicit lesson observations, and on those used during the inter-observer reliability observations. A copy of this checklist is located in Appendix H.

The basal instructional approach utilized a traditional three component lesson. First the experimental teacher activated the participants' prior knowledge of the story's content. For example, the story concerning jazz began with a discussion about the participants' favorite types of music. Next the experimental teacher, when implementing the basal approach, typically asked the participants to read the text either in a round-robin fashion or silently to themselves. Finally, the lesson culminated in a summative activity that assessed whether or not the participants generally understood the main idea of the passage.

In contrast to the explicit instructional approach, the basal instructional approach did not offer any guiding rule statements or any governing procedure concerning how to attack the problem of main idea identification. Additionally, the basal approach placed no limits on the language of the experimental teacher. For example, terms such as *main idea*, *point*, *meaning*, or *theme* may have been used interchangeably. And finally, although correction of the participants by the experimental teacher was allowed under this approach, such corrections did not follow any standard format nor were they necessarily immediate. An example of this lesson plan format for this approach can also be found in Appendix B.

Dependent Variables

This study made use of multiple dependant variables. The dependent variable, or measures included (a) a pretest, (b) story retells, (c) unit tests, (d) a posttest, (e) a

maintenance measure, (f) a behavioral measure, and (g) a social validity measure. Three of the seven dependent measures were repeated measures relative to each participant. They were (1) the story retells, (2) the unit tests, and (3) the pretest/posttest KTEA-II.

The first repeated measure was the story retells. The story retells were completed at the conclusion of each treatment session (i.e., lesson) for the purpose of assessing the degree to which the participants grasped the main ideas presented in the lesson's text. The second repeated measure was the unit tests. These tests were administered at the conclusion of each week of the intervention phase of the study and served as a summative evaluation of each participant's proficiency in main idea identification. The third repeated measure was the reading comprehension subtest of the KTEA-II. This measure was a standardized test of achievement that yielded standard scores in the area of reading comprehension with a mean of 100 and a standard deviation of 15.

Repeated Measures

Story retells. After the experimental teachers completed teaching each lesson, whether explicit or basal, the participants were asked to complete a story retell. The story retells constituted the first repeated measure utilized in the study. The story retells contained a scripted set of instructions that the experimental teachers read to the participants, as well as a sheet for the experimental teachers to transcribe the participants' responses. Additionally, if needed, the story retells contained an oral prompt taken from the text of the current story that the experimental teachers read aloud to the participants. The purpose of the prompt was to stimulate the participants' memory in an effort to illicit suitable responses that demonstrated their knowledge, or lack of knowledge, concerning the main idea of the passage. The prompts were selected by the researcher and included

on the story retell form. Two sets of story retell forms were developed by the researcher; one set corresponding to the 12 stories used by the participants in grades 3–5, and another set that corresponding to the 12 stories used by the participants in grades 6–8. An example of the story retell forms, including prompts, used in this study can be found in Appendix C.

A simple scoring rubric was utilized to assign a numeric score to each participant's story retell based on the quality and completeness of their responses. When the length and scope of the participant's response was not adequate enough for the experimental teacher to assign a score, then corrective feedback and/or the reading of the oral prompt was used to facilitate an acceptable response by the participant. The experimental teachers made notations detailing the participants' responses to aide in the assignment of scores. In addition, the participants' responses to the story retells were transcribed. This allowed for an independent rater to also score the participants' responses in order to establish inter-rater reliability (IRR).

During the three week intervention phase of the study (12 treatment sessions), the researcher selected three days (25% of the sessions) for IRR checks on the participants' story retells in the basal treatment group and three days (25% of the sessions) for checks on the participants' story retells in the explicit treatment group. The summative effect of this schedule was that IRR checks were conducted on 50% of the total number of treatment days. The criteria used by the researcher to determine the IRR on the treatment days selected for review was to examine 25% of the story retells generated on that treatment day. The researcher used the same scoring rubric that the experimental teachers

used to assign scores to the story retells. An example of the scoring rubric can also be found in Appendix C.

Unit tests. The second repeated measure used in this study was administered at the conclusion of each week of the intervention phase of the study (i.e., every four lessons). The participants were given a unit test to measure their mastery of the content and procedures taught during the week. The unit tests included small paragraphs and passages of text taken from the current week's set of stories. They were accompanied by a set of multiple choice questions matched to each paragraph or passage, with a total of 10 questions for each unit test. This test asked a series of questions to assess the participants' ability to identify the main ideas of the selected paragraphs and passages. These tests were developed and scored by the researcher. Unlike the story retells, the experimental teachers offered neither corrective feedback nor prompting in an attempt to facilitate responses to every question. The unit tests were not scored on completeness, but rather on the percent correct per number attempted, therefore there was no advantage afforded for guessing. The unit tests were identical for both treatment conditions. Although, as with the story retell forms, two versions of each unit test were developed, one corresponding to the set of 12 stories used in the elementary school, and another corresponding to the set of 12 stories used in the middle school. An example of the unit tests used in this study can be found in Appendix D.

Posttest. After the conclusion of the intervention phase of the study, to include the administration of the three unit tests and the completion of all 12 treatment sessions, the participants were given the third repeated measure used in this study. This was the posttest. An alternate form of the KTEA-II served as the post-intervention assessment for

the study. The alternate form of the KTEA, the KTEA-II Form B, has no content overlap with the KTEA-II Form A that was used for the pretest / screener. The KTEA-II Form B has an alternate form reliability coefficient of 0.76 with respect to reading comprehension for grades 2–6, and an alternate form reliability coefficient of 0.80 with respect to reading comprehension for grades 7–12 (Cohen, Cohen, West, & Aiken, 2003). Therefore, the KTEA-II was deemed suitable to serve not only as the pretest (Form A), but as the posttest (Form B) in this study as well.

Non-repeated Measures

The remaining three dependant measures were not repeated measures. They were (1) the maintenance measure, (2) the behavioral measure, and (3) the social validity measure, which took the form of a student satisfaction survey. It should be noted that the behavioral measure, in the form of on-task / off-task behavioral observations, was conducted multiple times across each treatment group equally; however these observations were not repeated equally relative to each participant. Furthermore, because of the observation schedule and the nature of the observation checklist, all participants were not observed during the course of the study. Therefore, the behavioral measure was not included as a repeated measure of the participants.

Maintenance measure. The maintenance measure was one of the three non-repeated dependent measures. Approximately two weeks after the completion of the treatment sessions, the maintenance measure was administered to the participants. It was in the form of a curriculum-based test developed by the researcher. It also came in two versions (grades 3-5, and grades 6-8), and was identical in format to the unit tests. It was administered to the participants in each treatment condition. The purpose of the

maintenance measure was to ascertain the permanence of any experimental effects. An example of the maintenance measure used in this study can be found in Appendix E.

Behavioral measure. As indicated earlier, the behavioral measure is the second non-repeated dependent measure. The on-task behavior of the participants in this study was examined through the implementation of scheduled direct observations by the researcher. An on / off task observation checklist was used to yield a percentage of on-task behaviors during three selected phases of the lesson, (a) the initial five minutes of the lesson, (b) the medial five minutes of the lesson, and (c) the final five minutes of the lesson. During all three of the identified phases, the same three participants were observed. Each phase of the lesson under observation yielded a percentage of on-task behavior that was then averaged to produce an overall percentage of on-task behavior for the entire lesson. This procedure was applied to a total of six lessons, three basal and three explicit, during the course of the study, resulting in an equal number of observations conducted across the two treatment conditions. A copy of the observation checklist utilized in this study can be found in Appendix F.

Social validity measure. The final non-repeated dependent measure was the social validity measure. In an effort to examine social validity, the participants in this study were given a student satisfaction survey at the conclusion of the intervention phase of the study. This survey consisted of a simple 4 question Likert-scale survey that was read to the participants by the experimental teachers. The Likert-scale encompassed three levels of responses: (a) responses designated as “Agree” received a numerical value of 3, (b) responses designated as “Don’t Know” received a numerical value of 2, (c) and responses designated as “Disagree” received a numerical value of 1. The participants circled or

otherwise noted their answers to the survey questions as the experimental teacher read the questions aloud. The responses of the participants were kept confidential, in that no names were written on the surveys. The student satisfaction survey questions are presented in Table 4; see Appendix G for the complete survey.

Table 4

Student Survey Questions

Questions

1. I liked being in this reading group.
 2. I think I am a better reader since I have been in this group.
 3. I would want to be in this group again.
 4. I think other students would want to be in this group.
-

Fidelity of Treatment

Fidelity of treatment was addressed in this study through the implementation of a system of direct lesson observations. The researcher observed 25% of the treatment sessions, to include sessions utilizing both the explicit instructional approach and the basal instructional approach. This resulted in a total of three fidelity observations of the explicit and three fidelity observations of the basal treatment condition. The focus of these observations was the quality of instructional delivery, the time allotted to each phase of the lesson, and finally the techniques used for behavior / student management. An observation form specific to each type of instructional approach was used during each

of the six direct lesson observations. A copy of the observation checklists used in this study can be found in Appendix H.

In an effort to establish inter-observer reliability (IOR), two independent observers holding doctorates in special education, both of whom were trained and experienced in explicit and basal instructional approaches, conducted fidelity observations along with the researcher. The researcher was accompanied by one of these independent observers during 66%, or 4 out of the 6 fidelity observations conducted over the course of the study. These simultaneous observations, by the independent observer and the researcher, were conducted equally across each of the two treatment conditions. This observation schedule resulted in two simultaneous observations of the basal condition and two simultaneous observations of the explicit condition. The independent observers used the same observation checklists that the researchers used, a copy of which is located in Appendix H.

Analysis of Data

This study employed a quasi-experimental group design using both descriptive and statistical data. Participants were randomly assigned to either a basal treatment condition or an explicit treatment condition. This section contains the research questions investigated in this study, and the corresponding null hypotheses by which the research questions were answered. In addition, this section also includes a description of the data analysis conducted and the statistical procedures utilized.

Research Questions

There were seven research questions under investigation in this study, they are as follows:

1. To what extent are there statistically significant differences between the treatment groups on the pretest?
2. To what extent are there statistically significant differences between the treatment groups on the story retells?
3. To what extent are there statistically significant differences between the treatment groups on the unit tests?
4. To what extent are there statistically significant differences between the treatment groups on the behavioral measure?
5. To what extent are there statistically significant differences between the treatment groups on the social validity measure?
6. To what extent are there statistically significant differences between the treatment groups on the posttest?
7. To what extent are there statistically significant differences between the treatment groups on the maintenance measure?

Null Hypotheses

The null hypotheses for this study addressed the two levels of the independent variable and the seven dependent measures. The two levels of the independent variable were the basal instructional approach and the explicit instructional approach. The dependent measures included: (a) the pretest, (b) the story retells, (c) the unit tests, (d) the posttest, (e) the maintenance measure, (f) the behavioral measure, and (g) the social

validity measure. Three of the seven dependent measures were repeated measures relative to each participant. They were (1) the story retells, (2) the unit tests, and (3) the pretest/posttest KTEA-II. The null hypotheses that were tested are presented below.

Pretest

1. There is no statistically significant difference between the two treatment conditions on the mean scores of the pretest.

Story Retells

1. There is no statistically significant difference between the two treatment conditions on story retell 1.
2. There is no statistically significant difference between the two treatment conditions on story retell 2.
3. There is no statistically significant difference between the two treatment conditions on story retell 3.
4. There is no statistically significant difference between the two treatment conditions on story retell 4.
5. There is no statistically significant difference between the two treatment conditions on story retell 5.
6. There is no statistically significant difference between the two treatment conditions on story retell 6.
7. There is no statistically significant difference between the two treatment conditions on story retell 7.
8. There is no statistically significant difference between the two treatment conditions on story retell 8.

9. There is no statistically significant difference between the two treatment conditions on story retell 9.
10. There is no statistically significant difference between the two treatment conditions on story retell 10.
11. There is no statistically significant difference between the two treatment conditions on story retell 11.
12. There is no statistically significant difference between the two treatment conditions on story retell 12.
13. (a) There is no statistically significant difference between the two treatment conditions (group). (b) There is no statistically significant difference over the 12 story retells (time). (c) Any difference over time is not dependent upon treatment condition (time x group).

Unit Tests

1. There is no statistically significant difference between the two treatment conditions on unit test 1.
2. There is no statistically significant difference between the two treatment conditions on unit test 2.
3. There is no statistically significant difference between the two treatment conditions on unit test 3.
4. (a) There is no statistically significant difference between the two treatment conditions (group). (b) There is no statistically significant difference over the 3 unit tests (time). (c) Any difference over time is not dependent upon treatment condition (time x group).

Behavioral Measure

1. There is no statistically significant difference between the two treatment conditions on the mean scores of the total behavioral observations.

Social Validity Measure

1. There is no statistically significant difference between the two treatment conditions on the mean scores of the student satisfaction surveys.

Posttest

1. There is no statistically significant difference between the two treatment conditions on the mean scores of the posttest.
2. (a) There is no statistically significant difference between the two treatment conditions (group). (b) There is no statistically significant difference over the pre and post KTEA (time). (c) Any difference over time is not dependent upon treatment condition (time x group).

Maintenance Measure

1. There is no statistically significant difference between the two treatment conditions on the mean scores of the maintenance measure.

Statistical Analysis

The research questions investigated in this study, and the corresponding null hypotheses, examined two levels of the independent variable (explicit and basal instructional approaches) and seven dependent measures. The dependent measures were: (a) the pretest, (b) the story retells, (c) the unit tests, (d) the behavioral measure, (e) the social validity measure, (f) the posttest, and (g) the maintenance measure. The data were analyzed using the Statistical Package for the Social Sciences (SPSS 17.0) statistical

software. The mean scores of the dependent measures were examined to determine if there were statistically significant differences between the treatment groups. The significance level for this analysis was set at an alpha of .05 for all determinations.

Both descriptive and statistical data were analyzed. The descriptive data included (a) the demographic composition of the sample, (b) the means and standard deviations of the dependent measures, (c) the percentages associated with the fidelity of treatment, (d) the percentages associated with the inter-rater reliability, and (e) the percentages associated with the inter-observer reliability determinations.

The statistical analysis of the data included an independent-samples t test prior to the intervention phase of the study to verify the equivalency of the groups in terms of IQ on the WISC-III, reading comprehension pretest score on the KTEA-II, and ORF rates on DIBELS. Separate one-way analyses of variance (ANOVAs) were conducted to determine if there were statistically significant differences between mean scores of the two treatment conditions on (1) the pretest, (2) each of the story retells, (3) each of the unit tests, (4) the behavioral observations, (5) the posttest, and (6) the maintenance measure. The final dependent measure, the student satisfaction measure, was evaluated through the use of a multivariate analysis of variance (MANOVA), with each of the four survey questions functioning as a DV in the MANOVA. Additionally, mixed ANOVAs were performed on the repeated measures used in this study; specifically, a 2 x (12) ANOVA was performed on the results of the story retells, a 2 x (3) ANOVA was performed on the results of the unit tests, and a 2 x (2) ANOVA was performed on the results of the KTEA. With all of the repeated measures, the researcher compared the

mean differences between the scores of the two treatment groups to determine statistical significance. These statistical data were analyzed for within and between subject effects.

Summary

This chapter presented a description of the research methodology used in this study. The procedures used for sample selection, as well as the procedures for the collection of data were described. It presented a description of the independent variable and the dependent measures, to included a conceptual rational for each instructional approach that constituted the independent variable. This chapter closed with a section that detailed the research questions examined by this study, and the corresponding null hypotheses. Finally, the method of data analysis incorporated in the study was presented.

IV. RESULTS

Restatement of Purpose and Procedures

This chapter presents the results of this study, and the data analysis conducted by the researcher. The purpose of this study was to examine the effects of two instructional approaches to teaching main idea identification with students with mild intellectual disabilities / specific learning disabilities. The first instructional approach, or treatment condition, examined by this study was a basal approach that can be generally characterized as student directed. The second instructional approach, or treatment condition, examined by this study was an explicit approach that can be generally characterized as teacher directed. The key instructional difference between the two approaches is that the explicit approach utilized instructional scaffolds like rule-based statements, multi-step procedures, and immediate correction procedures; whereas the basal approach makes limited use, if any, of these instructional supports. Each treatment condition was applied to an equivalent sample of participants over a three week period.

Fidelity of Treatment and Inter-Observer / Inter-Rater Reliability

Fidelity of treatment was addressed over the three week intervention phase of the study through the implementation of a system of direct lesson observations. The researcher observed 25% of the experimental teachers implementing both the explicit

instructional approach and the basal instructional approach, for a total of three fidelity observations of the explicit condition and three fidelity observations of the basal condition. The researcher used an observation checklist specific to each type of instructional approach, in order to obtain a fidelity score for each observation. The mean score for the observations of the basal condition was 96.6% as measured by the basal observation checklist. The mean score for the observations of the explicit condition was 100% as measured by the explicit observation checklist. The mean score of all fidelity observations, across both treatment conditions, over the course of the study was 98.3%.

Inter-observer reliability (IOR) was obtained through the use of two independent observers holding doctorates in special education, both of whom were trained and experienced in the explicit and basal instructional approaches. These independent observers conducted multiple observations of both treatment conditions simultaneously with the researcher. The researcher was accompanied by one of these independent observers during 66%, or four out of the six fidelity observations. These simultaneous observations were conducted equally across both treatment conditions by the independent observers, using the same observation checklists as the researcher. This resulted in two independent observations of the basal condition and two of the explicit condition. The percent of agreement between the researcher and the independent observer during the basal condition was 100%, and during the explicit condition the percent of agreement was 95%. The percent of agreement across all inter-observer observations was 97.5%.

Inter-rater reliability (IRR) was obtained through scheduled story retell checks, whereby the researcher examined the story retell scores generated on a selected day, for a selected treatment condition. This resulted in three days (25% of the sessions) of checks

on the participants' retells in the basal treatment condition and three days (25% of the sessions) of checks on the participants' retells in the explicit treatment condition. The percentage of agreement across the three basal story retell checks was 92.2%, and the percentage of agreement across the three explicit story retell checks was 94.6%. The summative effect of this schedule was that the researcher examined the story retell scores given by the experimental teachers during 50% of the total treatment days. In order to adequately examine the story retells of a selected treatment day, the researcher reviewed 25% of the total story retells generated that day. The total percentage of agreement across all of the selected story retells was 94.3%.

Sample Description

The sample used in this study was analyzed descriptively to determine the demographic characteristics of the participants. The sample was further analyzed to determine the equivalency of the treatment groupings used for the basal instructional approach and the explicit instructional approach.

Descriptive Statistics

A total of 38 students served as participants in this study. They were all students from the same rural school district in Southeastern Alabama. Of the 38 participants in this study, 6 attended the district's middle school (representing 15.8% of the total sample), while the remainder of the sample, 32 participants (representing 84.2% of the total sample), attended the district's elementary school. All of the participants were eligible to receive special education services based on the criteria listed in the Alabama Administrative Code, under the following categories: 27 participants (71%) were eligible

under the specific learning disability category, defined for the purposes of this study as exhibiting mild learning problems; and 11 participants (29%) were eligible under the category of intellectual disabilities, defined for the purposes of this study as exhibiting mild intellectual disabilities.

The majority of the sample was male, with 28 male participants (74%). The remaining 10 participants (26%) were female. In terms of ethnicity, the majority of the sample was African American. The sample consisted of 29 African American participants (76%), with the remaining 9 participants identified as Caucasian (24%).

The sample was randomly divided into two treatment conditions, basal and explicit. The basal treatment condition had 18 participants, or 47% of the total sample as members. The explicit treatment condition had 20 participants, or 53% of the total sample as members. The demographics relative to each treatment condition are presented in Table 5.

Table 5

Demographics: Percentage by Approach

Basal Approach (N=18)		Explicit Approach (N=20)	
Characteristics	Percentage	Characteristics	Percentage
Gender		Gender	
Male (14)	77.70%	Male (14)	70.00%
Female (4)	22.30%	Female (6)	30.00%
Exceptionality		Exceptionality	
SLD (13)	72.30%	SLD (14)	70.00%
MR (5)	27.70%	MR (6)	30.00%
Ethnicity		Ethnicity	
African American (14)	77.70%	African American (15)	75.00%
Caucasian (4)	22.30%	Caucasian (5)	25.00%
Grade		Grade	
7 th (2)	11.20%	7 th (0)	0
6 th (1)	5.50%	6 th (3)	15.00%
5 th (5)	27.70%	5 th (5)	25.00%
4 th (8)	44.40%	4 th (7)	35.00%
3 rd (2)	11.20%	3 rd (5)	25.00%

Determining Group Equivalency

Group equivalency was established by conducting an independent-samples t test on the mean scores of the three screener / pretest assessments: (a) intelligence quotients

(IQs) as measured by the WISC-III or equivalent, (b) standard scores on the KTEA-II reading comprehension subtest, (c) oral reading fluency rates as measured by DIBELS. First, the participants' IQs were examined. The mean IQ scores of the 18 participants in the basal treatment group ($M = 83.444$, $SD = 13.106$) were compared with the mean IQ scores of the 20 participants in the explicit treatment group ($M = 82.900$, $SD = 13.182$), with no statistically significant difference found between the two groups ($t = 0.127$, $p = 0.899$, $p > .05$).

Next the standard scores on the reading comprehension subtest of the KTEA-II were examined. The mean scores of the 18 participants in the basal treatment group ($M = 73.666$, $SD = 8.764$) were compared with the mean scores of the 20 participants in the explicit treatment group ($M = 76.850$, $SD = 6.132$), with no statistically significant difference found between the two groups ($t = 1.307$, $p = 0.199$, $p > .05$).

Finally, the oral reading fluency rates obtained by each participant on the DIBELS assessment were examined. The mean scores of the 18 participants in the basal treatment group ($M = 77.277$, $SD = 28.246$) were compared with the mean scores of the 20 participants in the explicit treatment group ($M = 84.200$, $SD = 24.652$), with no statistically significant difference found between the two groups ($t = 0.806$, $p = 0.425$, $p > .05$). The results of these comparisons can be found in Table 6.

Table 6

Equivalency of the Sample

Test	Mean	SD	<i>t</i>	<i>p</i>
WISC-III: Intelligence Quotient			0.127	0.899
Basal Approach	83.444	13.106		
Explicit Approach	82.900	13.182		
Pretest KTEA-II: Reading Comprehension			1.307	0.199
Basal Approach	73.666	8.764		
Explicit Approach	76.850	6.132		
DIBELS: Oral Reading Fluency			0.806	0.425
Basal Approach	77.277	28.246		
Explicit Approach	84.200	24.652		

Research Question 1

To what extent are there statistically significant differences between the treatment groups on the pretest? The scores on the pretest were obtained from a standardized test of achievement, which had a mean of 100 and a standard deviation of 15.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on the mean scores of the pretest. The null hypothesis was retained. A separate one-way ANOVA compared the mean reading comprehension pretest scores for the basal group ($M = 73.660$, $SD = 8.765$) with the mean scores from the explicit group ($M =$

76.850, $SD = 6.133$). The results of the ANOVA were not statistically significant ($F(1, 36) = 1.710, p = 0.199, p > .05$). Table 7 presents the data from Research Question 1.

Table 7

ANOVA: Research Question 1

Measure	Condition	Mean	SD	df	F	P-Value
KTEA Pretest				37	1.710	0.199
	Basal (N = 18)	73.660	8.765			
	Explicit (N = 20)	76.850	6.133			

Research Question 2

To what extent are there statistically significant differences between the treatment groups on the story retells? The story retells contained a scripted set of instructions that the experimental teachers read to the participants. The participants' responses were scored using a rubric that generated a score, ranging from 0 – 2, depending on the accuracy and completeness of the participants' responses. The story retells were a repeated measure in this study.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on story retell 1. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.312, SD = 0.602$) with the scores from the explicit group ($M = 1.588, SD = 0.507$). The results of the ANOVA were not statistically significant ($F(1, 31) = 2.033, p = 0.163, p > .05$).

Null Hypothesis 2

There is no statistically significant difference between the two treatment conditions on story retell 2. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.625$, $SD = 0.500$) with the scores from the explicit group ($M = 1.684$, $SD = 0.477$). The results of the ANOVA were not statistically significant ($F(1, 33) = 0.127$, $p = 0.722$, $p > .05$).

Null Hypothesis 3

There is no statistically significant difference between the two treatment conditions on story retell 3. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.461$, $SD = 0.660$) with the scores from the explicit group ($M = 1.666$, $SD = 0.487$). The results of the ANOVA were not statistically significant ($F(1, 26) = 0.889$, $p = 0.354$, $p > .05$).

Null Hypothesis 4

There is no statistically significant difference between the two treatment conditions on story retell 4. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.666$, $SD = 0.617$) with the scores from the explicit group ($M = 1.894$, $SD = 0.315$). The results of the ANOVA were not statistically significant ($F(1, 32) = 1.958$, $p = 0.171$, $p > .05$).

Null Hypothesis 5

There is no statistically significant difference between the two treatment conditions on story retell 5. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.600$, $SD = 0.507$)

with the scores from the explicit group ($M = 1.473$, $SD = 0.512$). The results of the ANOVA were not statistically significant ($F(1, 32) = 0.513$, $p = 0.478$, $p > .05$).

Null Hypothesis 6

There is no statistically significant difference between the two treatment conditions on story retell 6. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.466$, $SD = 0.639$) with the scores from the explicit group ($M = 1.666$, $SD = 0.485$). The results of the ANOVA were not statistically significant ($F(1, 31) = 1.042$, $p = 0.315$, $p > .05$).

Null Hypothesis 7

There is no statistically significant difference between the two treatment conditions on story retell 7. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.588$, $SD = 0.507$) with the scores from the explicit group ($M = 1.764$, $SD = 0.437$). The results of the ANOVA were not statistically significant ($F(1, 32) = 1.180$, $p = 0.285$, $p > .05$).

Null Hypothesis 8

There is no statistically significant difference between the two treatment conditions on story retell 8. The null hypothesis was rejected. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.555$, $SD = 0.511$) with the scores from the explicit group ($M = 1.850$, $SD = 0.366$). The results of the ANOVA were statistically significant ($F(1, 36) = 4.227$, $p = 0.047$, $p < .05$).

Null Hypothesis 9

There is no statistically significant difference between the two treatment conditions on story retell 9. The null hypothesis was rejected. A separate one-way

ANOVA compared the mean retell scores for the basal group ($M = 1.333$, $SD = 0.617$) with the scores from the explicit group ($M = 1.736$, $SD = 0.452$). The results of the ANOVA were statistically significant ($F(1, 32) = 4.843$, $p = 0.035$, $p < .05$).

Null Hypothesis 10

There is no statistically significant difference between the two treatment conditions on story retell 10. The null hypothesis was retained. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.588$, $SD = 0.507$) with the scores from the explicit group ($M = 1.550$, $SD = 0.510$). The results of the ANOVA were not statistically significant ($F(1, 35) = 0.051$, $p = 0.821$, $p > .05$).

Null Hypothesis 11

There is no statistically significant difference between the two treatment conditions on story retell 11. The null hypothesis was rejected. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.388$, $SD = 0.607$) with the scores from the explicit group ($M = 1.789$, $SD = 0.418$). The results of the ANOVA were statistically significant ($F(1, 35) = 5.501$, $p = 0.024$, $p < .05$).

Null Hypothesis 12

There is no statistically significant difference between the two treatment conditions on story retell 12. The null hypothesis was rejected. A separate one-way ANOVA compared the mean retell scores for the basal group ($M = 1.470$, $SD = 0.514$) with the scores from the explicit group ($M = 1.800$, $SD = 0.410$). The results of the ANOVA were statistically significant ($F(1, 35) = 4.693$, $p = 0.037$, $p < .05$). Table 8 presents the data from the story retells from Research Question 2.

Table 8

ANOVA: Research Question 2 (Story Retells)

Score by Retell	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>P-Value</i>
<i>Retell 1</i>			32	2.033	0.163
Basal Approach	1.312	0.602			
Explicit Approach	1.588	0.507			
<i>Retell 2</i>			34	0.127	0.722
Basal Approach	1.625	0.500			
Explicit Approach	1.684	0.477			
<i>Retell 3</i>			27	0.889	0.354
Basal Approach	1.461	0.660			
Explicit Approach	1.666	0.487			
<i>Retell 4</i>			33	1.958	0.171
Basal Approach	1.666	0.617			
Explicit Approach	1.894	0.315			
<i>Retell 5</i>			33	0.513	0.478
Basal Approach	1.600	0.507			
Explicit Approach	1.473	0.512			
<i>Retell 6</i>			32	1.042	0.315
Basal Approach	1.466	0.639			
Explicit Approach	1.666	0.485			

(table continues)

Table 8 (continued)

Score by Retell	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>P-Value</i>
<i>Retell 7</i>			33	1.180	0.285
Basal Approach	1.588	0.507			
Explicit Approach	1.764	0.437			
<i>Retell 8</i>			37	4.227	0.047*
Basal Approach	1.555	0.511			
Explicit Approach	1.850	0.366			
<i>Retell 9</i>			33	4.843	0.035*
Basal Approach	1.333	0.617			
Explicit Approach	1.736	0.452			
<i>Retell 10</i>			36	0.051	0.821
Basal Approach	1.588	0.507			
Explicit Approach	1.550	0.510			
<i>Retell 11</i>			36	5.501	0.024*
Basal Approach	1.388	0.607			
Explicit Approach	1.789	0.418			
<i>Retell 12</i>			36	4.693	0.037*
Basal Approach	1.470	0.514			
Explicit Approach	1.800	0.410			

* Statistically significant at the .05 level.

Null Hypothesis 13

(a) There is no statistically significant difference between the two treatment conditions (group). The null hypothesis was retained. The results of the 2 x (12) ANOVA for between subject effects were not statistically significant ($F = 3.334, p = 0.095, p > .05$). (b) There is no statistically significant difference over the 12 retells (time). The null hypothesis was retained. The results of the 2 x (12) ANOVA for within subject effects (time) were not statistically significant ($F = 0.699, p = 0.738, p > .05$). (c) Any difference over time is not dependent upon treatment condition (time x group). The null hypothesis was retained. The results of the 2 x (12) ANOVA for within subject effects (time x group) were not statistically significant ($F = 1.157, p = 0.324, p > .05$). Sphericity can be assumed based on the high epsilon values, Huynh-Feldt, Epsilon = 0.969. The results of the 2 x (12) ANOVA are presented in Table 9.

Table 9

2 x (12) ANOVA: Research Question 2 (Story Retells)

Measure	Condition	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-Value</i>	<i>Partial eta²</i>
Retells	Between Subjects					
	GROUP	1	2.001	3.334	0.095	0.233
	Error	11	0.600			
	Within Subjects					

(table continues)

Table 9 (continued)

Measure	Condition	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-Value</i>	<i>Partial eta</i> ²
	TIME	11	0.135	0.699	0.738	0.060
	TIME X GROUP	11	0.224	1.157	0.324	0.095
	Error	121	0.193			

Research Question 3

To what extent are there statistically significant differences between the treatment groups on the unit tests? The unit tests were composed of 10 multiple choice questions matched to selected paragraphs and passages of text taken from the current week's stories. The unit tests generated a percent correct score. The unit tests were a repeated measure in this study.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on unit test 1. The null hypothesis was retained. A separate one-way ANOVA compared the mean unit test 1 scores for the basal group ($M = 77.222$, $SD = 24.206$) with the scores from the explicit group ($M = 79.000$, $SD = 16.189$). The results of the ANOVA were not statistically significant ($F(1, 36) = 0.072$, $p = 0.789$, $p > .05$).

Null Hypothesis 2

There is no statistically significant difference between the two treatment conditions on unit test 2. The null hypothesis was rejected. A separate one-way ANOVA compared the mean unit test 2 scores for the basal group ($M = 71.111$, $SD = 21.112$) with

the scores from the explicit group ($M = 83.000$, $SD = 11.742$). The results of the ANOVA were statistically significant ($F(1, 36) = 4.727$, $p = 0.036$, $p < .05$).

Null Hypothesis 3

There is no statistically significant difference between the two treatment conditions on unit test 3. The null hypothesis was rejected. A separate one-way ANOVA compared the mean unit test 3 scores for the basal group ($M = 64.705$, $SD = 19.722$) with the scores from the explicit group ($M = 78.000$, $SD = 13.611$). The results of the ANOVA were statistically significant ($F(1, 35) = 5.833$, $p = 0.021$, $p < .05$). Table 10 presents the data from the weekly unit tests from Research Question 3.

Table 10

ANOVA: Research Question 3 (Unit Tests)

Test	Condition	Mean	SD	df	F	P-Value
Unit Test 1				37	0.072	0.789
	Basal Approach	77.222	24.206			
	Explicit Approach	79.000	16.189			
Unit Test 2				37	4.727	0.036*
	Basal Approach	71.111	21.112			
	Explicit Approach	83.000	11.742			
Unit Test 3				36	5.833	0.021*
	Basal Approach	64.705	19.722			
	Explicit Approach	78.000	13.611			

* Statistically significant at the .05 level.

Null Hypothesis 4

(a) There is no statistically significant difference between the two treatment conditions (group). The null hypothesis was rejected. The results of the 2 x (3) ANOVA for between subject effects were statistically significant ($F = 5.404, p = 0.026, p < .05$).

(b) There is no statistically significant difference over the 3 unit tests (time). The null hypothesis was retained. The results of the 2 x (3) ANOVA for within subject effects (time) were not statistically significant ($F = 1.623, p = 0.205, p > .05$). (c) Any difference over time is not dependent upon treatment condition (time x group). The null hypothesis was retained. The results of the 2 x (3) ANOVA for within subject effects (time x group) were not statistically significant ($F = 1.051, p = 0.355, p > .05$). Sphericity can be assumed based on the high epsilon values, Huynh-Feldt, Epsilon = 0.988. The results of the 2 x (3) ANOVA are presented in Table 11.

Table 11

2 x (3) ANOVA: Research Question 3 (Unit Tests)

Measure	Condition	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-Value</i>	<i>Partial eta</i> ²
Unit Test	Between Subjects					
	GROUP	1	2441.971	5.404	0.026*	0.134
	Error	35	451.877			
	Within Subjects					
	TIME	2	429.348	1.623	0.205	0.044
	TIME X GROUP	2	277.997	1.051	0.355	0.029
	Error	70	264.515			

* Statistically significant at the .05 level.

Research Question 4

To what extent are there statistically significant differences between the treatment groups on the behavioral measure? An on / off task checklist was used during the behavioral observations to yield a percentage of on-task behaviors during three selected phases of the lesson, (a) the initial five minutes of the lesson, (b) the medial five minutes of the lesson, and (c) the final five minutes of the lesson. During all three phases of the lesson the same three participants were observed. An overall percentage of on-task behavior was generated for the lesson as a whole. The overall percentage of on-task behavior per lesson was used in the analysis.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on the mean scores of the total behavioral observations. The null hypothesis was retained. A separate one-way ANOVA compared the mean scores for the basal group ($M = 91.333$, $SD = 4.618$) with the mean scores from the explicit group ($M = 92.666$, $SD = 4.163$). The results of the ANOVA were not statistically significant ($F(1, 4) = 0.137$, $p = 0.729$, $p > .05$). Table 12 presents the data from the behavioral observations from Research Question 4.

Table 12

ANOVA: Research Question 4

Measure	Condition	Mean	SD	F	P-Value
Total				0.137	0.729
	Basal Approach	91.333	4.618		
	Explicit Approach	92.666	4.163		

Research Question 5

To what extent are there statistically significant differences between the treatment groups on the social validity measure? This measure consisted of a student satisfaction survey upon which the participants circled or otherwise noted their answers. There were three levels of response on the survey: (a) responses designated as “Agree” received a numerical value of 3, (b) responses designated as “Don’t Know” received a numerical value of 2, (c) and responses designated as “Disagree” received a numerical value of 1. As a result, the higher the numeric score, the higher the degree of satisfaction indicted by the participant.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on the mean scores of the student satisfaction surveys. The null hypothesis was retained. A separate one-way ANOVA compared the mean survey scores for the basal group ($M = 9.928, SD = 2.017$) with the mean scores from the explicit group ($M = 10.450, SD = 2.064$). The results of the ANOVA for the mean survey scores were not statistically significant ($F(1, 32) = 0.535, p = 0.469, p > .05$). Additionally, the results of

the MANOVA indicated no statistically significant difference between the two treatment conditions (group) ($F = 2.151, p = 0.100, p > .05$). There was a statistically significant univariate follow-up difference on question #2 in the MANOVA ($F = 5.441, p = 0.026, p < .05$). However, since the multivariate analysis was not significant, further examination of the univariate result is not warranted. Therefore, Table 13 simply presents the univariate data from each question to illustrate the significance of question #2 in relation to Research Question 5.

Table 13

ANOVA and MANOVA: Research Question 5

Survey Score and Score by Question	<i>Mean</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>P-Value</i>
<i>ANOVA: Survey Score</i>			33	0.535	0.469
Basal Approach	9.928	2.017			
Explicit Approach	10.450	2.064			
		<i>MS</i>	<i>df</i>	<i>F</i>	<i>P-Value</i>
<i>MANOVA: GROUP</i>				2.151	0.100
<i>Q1</i>		0.575	1	0.773	0.386
<i>Q2</i>		0.889	1	5.441	0.026*
<i>Q3</i>		0.004	1	0.007	0.936
<i>Q4</i>		0.021	1	0.036	0.851

* Statistically significant at the .05 level.

Research Question 6

To what extent are there statistically significant differences between the treatment groups on the posttest? The scores on the posttest were obtained from the KTEA, a standardized test of achievement, which had a mean of 100 and a standard deviation of 15. The pretest/posttest was a repeated measure in this study.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on the mean scores of the posttest. The null hypothesis was retained. A separate one-way ANOVA compared the mean reading comprehension posttest scores for the basal group ($M = 74.110$, $SD = 8.917$) with the mean scores from the explicit group ($M = 78.350$, $SD = 8.851$). The results of the ANOVA were not statistically significant ($F(1, 36) = 2.158$, $p = 0.151$, $p > .05$).

Null Hypothesis 2

(a) There is no statistically significant difference between the two treatment conditions (group). The null hypothesis was retained. The results of the 2 x (2) ANOVA for between subject effects were not statistically significant ($F = 2.208$, $p = 0.146$, $p > .05$). (b) There is no statistically significant difference over the pre & post KTEA (time). The null hypothesis was retained. The results of the 2 x (2) ANOVA for within subject effects (time) were not statistically significant ($F = 1.064$, $p = 0.309$, $p > .05$). (c) Any difference over time is not dependent upon treatment condition (time x group). The null hypothesis was retained. The results of the 2 x (2) ANOVA for within subject effects (time x group) were not statistically significant ($F = 0.314$, $p = 0.579$, $p > .05$). Sphericity

can be assumed based on the high epsilon values, Huynh-Feldt, Epsilon = 1.00. Table 14 presents the 2 x (2) ANOVA data from Research Question 6.

Table 14

2 x (2) ANOVA: Research Question 6 (Pretest & Posttest)

Measure	Condition	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-Value</i>	<i>Partial eta²</i>
Pre/Post	Between Subjects					
	GROUP	1	260.950	2.208	0.146	0.058
	Error	36	118.199			
	Within Subjects					
	TIME	1	17.909	1.064	0.309	0.029
	TIME X GROUP	1	5.278	0.314	0.579	0.009
	Error	36	16.826			

Research Question 7

To what extent are there statistically significant differences between the treatment groups on the maintenance measure? The maintenance measure was composed of 10 multiple choice questions matched to selected paragraphs and passages of text taken from the stories used in the study. The maintenance measure generated a percent correct score.

Null Hypothesis 1

There is no statistically significant difference between the two treatment conditions on the mean scores of the maintenance measure. The null hypothesis was

retained. A separate one-way ANOVA compared the mean maintenance measure scores for the basal group ($M = 62.666$, $SD = 14.375$) with the mean scores from the explicit group ($M = 71.666$, $SD = 12.485$). The results of the ANOVA were not statistically significant ($F(1, 32) = 3.706$, $p = 0.063$, $p > .05$). Table 15 presents the data from Research Question 7.

Table 15

ANOVA: Research Question 7

Test	Condition	Mean	SD	df	F	P-Value
Maintenance Test				33	3.706	0.063
	Basal Approach	62.666	14.375			
	Explicit Approach	71.666	12.485			

Summary

This chapter presented the results of this study. The descriptive statistics of the sample were presented along with the results of independent samples t -tests performed on the pre-intervention scores. The results of these analyses showed that the samples were equivalent prior to the application of the independent variable. The dependent measures of this study included: (a) the pretest, (b) the story retells, (c) the unit tests, (d) the posttest, (e) the maintenance measure, (f) the behavioral measure, and (g) the social validity measure. Three of the seven dependent measures were repeated measures relative to each participant. They were (1) the story retells, (2) the unit tests, and (3) the pretest/posttest KTEA-II. The dependent measures were evaluated through the use of

separate one-way ANOVAs, a MANOVA, and mixed ANOVAs on the repeated measures.

The results of the separate one-way ANOVAs were reported for each null hypothesis. These results indicated that there were no statistically significant differences between the two treatment conditions on (1) the pretest, (2) the behavioral observations, (3) the posttest, (4) the maintenance measure. The results of both a separate one-way ANOVA on the total survey score, along with the results of a MANOVA indicated no statistically significant difference on the social validity measure. However, the MANOVA did indicate a univariate result that was a statistically significant in response to one question on the student satisfaction survey (social validity measure). Specifically, the participants from the explicit treatment condition reported, to a significantly greater extent, that they felt as though they were better readers as a result of participating in the intervention phase of this study.

In terms of the repeated measures, the first repeated measure was the story retells. The separate one-way ANOVAs conducted on the 12 story retells indicated that four of the 12 story retells achieved statistically significant differences between the two treatment conditions. The explicit condition produced the higher, statistically significant, scores on all four of the story retells in question. However, the results of the 2 x (12) ANOVA indicated no statistically significant differences were present both between subjects and within subjects.

The second repeated measure was the unit tests. The separate one-way ANOVAs conducted on the three unit tests indicated that two of the three unit tests achieved statistically significant differences between the two treatment conditions. The explicit

condition produced the higher, statistically significant, scores on the two unit tests in question. Additionally, the results of the 2 x (3) ANOVA indicated that there is a main effect for group, with the average scores of the unit tests differing significantly by treatment condition. The explicit condition produced the higher, statistically significant, mean scores. However, the within subjects results did not indicate a statistically significant difference.

The third repeated measure was the pretest / posttest. The results of the 2 x (2) ANOVA indicated that no statistically significant differences were present both between subjects and within subjects. A discussion of the results, as well as conclusions and recommendations for future research, are presented in the next chapter.

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the present study, including the purpose of the study and the procedures utilized during its implementation. The results of the study are presented as they relate to the instructional needs of students with mild intellectual disabilities / specific learning disabilities in the area of main idea identification. Finally this chapter will conclude with a discussion concerning the limitations associated with this study, as well as a discussion of recommendations for future research.

Purpose and Procedures

The purpose of this study was to examine the effects of two different instructional approaches to improving main idea identification in students with mild intellectual disabilities / specific learning disabilities. A review of the research in the area of main idea identification revealed an extensive collection of research that supported the efficacy of an explicit instructional approach to teaching reading comprehension skills such as main idea identification. This review also indicated that this extensive collection of research was not very diverse in terms of the sampled populations. Generally speaking, there were abundant examples of research found in the literature that focused on homogeneous samples of students identified as having specific learning disabilities. However, research that focused on students with mild intellectual disabilities / specific

learning disabilities as the target population from which to draw heterogeneous experimental samples was far less common. This is important to note in light of other findings present in the general body of literature concerning the current climate of public education. Such a review of the literature provides an indication of just how heterogeneous the general education classroom has become in terms of the instructional needs of today's students. Consequently, this study sought to examine the effects of the explicit instructional approach, as compared to the basal instructional approach, when applied to a heterogeneous group of students with mild intellectual disabilities / mild learning problems.

The explicit instructional approach used in this study was based upon a belief in the effectiveness of systematic, clear, and unambiguous teaching. It is a teacher-directed approach that leaves little learning to chance (Arrasmith, 2003). The explicit approach seeks to organize the requisite skills into purposeful, well organized, and hierarchical instructional sequences. The result of this approach is that students typically benefit from more instructional interactions with their teacher and spend a greater amount of classroom time engaged in the instructional task at hand (Torgesen, 1996). As such its use has been demonstrated to be effective across many content areas and with students identified as having various disabilities (Vaughn & Linan-Thompson, 2003).

As previously stated, the basal instructional approach is predicated upon the use of a classroom reading series that typically includes three fundamental components. The first component is the student reader which is a basic anthology of literature (Wiggins, 1994). The second component is the teacher resource guides, which help to enable the teacher to divide the anthology into instructional units that address specific requisite

skills, strategies, and themes. The third basic component is the supporting materials. Generally, these come in the form of a variety of worksheets, trade books, and instructional software (Stein, Johnson, & Gutlohn, 1999).

A total of 38 students served as participants in this study. They were all students from the same rural school district in Southeastern Alabama. Of the 38 participants in this study, 6 attended the district's middle school (representing 15.8% of the total sample), while the remainder of the sample, 32 participants (representing 84.2% of the total sample), attended the district's elementary school. The participants were randomly assigned to either an explicit treatment condition or a basal treatment condition. The participants in this study received either the explicit or basal instructional approach during a treatment session that lasted 25 - 30 minutes a day, four days a week. The course of the treatment condition lasted for three weeks, resulting in 12 treatment sessions per participant.

Each of the four experimental teachers in this study was trained on the basal and explicit instructional approaches over the course of two training days prior to the start of the intervention phase of the study. Subsequently, each of the four experimental teachers implemented both of the two instructional approaches during the intervention phase of this study. All of the experimental teachers were certified, highly qualified, special education teachers in the state of Alabama who held a masters degree.

Efforts were undertaken to ensure the equivalency of the treatment groups and the quality of the presentation of the independent variable (instructional approach). Prior to the intervention phase of the study, the equivalency of the treatment groups that experienced either the basal treatment condition or the explicit treatment condition was

established through an examination of the participants' pre-intervention scores. During the course of the intervention phase of the study, the researcher implemented an equal schedule of observations across both treatment conditions to ensure the fidelity of the independent variables implementation. These steps, along with others initiated by the researcher, helped to limit the effects of extraneous factors so that the observed effects could be attributed to the influence of the independent variable.

During each week of the intervention phase of the study, the following activities were conducted: (a) experimental teachers implemented both the basal and explicit lessons, (b) story retells were collected on the students after the completion of each lesson (including IRR checks on the selected days), (c) behavioral observations were conducted, (d) fidelity observations were performed (including IOR checks during the selected observations), and (e) unit tests were administered. After three weeks, the intervention phase of the study concluded with the administration of the student satisfaction measure and the administration of the posttest. And finally, with the administration of the maintenance measure two weeks after the completion of the last treatment session.

Results and Discussion of Findings

The results of this study indicated that there were no statistically significant differences between the two treatment conditions on (1) the pretest, (2) the behavioral measure, (3) the posttest, (4) the maintenance measure, and (5) the social validity measure. However, there was a statistically significant difference in the responses across treatment conditions on one question from the student satisfaction survey, with the

explicit condition producing the higher, statistically significant score on this particular question. In terms of the repeated measures, four of the 12 story retells achieved statistically significant differences between the two treatment conditions, with the explicit condition producing the higher, statistically significant, scores on all of the four story retells in question. However, with respect to the story retells, no statistically significant differences were present both between subjects and within subjects. Additionally, there were significantly different scores on the average of the unit tests, with the explicit condition producing the higher, statistically significant, mean scores. However, with respect to the unit tests, the effect size was small and the observed power was only modest. Finally, the results of the last repeated measure, the pretest / posttest KTEA, did not indicate that statistically significant differences were present both between subjects and within subjects.

Pretest

The participants in this study were assessed with the reading comprehension subtest of the KTEA-II, which was a standardized test of achievement that had a mean of 100 and a standard deviation of 15. This assessment served as the pretest for the study. A separate one-way ANOVA compared the mean reading comprehension pretest scores between the two treatment groups, the results of which were not statistically significant ($F(1, 36) = 1.710, p = 0.199, p > .05$).

The mean score for the explicit group ($M = 76.850$) was greater than the mean score obtained by the basal group ($M = 73.660$), however the fact that this difference was not statistically significant was an important and necessary condition for the study to be implemented. The scores on the pretest served as one of the variables used to establish

the equivalency of the treatment groups. Ensuring that the two treatment groups were equal was critical in allowing any statistically significant differences observed on the other dependent measures to be attributed to the effects of the independent variable.

Story Retells

After the completion of each treatment session, the experimental teachers administered a story retell to each participant. The separate one-way ANOVA's conducted on the 12 story retells indicated that four of the 12 retells achieved statistically significant differences between the two treatment conditions, with the explicit condition producing the higher, statistically significant, scores on all of the four story retells in question. The story retells that demonstrated statistical significance were: (a) story retell 8 ($F = 4.227, p = 0.047, p < .05$), (b) story retell 9 ($F = 4.843, p = 0.035, p < .05$), (c) story retell 11 ($F = 5.501, p = 0.024, p < .05$), and (d) story retell 12 ($F = 4.693, p = 0.037, p < .05$). Additionally, the results of the 2 x (12) ANOVA for between subject effects (group) were not statistically significant ($F = 3.334, p = 0.095, p > .05$), nor were the results for within subject effects (time) ($F = 0.699, p = 0.738, p > .05$) and within subject effects (time x group) ($F = 1.157, p = 0.324, p > .05$).

The difference between the two treatment conditions on the scores of four of the story retells during the first week of the intervention were not statistically significant, even though on all four of the treatment sessions conducted during the first week the explicit group achieved a higher mean score on the story retells. Unlike the previous week, the second week of the intervention was a transition week in terms of the differences between the mean story retell scores of the two treatment conditions. The first treatment day of week two (treatment session 5) produced a story retell (retell 5) that

actually showed a higher mean score on the story retell for the basal group as compared to the explicit group, although this difference was not statistically significant. This was followed by two treatment days that produced story retells (retell 6 and retell 7) where the explicit group once again demonstrated higher mean scores on the story retells, although once again these differences were not statistically significant. Week two concluded with story retell 8, which for the first time in the intervention phase of the study demonstrated statistically significant differences between the two treatment conditions whereby the explicit group produced significantly higher scores.

The third, and final, week of the intervention phase of the study demonstrated much more consistent results, with three of the story retells (retell 9, retell 11, and retell 12) evidencing statistically significant differences between the treatment conditions. On each of these three treatment days the explicit condition proved to produce the significantly higher mean scores, with the other treatment day producing scores on the story retell (retell 10) that were virtually the same across the two treatment conditions. When considering the results of the third week within the context of the previous two weeks, it would seem that the effects of the independent variable increased as the length of time the participants were exposed to it increased. This may suggest that the participants required a minimum number of exposures to the explicit instructional approach before the rule statements and multi-step procedures, which constituted the key operational features of the explicit lesson, were internalized and applied effectively by the participants.

The results of the 2 x (12) ANOVA indicted that between subjects effects approached significance ($p = 0.095$), yet did not achieve it. This was interpreted as

having resulted from the exclusion of 25 participants from the analysis due to their having missed at least one story retell. The results of the separate one-way ANOVAs on the individual story retells seem to suggest that the effects of the independent variable eventually appearing over the course of the later story retells. If more participants could have been included in the analysis perhaps significance would have been achieved. Therefore the failure of the story retells to indicate statistically significant results between subjects could be interpreted as reflecting more upon factors unrelated to the independent variable, such as a drop in participant attendance.

Unit Tests

After the completion of each week of the intervention phase of the study, the experimental teachers administered a unit test to the participants. The separate one-way ANOVAs conducted on the three unit tests indicated that two of the three unit tests achieved statistically significant differences between the two treatment conditions, with the explicit condition producing the higher, statistically significant, scores on both of the two unit tests in question. The unit tests that demonstrated statistical significance were unit test 2 ($F = 4.727, p = 0.036, p < .05$) and unit test 3 ($F = 5.833, p = 0.021, p < .05$). Additionally, the results of the 2 x (3) ANOVA indicated a statistically significant difference between subjects (group) across the two treatment conditions ($F = 5.404, p = 0.026, p < .05$); even though the within subject effects were not significant, (time) ($F = 1.623, p = 0.205, p > .05$) and (time x group) ($F = 1.051, p = 0.355, p > .05$)

The difference between the two treatment conditions on the scores of the unit test administered during the first week of the intervention (unit test 1) was not statistically significant, even though the explicit group achieved a higher mean score on the unit test

when compared to the basal group. The unit tests administered during the second and third weeks of the intervention phase of the study (unit test 2 and unit test 3) did however demonstrate statistically significant differences between the treatment conditions, with the explicit condition producing the higher mean score. As was the case with the story retells, it would appear that the effects of the independent variable on the participants' unit tests performance increased as the length of time the participants were exposed to the independent variable increased. Once again, this may suggest that the participants required a minimum number of exposures to the explicit instructional approach before the rule statements and multi-step procedures, which constituted the key operational features of the explicit lesson, were internalized and applied effectively by the participants.

The results of the analysis of the mean scores from the total of the unit tests across both treatment conditions indicated that indeed there were statistically significant differences between the two treatment conditions on the unit tests. This was interpreted as having resulted from the effects of the independent variable appearing over the course of the medial, and the final treatment sessions. These results seem to correspond with those obtained from the story retells. This was not unexpected given that both measures should be linked to the effectiveness of each individual lesson. Therefore, as the individual lesson assessments (i.e., the story retells) begin to show significant differences between the two treatment groups, then so too should the unit tests begin to show differences if both of these measures are indeed assessing the degree to which content and procedure is being learned. Interestingly, the unit tests appeared to demonstrate the effect of the independent variable during the second week of the intervention, when in terms of the story retells it appeared that the effects were going through a transition towards

significance, although never achieving it. It should be noted that, unlike the story retells, only one participant was excluded from the analysis of between subject effects on the unit tests.

Behavioral Measure

During each of the three weeks of the intervention phase of the study, behavioral observations were conducted equally across both treatment conditions. A separate one-way ANOVA compared the mean behavioral observation scores from the basal group with the mean scores from the explicit group, and the results of the ANOVA were not statistically significant ($F(1, 4) = 0.137, p = 0.729, p > .05$).

There were two factors that influenced the scores on the behavioral observations. The first factor was related to the skill and experience of the experimental teachers. All four of the experimental teachers were well trained and proficient in the use of effective classroom management techniques, resulting in a very low incidence of off-task behavior during the treatment sessions regardless of the instructional approach. The second factor concerned the time of year in which the study was conducted, which was towards the end of the school year. By this point in the school year, the participants had already become accustomed to the behavior management system, or style of classroom management, that the experimental teachers preferred, and as a result the participants adapted well to the activities associated with the treatment sessions. The strength of the experimental teachers' management styles seemed to have negated any inherent difference in the instructional approaches related to behavior.

Social Validity Measure

At the completion of the intervention phase of the study, the participants were given a student satisfaction survey. A separate one-way ANOVA compared the mean survey scores for the basal group with the mean scores from the explicit group. The results of the ANOVA for the mean survey scores were not statistically significant ($F = 0.535, p = 0.469, p > .05$). Similarly, the results of the MANOVA indicated no statistically significant difference (group) on the social validity measure ($F = 2.151, p = 0.100, p > .05$). However, the MANOVA did indicate a univariate result that was a statistically significant in response to one question on the student satisfaction survey ($F = 5.441, p = 0.026, p < .05$).

Although the mean survey scores between the two treatment conditions did not demonstrate any statistically significant differences, it is important to note the one question out of the four questions contained on the student satisfaction survey did show a statistically significant difference between the two treatment conditions. The question that achieved significance read, "I think I am a better reader since I have been in this group." The mean score for this question for the basal group ($M = 2.571$) was significantly lower than the mean scores for the explicit group ($M = 2.900$), indicating that the participants in the explicit group felt that they personally improved as readers more than the participants in the basal group. What makes this result interesting is that this was a student perception independent of the scores on the story retells, or the unit tests, which were not shared with the participants. Thus, the explicit instructional approach appeared to have engendered a greater feeling of competence among the participants exposed to it, than did the basal instructional approach.

Posttest

Also at the completion of the intervention phase of the study, the participants were assessed with the reading comprehension subtest of an alternate form of the KTEA-II, a standardized test of achievement that had a mean of 100 and a standard deviation of 15. A separate one-way ANOVA compared the mean reading comprehension posttest scores for the basal group with the scores from the explicit group. The results of the ANOVA were not statistically significant ($F = 2.158, p = 0.151, p > .05$). Additionally, a 2 x (2) ANOVA examined the pretest / posttest KTEA. The results of the 2 x (2) ANOVA indicated that no statistically significant differences were present both between subjects (group) ($F = 2.208, p = 0.146, p > .05$); and within subjects (time) ($F = 1.064, p = 0.309, p > .05$), within subjects (group x time) ($F = 0.314, p = 0.579, p > .05$).

The results of the posttest were not unexpected, neither was the fact that the mean difference scores between the pretest / posttest comparison failed to yield statistically significant differences between the two treatment conditions. The use of a standardized test of achievement, although immensely beneficial in terms of establishing initial equivalency of the treatment groups, does have limitations in functioning as a posttest in a study that is of relatively short duration. This is due to the fact that generally speaking standardized tests of achievement may not be the best suited instrument to detect short term gains in achievement, as compared to a curriculum based measure. Nevertheless, due to the substantial benefit of using the KTEA-II as a pretest, it was retained as the posttest in this study.

Maintenance Measure

Two weeks after the completion of the intervention phase of the study, a maintenance measure composed of 10 multiple choice questions matched to selected paragraphs and passages of text taken from the stories used in the study was administered. A separate one-way ANOVA compared the mean maintenance measure scores for the basal group with the scores from the explicit group. The results of the ANOVA were not statistically significant ($F = 3.706, p = 0.063, p > .05$).

Although the results indicated a higher mean score for the explicit condition ($M = 71.666$) when compared to the mean of the basal condition ($M = 62.666$), both conditions demonstrated a decrease in the mean scores as compared to the previous unit tests. This may be an indication of the permanence of the effects of the independent variable. This decrease in the mean scores is interpreted as reflecting upon the length of the intervention phase of the study, in that given a longer period to apply the independent variable; the results of the maintenance measure may have retained the presence of statistically significant differences between the two treatment conditions.

Limitations and Recommendations

This study investigated the efficacy of two dissimilar instructional approaches, a basal approach and an explicit approach in terms of their efficacy in teaching main idea identification to student with mild intellectual disabilities / specific learning disabilities. The results of this study indicated that the explicit instructional approach produced significantly better scores on two measures that were based on the story content and procedures taught during each lesson. These measures were the story retells and the unit

tests. However, the other dependent measures used in this study such as the (a) pretest, (b) behavioral measure, (c) social validity measure, (d) posttest, (e) and maintenance measure failed to demonstrate statistically significant differences. The following section will present the limitations involved with this study, as well as some recommendations for future research.

Limitations

Conducting research involving students with disabilities in public schools presents many challenges for the researcher. Students with disabilities typically receive specially designed instruction and related services during the course of the school day, which makes scheduling treatment sessions in which an independent variable may be applied very difficult. Also, the pressure of high-stakes testing often prompts schools to institute various remediation and intervention groups that may include students with disabilities as members. The end result being that there is only a limited window in which studies can easily be implemented in the public schools, both in terms of the number of days that a given study can be conducted, and in terms of the number of minutes per day that students can be freed to participate.

This study would have benefited from both a longer implementation window and more actual minutes of instruction per treatment session. The results of the two measures that achieved significance appeared to indicate that the independent variable, the instructional approach, took a number of days to demonstrate effects. Having a longer length of intervention both in terms of days and minutes per day may have resulted in stronger effects that might have been detected sooner, or by measures such as the

posttest. Additionally, these effects might have still been detectable at the time of the maintenance measure's administration.

Another aspect of this study that may have limited its results was the size of the sample. The sample ($N = 38$) was adequate to demonstrate some statistically significant effects on two of the dependent measures, however the effect size and observed power for the results obtained on both of these measures were not of the level generally considered educationally significant. A larger sample would have greatly increased the likelihood that the effect size and the observed power would have achieved a suitable level of significance given the same outcomes on both measures. This is an important consideration when evaluating the impact and generalizability of the finding contained within this study.

Recommendations

There are four key recommendations for future research that can be derived from the findings of this study. The first recommendation for future research is to implement future studies for a longer length of time, thus allowing for adequate time for the experimental approaches under examination to produce effects, given such effects are possible. In the case of this study, it would have been interesting to determine if the significant differences observed between the two treatment condition on measures such as the story retells and the unit tests would have stabilized in such a way as to produce sustained significantly better scores for the explicit approach. Furthermore, should such sustained effects be observed, studies with an expanded intervention period might be able to better ascertain the permanence of the observed gains.

The second recommendation for future research is to examine the impact of implementing a similarly designed study but with an expanded amount of instructional time per treatment session. An examination of the results of this study suggests that the differences between the explicit and the basal instructional approaches took a few lessons to develop to a point where statistical significance was achieved. Perhaps future research that featured an expanded amount of instructional time per treatment session would have reached the point of producing significantly greater scores with the explicit condition sooner than this study was able to establish such gains.

The third recommendation for further research is to consider repeating a similarly designed study with a greatly expanded sample. Although granted, the size of the sample that is available to the researcher is sometimes limited by uncontrollable factors; future research should focus on obtaining a suitably large sample for this kind of study in order to increase the likelihood of reaching a significant level of effect size and observed power. Certainly achieving statistical significance is the first standard that research must meet in order to begin to offer interpretations of the relative efficacy of contrasting instructional approaches, however achieving adequate effect size and observed power are of importance when making judgments about the educational impact of such results. By conducting similar research with a large sample perhaps the necessary effect size and observed power can be great enough to make educationally relevant decisions concerning the effectiveness of these instructional approaches.

The fourth, and final, recommendation for future research is not only to increase the number of participants in the sample, but also to expand the grade level range of the participants as well. Future research should consider including high school students with

mild intellectual disabilities / specific learning disabilities in the sample of participants in an effort to expand the generalizability of any potential findings. The educational significance of findings from research that indicated significantly greater gains through the use of an explicit instructional approach would be greatly enhanced through the use of a sample that spanned multiple grade levels.

Summary

The results of this study support the notion that explicit instructional approaches, when applied to students with mild intellectual disabilities, can produce some positive instructional benefits. Furthermore, the results of this study support some of the findings of previous research that indicate heterogeneous instructional groupings produce positive instructional outcomes (Keegan & Shrake, 1991; Fountas & Pinnell, 1996; Elbaum, Schumm, & Vaughn, 1997; Vaughn, Hughes, Moody, & Elbaum, 2001; Poole, 2008). In particular, this study indicated that heterogeneous groups comprised of students with mild intellectual disabilities / specific learning disabilities are capable of benefiting from the same instructional treatments, which is a necessary and important condition given the push for heterogeneous instructional groupings by school districts across the United States (Vaughn, Hughes, Moody, & Elbaum, 2001; Chorzempa & Graham, 2006; Poole, 2008).

The education of students with mild intellectual disabilities / specific learning disabilities in the general education classroom is no longer a hypothetical issue to be debated and analyzed; it is the reality of our public school classrooms. Families of children with disabilities have long struggled to guarantee their children a place in the

general education classroom, perhaps for the first time, there is a very real chance that a place can be found. The issue now is not whether children with disabilities should be included, but rather are we as educators ready to teach them effectively. This study, along with many like it, has shown that through the use of explicit, direct teaching methods even diverse groups of children can make educational gains. The struggle now is to see that such practices are put into place in our classrooms.

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APPENDICES

APPENDIX A
LETTERS OF PERMISSION / CONSENT

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS AN APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

**PARENTAL PERMISSION/CONSENT
for a Research Study entitled
*“Improving Reading Comprehension”***

Your child is invited to participate in a research study that will hopefully help to improve your child’s reading comprehension. The study is being conducted by Alan Miller, under the direction of Dr. Craig Darch in the Auburn University Department of Special Education, Rehabilitation, Counseling / School Psychology. Your child was selected as a possible participant because he or she is currently receiving specially designed reading instruction. Since your child is age 18 or younger we must have your permission to include him/her in the study.

If you decide to allow your child to participate in this research study, your child will be asked to participate in a small, reading intervention group. Your child’s total time commitment will be approximately two hours per week. All participants in this study will continue to be taught their typical core reading program in their scheduled Reading or Language Arts classes. In addition to their typical whole group reading instruction, the neutral party will verify daily consent by escorting the consenting participant to the small reading group setting (e.g. a special education resource room on their home school's campus), where the treatment condition will take place. During this transition, the participants will have the opportunity to express to the neutral party their willingness to participate in the daily session.

There are no risks or costs associated with your child participating in this study.

If you (or your child) change your mind about your child’s participation, your child can be withdrawn from the study at any time. Your child’s participation is completely voluntary. If you choose to withdraw your child, your child’s data can be withdrawn as long as it is identifiable. Your decision about whether or not to allow your child to participate or to stop participating will not jeopardize your or your child’s future relations with Auburn University, the Department of Special Education, Rehabilitation, Counseling / School Psychology or Eufaula City Schools.

Parent/Guardian Initials_____

Your child's privacy will be protected. Any information obtained in connection with this study will remain confidential. The data collected will be protected by deleting any personally identifiable information. Information obtained through your child's participation may be used to fulfill an educational requirement, published in a professional journal, or presented at a professional meeting.

If you (or your child) have questions about this study, please ask them now or contact Alan Miller at (334)687-1100 or Dr. Craig Darch at (334) 844-5943. A copy of this document will be given to you to keep.

If you have questions about your child's rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO ALLOW YOUR CHILD TO PARTICIPATE.

Parent/Guardian Signature

Investigator obtaining consent Date

Printed Name

Printed Name

Date

Child's name _____

Co-Investigator Date

Printed Name

TELEPHONIC RECRUITMENT / FOLLOW UP SCRIPT
(For use by a Neutral Party)

My name is _____, I am calling about a three week study being conducted by Alan Miller, a doctoral student from the Department of Special Education, Rehabilitation, Counseling / School Psychology at Auburn University. I would like to invite your child to participate in this research study on improving reading comprehension. Your child may be eligible to participate if they are currently eligible for special education services. Your child cannot participate if they are not eligible for special education.

As a participant, your child will be asked to participate in small group reading intervention. Your child may decline to participate on any day they choose.

Any information concerning your child's participation in this study will be kept confidential. There are no risks to your child associated with participating in this study. There will be no financial compensation to you for agreeing to allow your child to participate in this study.

If you would like to participate in this research study, please contact Alan Miller at 334-687-1100 ext. 145.

Do you have any questions now? If you have questions later, please contact Alan Miller at 334-687-1100 ext. 145 or you may contact his advisor, Dr. Craig Darch, at 334-844-7676.



*Building Our Future on a
Tradition of Excellence*

Dr. Barry R. Sadler
Superintendent

Eufaula City Schools

420 Sanford Avenue • Eufaula, AL 36027-1499 • (334) 687-1100 • Fax: (334) 687-1100

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Institutional Review Board
c/o Office of Human Subjects Research
307 Samford Hall
Auburn University, AL 36849

Dear IRB Members,

February 20, 2009

After reviewing the proposed study, “Main Idea Identification with Students with Mild Mental Retardation”, presented by Mr. Alan Miller, a graduate student at Auburn University, I have granted permission for the study to be conducted in Eufaula City Schools.

The purpose of the study is to determine if main idea identification can be improved through the use of explicit instructional techniques. The primary activity will be small group reading intervention. Only students in the 3rd – 8th grade are eligible to participate.

I understand that this small group reading intervention will occur for three weeks during normal classroom instruction, and during students’ regularly scheduled reading instruction. This is a daily event, with lessons lasting from 20 to 25 minutes. I expect that this project will end not later than May 15, 2009. Mr. Miller will contact and recruit our students and will collect data in Eufaula City Schools.

I understand that Mr. Miller will receive parental/guardian consent for all participants, and have confirmed that he has the cooperation of the classroom teachers. Mr. Miller has agreed to provide to my office a copy of all Auburn University IRB-approved, stamped consent documents before he recruits participants on campus. Any data collected by Mr. Miller will be kept confidential and will be stored in a locked filing cabinet in his AU advisor’s office, and / or stored electronically on a password protected computer. Mr. Miller has also agreed to provide to us a copy of the aggregate results from his study.

If the IRB has any concerns about the permission being granted by this letter, please contact me at 334-687-1100.

Sincerely,

Dr. Barry Sadler, Superintendent
Eufaula City Schools

APPENDIX B

SAMPLE LESSON PLANS (EXPLICIT AND BASAL)

Explicit Approach Comprehension Lesson

Lesson Plan

Selected Passages from
“Coyotes Rule”
McGraw Hill Reading Series
Grade 3-5

Review and Pre-teach Key Vocabulary

5 minutes

1. Review the key vocabulary found in the story.

1. Coyotes (their team’s name), Bears (opponent’s name), rule (the best team)
2. tend goal & outside the box (soccer terms), mood (to be in a mood)

Paragraph - Introduction of the Rule Statement / Correction Procedure 10 minutes

1. Who can tell me what the main idea is? The most important idea in a paragraph is called the main idea. Have a few students repeat this answer.

Authors often tell the main idea in the first or last sentence of a paragraph. All other sentences tell details that help you understand the main idea.

When you read ask yourself two questions to help you think about the main idea.

One question is: Who or what is this paragraph about? Have a few students repeat this question. **The other question is: What is the most important thing about the *who* or *what*?** Have a few students repeat the second question.

2. Now let’s read a new paragraph together, the fourth paragraph in the passage. As you read think about the two questions. What are the two questions to think about? Have students respond as a group, (Who or what is the paragraph about? What is the most important thing about the *who or what*?) Have the students read the fourth paragraph of “Coyotes Rule” chorally. If students need extra help with oral reading, you may wish to read the passage aloud once before students begin.

3. Let’s think about what we have read. Who or what is the paragraph about?

(Carlos, Justin, soccer, etc.) **What is the most important thing about the *who or the what*?** (Justin doesn’t play well, he is upset, etc.) **The last sentence tells us what the paragraph is about. It tells us that Justin is upset that Carlos doesn’t want him to play. What is the main idea of this paragraph?** (Justin is mad about not playing, etc.) If students mention details, list the detail that they mention on the board, but say, **That is a detail. It does not tell what the paragraph is mainly about.** When the student mentions the correct main idea, write the main idea on the board about the details and underline it. Point to the underlined main idea and say, **This is the main idea.** Point to the details and say, **These are details that tell us more about the main idea.**

4. Sometimes the main idea is stated in one sentence in the paragraph. Sometimes the main idea sentence can be the very first sentence in a paragraph. Sometimes the main idea sentence can be at the end of the paragraph. Where is the main idea sentence in this paragraph? (in the last sentence).

5. Readers can often tell the main idea from a selection's title. Make up a new title for the paragraph. Make sure your title gives the reader a clue to the main idea. Have a few students share their new titles with the group.

Passage - Demonstration of the Rule Statement / Multi-Step Procedure 10 Minutes

1. What questions should you ask yourself while you read to find the main idea? (Is the paragraph about a who or a what? What is the most important thing that we should know about the *who* or the *what*?) Reinforce correct answers, call on several students.

2. Have the students read the passage chorally. Follow along as we read. Remember to ask yourself who or what each paragraph is mostly about as you read.

3. After the students finish reading each paragraph, ask the following questions:

- Is this paragraph about a *who* – a person, or a *what* – a place or a thing?
- What is the most important thing we learn about the *who* / *what*?
- So what is the main idea of the paragraph?
- Restate the main idea in your own words?

4. Repeat this process with the remaining paragraphs. During the discussion of each paragraph, watch for some common mistakes. If students mention a detail, explain that it tells about the main idea but that it is not what the passage is mostly about.

5. Now have students restate the main idea of each paragraph. Then have students determine the main idea of the whole passage. Remind them to use the title as a clue to the main idea of the passage.

Independent Practice

5 Minutes

1. Pair students and have them work the independent practice sheet while you conduct the retells.

You and your partner are going to re-read this paragraph. The first person reads aloud while the other one listens. The first person then tells the other one what they think the main idea is in their own words. Now the second person reads aloud while the first person listens. The second person then tells the other one what they think the main idea is in their own words. After that, each student will write their answers on their paper.

Independent Practice Sheet
“Coyotes Rule”

Name: _____

Date: _____

Carlos thought about the time Justin kicked the ball the wrong way and scored for the other team. “It’s true,” he said. “You aren’t a very good player Justin. Maybe you can keep score, or something.” Justin just stomped away angrily.

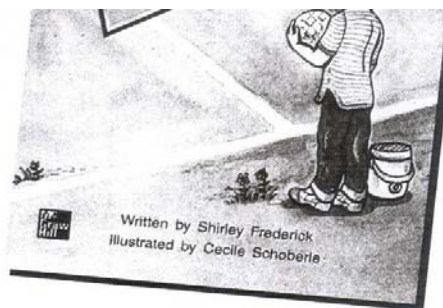
Write what you think the main idea is:

Main Idea: _____

Basal Lesson Plan

Coyotes Rule!

- ✓ Variant Vowels /ü/
- ✓ Summarize
- ✓ Instructional Vocabulary:
coaches, field, score, stretches, throws, touch



Guided Reading

PREVIEW AND PREDICT As children look at the title and the illustrations, ask them to predict what the story will be about.

SET PURPOSES Have children write sentences describing why they want to read *Coyotes Rule!*

READ THE BOOK Use questions like the following as children read or after they have read the story independently.

Page 2: Find a word with the /ü/ sound. (*school*) How is the /ü/ sound spelled in this word? (*oo*) *Phonics and Decoding*

Page 6: What did Justin tell his sister when she asked him about soccer? (He said he didn't want to play.) What happened just before Justin met his sister on the way home from school? (He wasn't picked for the team.) *Sequence of Events*

Page 7: Find the word *coach*. What does a coach do? Try to use the word *coaches* in a sentence. *Instructional Vocabulary*

Page 16: What would you say the story *Coyotes Rule!* was about? *Summarize*

Page 16: How were the Coyotes doing at the beginning of the second half of the game? (They were winning.) What was happening in the game at the end of the first half? (Neither team scored, but the Coyotes were less tired than the Bears.) *Sequence of Events*

RETURN TO PREDICTIONS AND PURPOSES Discuss children's predictions and purposes for reading. Did they find out what they wanted to know?

LITERARY RESPONSE Discuss these questions:

- Is it more important to win the game or to have fun playing it?
- How do you think it feels not to be picked for a team?
- Also see the story questions and activity in *Coyotes Rule!*

See the  **Phonics CD-ROM** for practice with the /ü/ sound.

APPENDIX C
STORY RETELL FORM

Retell Scoring Form
"Coyotes Rule"

Please tell me all about what you just read. Try to tell me everything you can. Begin.

Begin transcribing. If the student does not say anything for 3 seconds say,

Listen while I read some of the passage, read the prompt, Try to tell me everything you can.

Prompt: **Carlos thought about the time Justin kicked the ball the wrong way and scored for the other team. "It's true," he said. "You aren't a very good player Justin. Maybe you can keep score, or something." Justin just stomped away angrily.**

This prompt can be used only once, and if the student does not say anything or gets off track for 5 seconds say **Stop**

Scoring Rubric:

2 points student response – Student mentioned many of the main ideas of the paragraphs and the passage as a whole.

1 point student response – Student mentions the main idea of the passage as a whole with little mention of supporting main ideas.

0 point student response – no response or unrelated response.

Student: _____

Score: _____

Date: _____

Teacher: _____

Group: _____

Approach used for the lesson: Explicit or Basal

APPENDIX D

UNIT TESTS

Unit Test
TS-5 through TS-8
Grades 6-8

Name: _____

Date: _____

“Detective Mantis?” a soft voice called out. It was Ms. Honey Bee. “What is she doing here?” he thought. “At your service, Ms. Bee,” Mantis said, scratching his jaw. “My goodness!” said Ms. Bee. “I didn’t see you there! The buzz is that your skills of blending in anywhere are the best. Now I see that I have come to the right place.” Mantis asked, “What can I do for you?” Ms. Bee said, “There’s been a serious crime against me, and I need you to find the pest who did it.”

1. Who or what is this paragraph mainly about?

- The buzzing sound bees make
- Honey
- Bee and Mantis

2. What is the main idea of this paragraph?

- Bee has a very soft voice
- Bee needs Mantis to find the criminal
- Bee and Mantis are insects

Once upon a time, in a city far away, there was a band that loved to play jazz. Everyone in the band was a fine musician. More than anything, these guys liked jazz. Most folks had forgotten about jazz. But the band rented a club. And every night the band played for the people who hadn’t forgotten.

3. Who or what is this paragraph mainly about?

- Cities
- A jazz band
- Musical Instruments

4. What is the main idea of this paragraph?

- The band loved to play jazz for people
- They traveled a long way to get to the city
- People who play instruments are called musicians

The next day John's family was up at the crack of dawn. After breakfast, Mr. Adams clapped John's brother on the back. "Come on, Will," he said. "Time to get started." "I'm coming, too!" John shouted eagerly. "You stay here with Mother and the girls," Will said. "You're too little to help." John looked away. He felt very unhappy.

5. Who or what is this paragraph mainly about?

- John, Will, and their Dad
- Sunrise
- Mother

6. What is the main idea of this paragraph?

- Their mother likes to cook
- They eat breakfast every morning
- John was sad that he could not go to work with Will

Jane rolled her eyes. "What do you plan to do with them?" she asked. They're completely able to do anything humans can do," Bill answered. "Right now I'm sending them to the Soap "N" Suds to do some laundry." "By themselves?" she asked, looking worried. "Sure," said Bill. "They'll be fine!"

7. Who or what is this paragraph mainly about?

- Laundry
- Bill and his robots
- Soap

8. What is the main idea of this paragraph?

- Soap often times makes lots of suds
- Bill believed the robots would be fine at the laundry
- It takes quarters to do the laundry

John was watching a wall that had started to lean. Suddenly the wall began to fall over. "Look out!" John screamed. He rushed forward and pushed Will out of the way. Will fell on the ground with John on top of him. The wall had just missed them. Everyone rushed over. Father helped John to his feet. He hugged him tightly.

Will got up and shook John's hand. "You saved the day, John," he said. "I'm sure grateful for your help." He thought a moment and added, "Maybe we could find something for you to do."

9. What is the main idea of this passage?

- John and Will got into a fight
- You have to stand the walls up first before the roof
- John showed Will that he could help

Just then Bill came to the table. He saw the people leaving. He saw the waitress doing something odd with the chairs. "They must be closing," Bill told the robots. He threw some money down on the table. "Let's stop by the supermarket," he said. "We're out of club soda."

The supermarket was crowded. Bill left the robots in the produce section so they wouldn't get lost. "Wait here," he said. The robots looked at the scales. Then they looked at all the fruits and vegetables. "*Weight here,*" said Skwobot. "Understood." The robots got right to work. They moved quickly. It was actually amazing how much of the produce they were able to weigh before Bill came back!

10. What is the main idea of this passage?

- The robots did not understand some words very well
- Both fruits and vegetables can be called produce
- The supermarket was very busy

APPENDIX E
MAINTENANCE MEASURE

**Maintenance Measure
Grades 6-8**

Name: _____

Date: _____

I am a little nervous. I know the journey will be long and difficult. But I am ready and excited. I have hoped for many years to ride beside my father. Taking the journey makes me feel grown up.

11. Who or what is this paragraph mainly about?

- A boy and a journey
- His father
- Camels

12. What is the main idea of this paragraph?

- The journey will be long, and dangerous
- The boy feels grown up and excited to go on the journey
- His father makes the journey all the time

Joe watched as the band members went home one by one. Soon he was left alone in the Club. So he shut off the lights and started to leave. As he went out the door, he saw a shooting star flash across the sky. Joe closed his eyes and made a wish. He wished the show could go on.

13. Who or what is this paragraph mainly about?

- Stars
- Lights
- Joe

14. What is the main idea of this paragraph?

- Joe wants the show to continue
- Joe closes the club every night
- The band members leave all at once

The aunt was very angry. But she pretended to be calm. “I will help you prepare the skin,” she told the boy. But as she scraped and cleaned the skin, she whispered to it, “When he bites you with his knife, you must jump and bite him back.” When the boy began to cut the skin for lines, suddenly the seal skin snapped across the boy’s face. When he opened his eyes, he could no longer see!

15. Who or what is this paragraph mainly about?

- Scraping and cleaning
- A boy and his mean aunt
- Seals

16. What is the main idea of this paragraph?

- You have to keep your knife sharp
- Cleaning seal skin is tough work
- The aunt helped to blind the boy

“What’s that sound you were making?” asked Ellie. “It sounds like you have a motor inside you.” “That’s called purring,” said Maggie. “It’s how we communicate. Bobby likes the sound of it, so he pets us even more. It makes him so relaxed that he falls asleep, and then we really have some fun when he is sleeping.”

17. Who or what is this paragraph mainly about?

- Purring
- Motors
- Communication

18. What is the main idea of this paragraph?

- Purring puts Bobby to sleep, then the cats can play
- It is hard to communicate with your pets
- Purring is loud

By the next day, Vanessa and Malik had four new people to help. "This is great!" said Malik. Vanessa suddenly looked worried. "We can't do this," she said. "Mom won't let us go all these places alone." Tammie said, "I'll help you. I'm with you all day anyway. Now, let's get rolling!" Vanessa and Malik were eager to start. First they went to the library to return Mrs. Treekle's heavy books. Then at the post office they mailed a package for Mr. Mills. They also bought stamps for Mrs. Evans. Finally, they did Mr. Collins's grocery shopping.

When Mom got home from work, she asked, "How did it go?" Malik said, "Hard work makes you tired." He yawned and stretched his arms towards the ceiling. Then the phone rang and Mom answered it. "Kids!" she said. "Mrs. Green wants you to come up and see her after supper." "Oh, maybe she needs something," said Vanessa. "Special delivery, here we come!" said Malik.

19. What is the main idea of this passage?

- The kids like helping and making special deliveries for people
- Libraries have many heavy books in them
- The grocery store is far away

On a ledge on top of Giant Rock, Mama Wolf stood straight and still, listening carefully. "Niko! Soo!" yelled Lobo. "You have to be quiet," Mama hushed Lobo. "I hear some children who might be lost." "We know, Mama," said Lakota. "That's why we came to get our sisters, so we can watch those kids walk around in circles!" said Lakota, "We heard them say that wolves might eat them up." His brother and sisters laughed. "All right, that's enough," said Mama. "We must help the children find their way home."

20. What is the main idea of this passage?

- Sometimes people walk in circles when they are lost
- Wolves have extremely good hearing
- The wolves didn't want to hurt them, they wanted to help

APPENDIX F
BEHAVIORAL OBSERVATION CHECKLIST

On / Off Task Observation Form

Observer: _____ Teacher: _____ Lesson: _____ Date: _____

Initial Five (5) Minute Interval		10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	
	Student A (1 min.)							/6
	Pause (1 min.)							
	Student B (1 min.)							/6
	Pause (1 Min.)							
	Student C (1 min.)							/6
	Total							
Percentage On Task								%
Medial Five (5) Minute Interval		10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	
	Student A (1 min.)							/6
	Pause (1 min.)							
	Student B (1 min.)							/6
	Pause (1 Min.)							
	Student C (1 min.)							/6
	Total							
Percentage On Task								%
Final Five (5) Minute Interval		10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	10 Seconds	
	Student A (1 min.)							/6
	Pause (1 min.)							
	Student B (1 min.)							/6
	Pause (1 Min.)							
	Student C (1 min.)							/6
	Total							
Percentage On Task								%

APPENDIX G
STUDENT SATISFACTION SURVEY

Student Satisfaction Survey
Directions

1) Distribute the surveys to the participants.

2) Begin by reading the following directions to the participants exactly as they are written:

I would like to know how you felt about being in this reading group. Please do your best to answer these questions honestly. It is important that you tell exactly how you feel. I will now read each question aloud. When I read a question you can mark agree, which has a happy face under it ... don't know, which has a straight face under it ... or disagree, which has a sad face under it. Are there any questions about what to mark?

Now let's begin. Listen carefully as I read each statement, then mark the response that best matches how you feel about the statement I just read. Remember to mark agree, don't know, or disagree.

3) Now read each question and response choice.

4) After the survey is complete read the following:

Great job ... thanks for answering our questions.

5) As you collect the surveys, please be sure to note if the group you administered it to was a "basal" or "explicit" group. When you have collected all the surveys from the group please circle "basal" or "explicit" on each one so that they may be sorted later.

1. I liked being in this reading group.	Agree ☺	Don't know ☹	Disagree ☹
2. I think I am a better reader since I have been in this group.	Agree ☺	Don't know ☹	Disagree ☹
3. I would want to be in this group again.	Agree ☺	Don't know ☹	Disagree ☹
4. I think other students would want to be in this group.	Agree ☺	Don't know ☹	Disagree ☹

Group: **Basal** **Explicit**

Date: _____

APPENDIX H
FIDELITY OBSERVATION CHECKLISTS

Observation Form for Fidelity of Implementation

Observer: _____ Teacher: _____ Lesson: _____ Date: _____

Basal Teaching Behaviors	YES	NO
Teacher began lesson on time.		
Teacher's materials were organized.		
Teacher begins lesson with high interest activity.		
Teacher discusses purpose of the lesson.		
Teacher activates prior knowledge.		
Teacher leads a summary discussion after the lesson.		
Teacher provides the students with follow-up activities.		
Teacher monitors student behavior.		
Teacher's pacing was appropriate.		
Teacher praised students' performance		
Total	/10	/10
Percentage		

Observation Form for Fidelity of Implementation

Observer: _____ Teacher: _____ Lesson: _____ Date: _____

Explicit Teaching Behaviors	YES	NO
Teacher began lesson on time.		
Teacher's materials were organized.		
Teacher followed the scripting.		
Teacher modeled the procedures.		
Teacher led the students through procedure.		
Teacher allowed for student practice.		
Teacher assessed the students.		
Teacher utilized correction procedures.		
Teacher's pacing was appropriate.		
Teacher praised students' performance		
Total	/10	/10
Percentage		