CHAPTER 1

Introduction

Recently, there has been increased interest in yet another tool used to aid children who have been diagnosed with reading difficulties. This “new tool” is actually a re-purposing of an old idea: of color being used to create a more dynamic focus on the page when reading. For years, teachers realized that colored chalk on a dark board not only made the information that was being offered more interesting, but more noticeable as well (Irlen, 1991). Color adds realism to the visual, making it a more concrete representation of the object (Moore & Dwyer, 1991, 1994), and the use of colored chalks and colored paper was found to be easier on the eye and more appealing to the reader. Much has been done in the way of researching this technique over the last sixty years, and the conclusion of most research remains the same: colors, when used in different combinations, aid learners in reading and comprehension (Dwyer & Moore, 1991; Rickelman, 1990). Because people see differently, receive light differently within the eye itself, and cognitively define colors differently, an individual’s perception of what they see is different, and it has become quite obvious that some colors soothe the eye while others create an irritable palette for the eye, enhancing or deterring the individual’s focus on the task at hand (Tyrell, Holland, Dennis, & Wilkins, 1995). These colors are as different as the individual, but overall, there are a series of color combinations that are consistently useful to a larger group of people.

A colored overlay is a sheet of colored Mylar or acetate, much like a clear book cover, that has been tinted with specific colors and an anti-reflective coating to make reading easier through the color for persons with reading difficulties. These sheets are
used in a half-sheet or whole-sheet format, depending on the size of the page of text. The color of the templates has been researched aggressively. Blues, reds, yellows, greens, grays, and rose colors are the most popular with young children (LeCluyse, 1993) and these colors have been translated into a commercially packaged colored overlay system now being used (Irlen Institute, 1983; National Research Studies Institute, 1995). Recently, documentation has surfaced to indicate this tool is being used in European and Australian school systems to aid students with reading difficulties, but as of yet, has been unproven as to its effectiveness in the United States (Robinson, 1987, 1990).

Colored overlays have been used in a variety of ways and for a variety of studies. Repeated techniques include observations on timed readings while students use the overlays, as well as testing content and comprehension for these students. The literature produces a remarkable argument for the use of colored overlays when used in reading instruction for children with dyslexic problems, visual acuity problems, and various other reading difficulties (Iovino, 1998). Children with no discernable reading problems were unaffected in any way by the use of color overlays in similar research studies (Tyrell et al., 1995).

A great deal of the research that has been done with colored overlays is quantitative in nature. Data have been acquired with the use of reading acuity tests, reading comprehension tests, eye exams performed by skilled optomologic experts, and by observation and interaction with students of varied age and reading abilities. There has been little in the way of long-term studies done with these students; most of the research has been conducted in experimental settings, or by administering tests that reveal specific quantitative information in a set time frame established prior to the
experiment. While pre-testing and post-testing has occurred in some of the research, it is unclear as to whether a more long-term (longer than 3 weeks) assessment has been done with any of the subjects in the research found. While these evaluations and assessments are important, it seems equally important to conduct research within a natural cycle of time (one semester) focusing on these students while observing their continued use of the colored overlays, the changes that have may taken place with their use, and the students’ reading ability, both in acuity and comprehension (Wilkins, Jeanes, Pumlrey, & Laskier, 1996). Additional research supports the idea that younger children (grades 2-4) respond more positively to the colored overlays than children of higher grades (grades 5-8), which may have more learned coping mechanisms than the younger children (Donovan, 1995). It is for this reason that young children are of particular interest in this type of study.

Field dependence is the lack of ability to extract individual words, pictures, or symbols from the larger subset of a page, or visual representation at hand (Huang & Chao, 2000). When field dependence is apparent, the students suffering this disability have an incredibly hard time focusing on words upon a page, or iconic symbolism upon a sign or directional form (Moore, 2000). Recently, it has been suggested that colored overlays may be used to counteract this field dependency issue, and the reasoning behind its worth may be very similar to that of the dyslexic research with the overlays as well (Chmielewski, 1998).

Finally, the research indicates that many of the maladies associated with reading education of young children and older persons alike are due to the function (or lack thereof) of the eye. Because of this, it is of interest to note the basic physiologic function of the human eye in regard to the process of reading, how reading disabilities can prohibit
strong reading skills, and ultimately, how disabilities can prohibit strong lifetime learning

skills.

CHAPTER 2
Literature Review

The following is a brief summary of the literature review. The literature review is organized in the following manner: an overview of reading disabilities, (e.g., dyslexia, and Scotopic Sensitivity Syndrome), primary findings of colored overlay research used in the treatment of reading disabilities, primary findings of field dependence research, and a synthesis of these, in order to better state research questions which will be supported by the available literature.

Reading Disabilities and Dyslexic Anomalies

When children begin to read, standardized techniques and methods are used to insure the highest optimal level of learning. Learning about letters, sounds, and the ability to process combinations into compound sounds and words are the very basic building blocks of reading. For some children, however, reading is a challenge from the onset. For them, letters do not look “normal” – they can be unclear, broken-lined, faded or crooked (Spafford & Grosser, 1996). The challenge of reading becomes arduous when the starting place is unequal for all students within a class. Many students stumble, trying to grasp the most basic of techniques, but failing in the ability to apply these techniques to the letters and words they have placed in front of them. This situation can sometimes be modified with corrective lenses given to the student, and the ability to read becomes easier. However, there are students with no visual acuity problems that still face insurmountable odds in the process of learning to read. Many create their own coping
mechanisms, either consciously or unconsciously, in an attempt to “keep up” - - and still, “keeping up” becomes a grueling task. The term for this type of problem is dyslexia – a well researched and broadly used term to describe a concrete set of characteristics of persons with reading difficulties.

Developmental dyslexia is a term meaning “faulty reading,” rather than the socially accepted definition of “lacking the capacity to read.” Oddly enough, there is still a considerable discrepancy in the use of the term dyslexia, and its scope is narrowed with need to suit differing opinions in the international arena (Sanders, 2001; Spafford & Grosser, 1996).

There are several accepted definitions of dyslexia, with one being of primary acceptance worldwide. This definition was developed by the International Dyslexia Association (IDA), an association created specifically for the study and research of dyslexia. It is defined in this manner:

Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterized by difficulties in single word decoding usually reflecting insufficient phonological processing abilities. These difficulties in single word decoding are often unexpected in relation to age and other cognitive and academic abilities; they are not the result of generalized developmental disability or sensory impairment. Dyslexia is manifested by variable difficulty with different forms of language, often including, in addition to problems in reading, a conspicuous
problem with acquiring proficiency in writing and spelling. (Sanders, 2001)

This definition provides a wide berth in understanding the characteristics and difficulties faced by dyslexic and reading-disabled persons. For the benefit of this research, the characteristics of the reading disabilities that are studied here are cumulatively known as dyslexia. It is important to note here that reading disabilities fall under a broader category defined as learning disabilities which actually accounts for approximately 5.25% of the total number of children who experience some type of learning disorder, and of that, better than 50% (2.625%) clearly exhibit dyslexic characteristics. Of the total 10.25% of disabilities of children in schools being served, the learning disabled comprise the largest category, followed by speech and language impairments (2.32%) (Sanders, 2001).

In a section of Sanders’ book (2001), the etiology of learning disabilities is discussed, and the major theories are given relevance here: genetic, innate, congenital, and constitutional. Because so many of the characteristics of reading disabilities can inherently begin in one of these four etiological categories, each is briefly addressed in an attempt to qualify their bases.

Genetic issues with regard to dyslexia are strongly debated issues. However, as with other learning disabilities, many can be traced to genetic elements. It is often not until the child is diagnosed with dyslexia, that a parent finally traces a diagnosis to his or her own struggles faced in their youth. It has also been found that many parents exhibit no similarity to the child’s learning disability, but find extended members of the family
struggling with the disability. Research has indicated that among dyslexic individuals, at least 50 percent of the cases could be hereditary (Pennington, 1987).

Innate disabilities are those founded in the gestational period of development, such as a chromosomal or genetic aberration. A great deal of study has gone into innate learning disabilities (such as those prevalent in Turner’s and Kleinfelter’s syndromes which lead to poor visual-perceptual, visual-spatial, and poor visual-motor abilities in females, while language disabilities are more prevalent in males suffering from the same disorder). No research is available to indicate this diagnosis is an origin of dyslexia.

Congenital issues cover a broad spectrum of incidents, including both innate and genetic issues. Used more broadly than either of these terms, however, congenital deals with those incidents that happen while the child is still in the womb; these include premature birth, anoxia, alcohol and drug abuse, smoking, etc. Studies have indicated that approximately 16.6 percent of children in at-risk pregnancies showed signs of learning disabilities, compared to a control group of 1.5 percent in healthy, non risk pregnancies (Sanders, 2001). Other factors have also been taken into consideration during the pregnancy period and statistical outcomes vary widely.

Constitutional issues are the final category of the etiology section. In this, all incidences external to the womb are taken into consideration when diagnosing learning and developmental disorders. Such instances of meningitis, trauma to head or neck, poisoning, poor nutrition, etc. are considered factors when assessing the learner (Sanders, 2001).

To these etiological statements of dyslexia are added the questions of vision impairment and visual acuity. When a person’s vision is impaired for any reason, reading
becomes a fundamentally challenging task; a basic understanding of the form and
function of the eye helps to create a stronger perception of the lack of physiological
ability that many face when reading. It is not simply they cannot read, it is that they are
not able to read on a basic level -- they do not see the same things that normal,
functioning eyes see. It is here the development and the function of the eye becomes
important to the research of reading disabilities.

The Eye

Two-thirds of the mind’s conscious attention is taken up by what the eyes see, and
two-thirds of all information stored in the brain has come in by vision – as pictures,
words, and other visual stimuli (Parker, 1994, 1999). The eye is a sense organ, much like
the ear, nose, or tongue. Its job is to receive information and convert that information
into electrical nerve signals, transcribed into the body’s “language.” These signals travel
to the brain via sensory nerves, and once received in the brain, are sorted, processed,
analyzed and interpreted. Each of the signals from each of the senses is dealt with in a
specialized center of the brain cortex, called the visual center.

The eyes provide a very detailed, constantly updated, three-dimensional color
view of the world as it is seen (Eyewitness Sight, 1997). When looking at an object, the
use of two eyes to judge distance is more accurate than with one. Each eye’s visual field
covers a slightly different area, and each eye sees an object from a slightly different
angle. The brain gets two different and overlapping views of the object, but combines it
so that the image is translated as only one object, in a clearer binocular image than either
of the singular monocular images can offer. The angles and surfaces combined with the
three-dimensionality of the image provide clues about how far away the object is in all actuality.

Depth perception and dimensionality are perceived in the same way that distance is -- from a cumulative translation of binocular images seen. What makes images appear dimensional is taken specifically from the translation that the visual center receives, processes and then outputs. Those persons with depth perception problems are most likely dealing with a form of binocular occlusion – that which is “slightly off center” in the melding of the two monocular images into the single, binocular image. This type of depth perception deficit can occur when the eyes either over-converges the images or, alternatively, under-converges the images; any misalignment of the two images will result in problems with this type of perception problem (D’Alonzo, 1991). Even when a person writes, his or her eyes are constantly scanning the size, shape, and position of the letter that is being written. Adjustments and perceptions are taken into consideration as the process proceeds, even if it is not consciously realized. If a person closes his or her eyes and continues to write, the lack of visual feedback and necessary perceptive responses will yield writing that may be messy or even unintelligible.

Depth perception, color-blindness, field dependence/independence, and reading disabilities are characteristically interrelated on at least one point. Although gender is not an issue with depth perception problems, field dependence/ independence, reading disabilities, and even color-blindness have a higher incidence rate of affecting males (Moore, 2000; Spafford & Grosser, 1996; West & Sherman, 2001; Winner, et al., 2001). Studies indicate that there are other equally biased characteristics that may or may not become apparent in future research of this topic. Such studies as correlational attributes to
IQ, left-handedness, early or difficult births, asthma sufferers, etc. may prove to avail further information to researchers in completely understanding these characteristics of learners.

A multitude of research has been done on the characteristics of the learner who exhibits dyslexic tendencies (e.g., Fischer, Hartnegg, & Mokler, 2000; Spafford & Grosser, 1996). These characteristics include, but are not limited to: a delayed language development, verbal deficits, visual anomalies, oral reading miscues, sequencing difficulties, familial history, written expressive language deficits, spelling errors, reduced reading rates, memory deficits, erratic eye or head movement, and other, less definitive characteristics. In spite of this list of dyslexic characteristics, researchers are still struggling to find causal effect for this disorder.

Reading

When young children are beginning to read, words are broken down into the smallest meaningful units of the language in order to recognize how words sound, how they are spelled, and what they mean. By learning these small units of a word, students will gain a basis of understanding for a larger group of words and hopefully, will gain a comprehension and a sense of correct spelling and pronunciation from them as well. Researchers in reading disabilities (Arnbak & Elbro, 2000; Carlisle, 1995; Elbro, 1990) have long been searching for methods to help students gain a better comprehension of words, while looking closely at the many attributes of the learners as they are engaged in phonetic studies.

Reading research contends that having knowledge of the morphological relationship between words may ease reading and spelling of complex words for the
learner. It is known that there is a relationship between morphological awareness and the predictors of reading ability. Research done on kindergarten pupils showed a distinct relationship between the comprehension of morphological awareness cues to reading ability in the second grade (Carlisle, 1995). Research has been done to substantiate that a general lag in linguistic awareness results in poor readers, and that often, the subjects falls behind their peers in several different language and reading skills (Jeanes, 1997).

Elbro’s previous research (1990, in Arnbak & Elbro, 2000) with dyslexics resulted in finding a positive correlation between the morphological awareness of the participants and their ability to decode words. It appears only the most reflective readers use the morphological cues to gain comprehension. The indication then, is that students with specialized morphological awareness are better equipped to sound out and focus on the meaning of the word that they are trying to read (Elbro, 2000).

Because they are unable to easily discern words, dyslexic individuals often create a new word or gloss over the actual word they are trying to read in an attempt to “fill the space” with something that will make sense, and hope their guess is a strong one. By breaking a word down into this minute unit, the dyslexic individual may be able to better evaluate the words on the page, and gain comprehension from the root word. The research that Arnbak and Elbro (2000) have done creates a strong argument for reading instructors to re-evaluate the method and the reinforcement and feedback provided at this level of reading instruction for those members with reading disabilities.

West (1997a) indicates that language groups with standardized spelling/writing techniques show less dyslexia in the population, though small amounts of dyslexia are apparent in all populations. The observation that all brains are acting similarly indicates
that dyslexia is also considerate of a biological issue. Both West and Sherman (2001) conclude that the brain reacts to a combination of both biological and environmental issues in a specific environment. There is now research being done with MRI sequencing images while phonological tasks are being carried out. The results are still being evaluated, but the process has been shown to be different for dyslexic individuals than non-dyslexic individuals (West, 1997b).

Not all reading disabilities are characteristic of dyslexia, though much of the dyslexic characteristics are exhibited in reading disabled persons (West & Sherman, 2001). The connection is still speculative, although other researchers have echoed this statement (Irlen, 1983; Winner et al., 2001). It is believed that dyslexia is a product of both environment and biology. The function and the anatomy of the brain of the dyslexic individual develop slightly different in-vitro, as substantiated by Galaburda and Geshwind’s (1989) autopsy work reported (as cited in West, 1997a). Their research indicated that the hemispheres of the brain were much more similar than those of the non-dyslexic individual, in as much as there was a greater propensity for equal sized hemispheres in dyslexics than in non-dyslexic individuals. This was further substantiated in a paper by Galaburda (1989), giving greater detail into the physiological attributes of the brain, the fetal development of the brain, the cognitive functioning therein, and the outcomes due to the differences. Galaburda maintains that these physiological differences are the basis for the dyslexic brain.

Some inquiry has been conducted regarding the compensatory abilities that dyslexia may generate. West (1997a) studies the “talents” and visual spatial abilities of subjects that exhibit dyslexic tendencies. His research focuses on dyslexics that have
found ways to learn and excel in a world that overwhelmingly exists by a code of the written language. Historically, West investigates many talented artisans from various disciplines that worked with their dyslexic talents to manage and maintain their lives. Such people as Leonardo DaVinci and Albert Einstein were known for their unorthodox methods of note taking and word manipulations, and for their brilliant visions of invention. Many dyslexics exhibit the ability to read upside down as quickly as they can read right side up; each of these characteristics indicate to researchers that the processing within the brain of the dyslexic individual is different – the pathways that are crossed and the translations that are made by the visual center of the brain are clearly different than other “normal translations” made by the visual center (Winner et al., 2000).

Dyslexic individuals may benefit from innovations in computer technologies because of the visual nature of the medium. West and Sherman (2001) state that many such individuals are finding their niche in learning and instruction through leveraging the visual aspects of such tools. However, they continue, it is imperative for all learners to understand that words are made up of sounds, and if sounds cannot be put together, there is a high risk for reading disabilities in the future. Early learning path intervention is necessary, where kindergarten should be using phonic-based learning to instruct strong phoneme and morpheme understanding in learning (Cooper, 2000).

The propensity for visual-spatial abilities among dyslexic individuals has been a topic of research and study for the last decade. Although it is generally accepted that dyslexic individuals have a great difficulty with word tasks and number tasks, little research has been done to substantiate and clarify what the exact difficulties are. In three separate and distinct studies within one research project, the overwhelming results were
that dyslexics were not significantly more visually-spatially adapted than non-dyslexics. Winner et al. (2001) carried out research with both male and female dyslexics, as well as dyslexics and non-dyslexics, creating a strong control based in both gender and ability. Results indicated that gender of the dyslexic individual had no significance on their ability in any of the tasks set before them, and that these individuals were actually less able to complete many visual-spatial tasks than those participants not exhibiting dyslexic tendencies. Winner et al. found there was no overall gain in visual-spatial ability with dyslexic individuals across the many tasks given, and acknowledged that perhaps the dyslexic individuals tested were indicative of an over-representation of professions in spatial-talents. This was due in part, because verbal professions are often closed to them, because of other, unspecified difficulties in language skills.

Colored Overlays

Colored overlay research has been conducted over the last 25 years, with much of the data being inconclusive quantitatively, due to the fact the research could not duplicate the findings between two populations (Cowart et al., 1998; Farber, 1994; Mason, 1999; Robinson et al., 1987). The persistence of this research, and the desire of the researchers to not discount this tool entirely, indicates the need for additional investigation; a more descriptively approached method may yield strong research data to compliment the quantitative data currently available.

Comprehension and reading ability is most often evaluated by standard examinations administered by the school system on an individual basis (Swartz & Klein, 1997). These tests create a benchmark for remediation and calibration purposes. Without strong reading comprehension, reading ability and retention of new information is often
marginal, so it becomes of primary importance to focus on ways of gaining in both aspects for all readers. Overlays used with students exhibiting reading disabilities often result in significant changes in both reading ability and comprehension in short term studies. Studies by Anderson (1996) and Mason (1999) share these conclusions, but report their results as inconclusive due to the limited period of time given to the study.

In studies lasting longer than three months, two researchers concluded that significant changes resulted with extended use of the overlays. For Farber (1994), the lengthened study promoted the results of significance, although the degree to which the significance was apparent was unsubstantiated. Whiting (1988) furthered his inquiry of this study by monitoring the physio-cognitive tasks that often trouble this select group of individuals. Such things as visual tasks, spelling errors, and handwriting skills were monitored, in an attempt to address issues of significant change here as well. The outcome, reported by Whiting, indicated that with prolonged use, the colored overlays aided in these other tasks as well. The explanation of these changes in other tasks (visual, handwriting) is less definite, although several hypotheses have been offered.

One such explanation for overall significance stated in Whiting’s (1988) research is the participant’s self-reported change in their reading abilities. Expectancy by the participant has been shown to be effective in a large number of research results. Here, 55% of the participants surveyed that felt they had gained some sense of relief with the tinted lenses, while only 9% of the study group felt they gained no relief whatsoever. Due to the nature of the study group (all part of a voluntary clinical enrollment, therefore self-motivated to find help), the results may be skewed, if only slightly. More concrete study
results (empirical results from standardized testing) show that most of the study group did show improvement in the main concern areas of the disability.

Studies conducted on specificity of the color of overlays used yielded some interesting results. While many students tested chose the pastel spectrum of overlays (blue, gray, rose), there was a smaller, but no less adamant group of participants that chose the brighter spectrum of colors (gold or purple) in overlays to help them when focusing in reading. Studies by Gregg (1988) as well as Thomas (1994) focused on change in reading ability and comprehension when participants used the carefully chosen colored overlays routinely as an aid for reading. Those students that indicated the strongest change when using a colored overlay also showed the greatest significance in the reading and comprehension tests that followed. Studies conducted by Gregg (1989) substantiated previous findings.

There are three specific areas of concern when inquiring as to the validity of the color overlay. They include: 1) light filtration, 2) contrast improvement, and 3) placebo effect. These concerns have been challenged in studies both in the United States, and abroad. Fitzgerald (1989) conducted a thorough review of the literature dealing with dyslexia and tinted lenses, with these specific concerns in mind. Some researchers see the lenses as a more “natural” progression to all things visual, while others see the lenses as an overuse of the colored filter, and indicate that use of the color in reading is sufficient to help most students. While Fitzgerald concluded that there was no evidence to indicate that the colored lenses changed the visual aptitude of the subjects, her conclusions did corroborate that lenses may work in certain arenas to filter light wavelengths, and because of this may improve clarity of vision when looking at black
print on white pages (stark contrast). Fitzgerald also gives rise to the availability of the filters working as placebo effect.

A theory known as “expectation of improvement” is a powerful therapeutic factor within research. This theory is one that many doctors instill in patients that are suffering from debilitating diseases (Snyder, 1994), and is grounded in knowing the power of positive thinking can be an influential factor in treatment. In the field of reading disabilities, just as in physical or mental disabilities, this factor remains. The attitudes held by the teachers as well as the children may be responsible for higher rates of success when engaging in new, and often unorthodox, treatments or procedures.

Several studies testing the expectancy of the overlays were conducted with reading disabled students. Though the perspective of expectancy would be weighted differently between these two studies, the studies yielded similar results. In Hillman (1987), the researcher was concerned with the expectancy of the examiner to the colored overlay used in the study. By manipulating the subject pool to include examiners that exuded both enthusiastic and skeptical expectancies for the overlay, Hillman was able to clinically observe the outcomes in two reading levels of students. The differential instruction had no demonstrative effect on the learners, although students self-reported positive effects in using the colored overlays. Clayton (1987) found similar results. Nolander (1998) also researched expectancy, but in this instance, the expectancy was placed on the learner while using colored overlays. Samples of both “hopeful” and “non-hopeful” dyslexics and non-dyslexics were observed in this study. The results yielded high outcomes of “hopefulness” and high reports of comfort when using the colored
overlays, and after intervention with colored overlays and “hopeful” results, 40% of the subject pool of dyslexic subjects no longer met the testing criteria for dyslexia.

When dealing with children that exhibit Scotopic Sensitivity Syndrome (SSS) and dyslexia, figure/ground contrast brightness is another topic of concern (Irlen, 1983). With this condition, visual problems occur due to a perceived exceptional brightness of the background (paper) in contrast to the lesser seen, less defined figure (words or shapes) printed on paper. For some students with reading disabilities, the font size and shape of the words on a paper may be as attributable to clear vision as the color of the background paper. In the limited research available on figure/ground contrast with reading disabilities, it was observed that the contrast of the image to paper could be mildly irritating or completely debilitating depending on the reader, their disabilities, and the extenuating factors of their visual perception of color and lines. Though not often studied in the early 1980’s, one researcher, Meares (1980), published a thorough discussion of the literature available at the time on font and color of paper.

In the specific research of Meares (1980), reading disabled participants were specifically unable to focus on the black lettering of words on a page, and instead focused (unconsciously) on the paper behind the words. In some instances with this type of disability, the children merely viewed “black squiggly lines swimming in a sea of white” (the printed text on white paper, in large print, suitable for early readers). Meares used a modified gray overlay in her work with children exhibiting SSS (something previously tested for and acknowledged at this clinic), and found the subtle change in color helpful for these children to gain focus on the lettering instead of the background coloration. She
reported the children’s responses in her research, giving validity to their reactions and descriptions of change in their reading capabilities.

This study secured an opportunity for further studies on the characteristics of text necessary for learners with disabilities, and two decades of work have been done since then to bear out the most facilitative information on text for normal readers as well as for readers with disabilities (Meares, 1980). Through interviewing and replicating/testing, the larger, bolder print of double spaced sentences found within an early reader’s book, this text caused much more trouble for the participants in this study than the smaller single spaced fonts of more mature books had caused. Less white area equaled less irritation, and therefore the participants reported better focus on the “word” rather than the space around it.

Figure/ground contrast problems with regard to font and paper color are much the same problem that extremely field dependent individuals suffer from. The inability to disembed letters from a page causes a total halt to the learning process, much like the closing of a door. The question remains of the similarities of reading disabilities to the characteristics of field dependence: both disabilities are characteristically troublesome in disembedding object parts from the whole; both disabilities tend to have little research to answer questions raised, and within the research available, little has been done to suggest anyone look at this characteristic along side of the limitations of field dependence in children with specific reading disabilities.

The research of Meares (1980) was recorded in a qualitative manner, the first of which was found in the literature concerning colored overlays. Her research gave the participants voice in their disability, brought validity to the often-undiagnosed
characteristics of reading disabilities, and afforded the academic sector the chance to understand, perhaps for the first time, the depth of the challenge facing these children.

The term “visual processing” can be defined as “difficulty in discriminating printed symbols on a white page, distortion of letters and words, restriction of the visual field and problems in focusing on print for any length of time” (Whiting, 1985). Visual processing is also responsible for the visual “images” created in the mind from written word or verbal descriptions of an incident. Often students exhibiting reading disability characteristics have no problem reading the words on a page, but have a dynamic problem translating those words into visual images in order to better comprehend what was just read. Visual processing then becomes equally important in the process of reading, because without it, the process of reading will have no meaning, and learning will not occur. Studies have been conducted with colored overlays, addressing the specific issue of visual processing and visual efficiency.

One such study by Robinson and Miles (1987) was conducted to observe if the color improved visual processing. The subjects were tested using the Irlen Differential Perceptual Schedule (a test developed by Irlen, but not widely published), and were then asked to use the colored lenses for a period of one month. Testing again after that period of time resulted in increases that were found to be consistent in reading rate, reading duration, reading comprehension, and reading ability. The participants also reported improved visual efficiency with the use of colored lenses. Additional studies were conducted with the same process, focusing on word and symbol matching instead of reading tasks. This type of test was used because many of the subjects with reading disabilities have pronounced deficits in reading words on command, and often have very
little command of the language at their disposal for definition or clarification, in spite of
the fact that their knowledge of the subject is superior (Sander, 2001, pg. 86). This study
yielded similar results to the previous studies conducted – that, although word
recognition may have been unaffected by the colored overlays, visual processing of that
word or symbol was increased with use.

Research indicates that at least 50 percent of all cases of dyslexia are hereditary in
nature (Sanders, 2001, pg. 36). This type of research is always fascinating, and although
no two familial learners necessarily exhibit the same reading dyslexic characteristics,
many of the characteristics are problematically tied to the heredity factor. While one
sibling may exhibit no indication of reading problem, another sibling may have gross
phonological or visual processing problems that keep him from breaking the barrier down
to learning to read. To compound the frustration further, both siblings may be of superior
intelligence, have no visual acuity problems, and may have become adept at learning
aurally, thereby hiding the larger problems until educational tasks become greater than
they can process, and the quality of their work fails.

A study concerned with the reading ability and visual acuity of two brothers
exhibiting characteristic dyslexic tendencies was conducted by Hannell, Gole, Dibden,
Rooney, Pidgeon and McGlinchey (1989). In this study, two familial case studies were
given tinted lenses and tinted overlays to aid with distinct reading disabilities. The
participants were studied to measure not only difference in reading abilities, but also
visual acuity, figure/ground perception, and level of distortion and fragmentation in print.
Prior research from this group of researchers indicated the color of an overlay has a great
deal to do with the visual depth ability for participants, and both participants were given
blue-gray lenses after a large spectrum of color lenses were tried. The researchers noted a jerky head movement pattern being displayed by the subjects when they were trying to read unaided; this head jerking ceased with the aid of the overlays in reading. Comprehension was minimal at best when observed without the use of the lenses or overlays. Tests were conducted in handwriting, word accuracy and symbol accuracy of the subjects also. Both noted remarkable improvements with the colored overlays, and had similar responses when looking through the colored lenses. Whether with the lenses or with the colored overlay, the boys noted that the words stopped moving on the page — they actually perceived continuous lines, which previously, they did not visualize. One boy remarked that the words were “furry.” It was also noted that in figure/ground perception, the boys had false responses repeatedly without colored intervention, while with the colored lenses/overlays, showed little to no false responses. This lends further credence to Meares’ (1980) research in figure/ground perception, and once again, raises the question of field dependence characteristics being exhibited by these two familial cases.

Abnormality of iconic memory is yet another characteristic of some reading disabilities, specifically dyslexia, and SSS. Iconic memory, also known as visual sensory memory, is recognized in the process of reading by a three-step process: 1) the registration in visual sensory (iconic) memory of images of words scanned, 2) the analysis in short-term memory of the meaning of the words and sentences, and 3) the storage of the memory in long-term memory (Riding & Pugh, 1977). This division of steps is similar to the cognitive model of learning process (registration of stimuli as sensory memory, attention/perception of stimuli into working memory, and
encoding/organizing stimuli into long term memory) (Eggen & Kauchak, 2001). In reading disabled learners, one or more of these processes is not occurring for one reason or another, although those reasons are still quite speculative. In Hannell et al. (1989), the dyslexic patients that were brothers tested higher in retaining information in short-term memory with the aid of tinted lenses. This was proposed because the colors have been shown to slow the transmission of impulses along the primary pathway, from the retinal to the occipital cortex. Researchers of iconic memory and reading disabilities (Riding & Pugh, 1977), hypothesize that it is possible that colored overlays/lenses may act as a modulator for transmission of information from the environment to the visual cortex, allowing a better match of visual input with information from the language channel. These findings, however, may be useful only to a small, select group of dyslexic individuals, and may not have relevance to the larger group of persons suffering from more generalized dyslexic traits.

As in the Riding and Pugh hypothesis stated, the two brothers observed in the study by Hannell et al. (1989) benefited by the colored overlays in just such a manner. By giving relief enough to see the written word, to comprehend the statements written, and to find some sense of efficacy in reading for their own selves, the visual processing ability overall was advanced.

Evaluation concerning the effectiveness of the color overlay has been done in many of the studies. Several studies examining the effectiveness of the overlay within the context of several environments and with several mediating factors, including length of use and specific physiologic and cognitive conditions of the learners were specifically of interest, although the final outcome in most of the research indicate that prolonged use,
regardless of physiologic and cognitive conditions, does increase the reading ability and comprehension for troubled readers.

Ascertaining the effectiveness of tinted lenses for dyslexic children has taken precedence with many ophthalmologic researchers concerned with prolonged use of detrimental tools for dyslexic individuals. A study conducted by Gole, Dibden, Pearson, Pidgeon, Mann, Rice, et al. (1989), practicing ophthalmologists, optometrists and educational researchers yielded information that, regardless of the efficacy and efficiency of the colored lenses, less than half of the subject pool were consistently wearing the tinted lenses throughout the study. The subjects complained of usual dyslexic complaints: difficulty in reading the printed word, acute sensitivity to glare while reading, print swimming or blurring while reading. However, even with the lenses providing positive results to the participants, the participants complained of abandoning the tinted lenses due to peer pressure. Wearing tinted lenses in public made them feel ostracized from the rest of the learner community to which they belonged. This study concluded that only 44% of all participants wore the lenses on a usual basis, and that the results promoted stronger abilities in reading and comprehension for the participants, but that with that ability came at the expense of ostracizing the learners.

Further studies on effectiveness conducted with the use of colored overlays (in lieu of tinted lenses), yielded strikingly different results. In Hubbell (1983), the effectiveness of colored transparencies on generalized reading disabilities, using reading accuracy and reading rate as indicators of effectiveness was researched. The effect was not statistically significant for reading accuracy or rate, in spite of the continued self-reported improvement by the subjects. These subjects ranged in age from 13-18; this is
considered a much older group than often thought of as most receptive to intervention in reading disabilities. Hubbell speculates that younger subjects (prior to age 12) may respond more significantly to the same method of study. Recommendations from this research echoed the need for a longer-testing period that could reflect a more consistent response and that, as in Keogh’s (1974) (as cited in Hubbell, 1983) review of visual training research, a relationship may exist between visual perceptions and reading ability. Other research done on older learners (e.g., Bower, 1985) resulted in similar statistics, although she indicated that a test for shape discrimination might have proved useful for those subjects whose reading skills were very low. By using a shape discrimination test, researchers could better quantify the participant’s visual clarity gains with the use of colored overlays. It could also lend some credence to the field dependence issue of reading disabilities, as well as substantiate iconic memory tests that Riding and Pugh reported in 1977.

Controversy over the topic of color overlay use has created a strongly divided field of educators worldwide. One of the most publicized controversies in the research journals has to do with a study conducted by Stanley (1987), a Professor of Psychology at the University of Melbourne. In his study, Stanley attempts to outline the status of colored overlay use in the field of dyslexia research for the time period of the 1980s. His research takes into consideration several other studies that are reviewed elsewhere in this literature (Irlen, 1981, 1983), and summarizes many of the trends that were current in reading research at that time.

Many of Irlen’s statements concerning Scotopic Sensitivity Syndrome (SSS) are regarded as over-simplifications of the characteristics of reading disabilities, or,
alternatively, hold little credence to any research that has been duplicated in the attempt to pinpoint exactly what comprises the characteristics of SSS. Throughout his study, Stanley and his cohorts maintained that color may or may not play a role in the aid of reading disability; other researchers echoed this sentiment (Howell & Stanley, 1988). Stanley et al. conducted research that indicated an immediate effect from the use of colored overlays, but did not indicate there was any sustained effect. Another study group within his research resulted in no immediate effects in change, but a sustained effect with continued use. Robinson and Miles (1987) suggested similar results (although only in the preliminary study of the longitudinal research) and were published in Robinson and Conway (1990).

Stanley contended that they were unable to find significant and consistent data to uphold the color overlay theory, but also acknowledged that motivational effects produced may be the discerning factor in the various and widely differentiating results examined throughout the literature. Another team of researchers (Rosner & Rosner, 1988) expressed their opinion of the colored overlay use as “merely a panacea” and placed in the “wishful thinking” category of helpfulness for subjects suffering with reading difficulties. They concluded that there is no dyslexic problem in the ranks of young learners, merely educational problems – that there is a “mismatch between a student’s unique traits, abilities and knowledge level, and the instructional methods and conditions encountered in the classroom (Rosner & Rosner, 1988). They go further in stating that by a) changing the child (helping him to acquire traits to learn under standard conditions), or b) changing the instructional conditions to accommodate the child’s existing traits, will in effect, remedy the “dyslexic condition.” Of course, good general
health and a stable emotional state will help to alleviate the reading difficulties the subjects with dyslexia are facing, according to the researchers’ conclusions. They feel they have given plenty of reason to submit that colored overlays are merely another “panacea” for a problem that is not truly a disability, and that by attempting each new “cure-all,” the parents and the practitioners are being harmful to the children (Reeves, 1988; Rosner & Rosner, 1987, 1988). It was not clearly stated anywhere in this paper whether the authors attempted to address the complex characteristics of specific reading disabilities, Scotopic Sensitivity Syndrome, or dyslexia. It is clearly stated, however, that the holistic methods they advocate may work for a select few, but that many will be left untreated and frustrated, leaving the task of reading to other, more “stable” persons.

Field Dependence

Field dependence-independence is an expression of an individual’s cognitive psychological structure to separate contextual information (Witkin & Goodenough, 1981). It has become a popular topic of research in recent years, primarily because it is so evident in everyday life, and the manifestations of it are often quite real and visible, as well as the availability of the framework of theory that makes it a psychological entity that can be considered with other, often extremely varied psychological or physiological characteristics which may expand some understanding of learning characteristics or learning disabilities.

Field dependence has been studied in many different and interesting combinations, perceptually, and physiologically. Gender, intelligence, and extroversion-introversion traits have all been studied and identified as to having foundation in the composition of the field dependent/independent person. Although studies vary in their
outcomes, these traits are generally accepted as being part of the definition of field dependent/independent. Various, but similar studies conclude that field independence is associated with a higher percentage of strong academic performance, and that the highest percentage of performance came from the male populace of field independent students (Paramo & Tinajero, 1990). It has also been researched and concluded that field independent learners are less extroverted in social situations; these learners are more independent and often respond to analytical questions in a nonlinear fashion, as opposed to the field dependent learners that need a stronger schema built in order to follow through with a process (Fine, 1991; McRae & Young, 1990).

Field-independent individuals tend to perceive their surroundings in a differentiating and analytical manner, while field dependent persons are likely to approach their environment in a non-discerning way, often as a singular entity (Huang & Chao, 2000; Moore, 1985). It is also noted when problem solving, the field independent person can analyze the information and break it into parts, while the field dependent person has a greater difficulty doing so (Witkin & Goodenough, 1981). Field dependent persons prefer to learn in a more information-rich learning environment than field dependent persons (Huang & Chao, 2000). Clearly, there are some discerning differences in the two styles of learners, although both have their positive attributes, and neither is considered a negative trait.

Researchers have proven that field independence is positively correlated with learning ability (Huang & Chao, 2000), but others speculate gender is a factor in determining the level of field dependence as well. Huang and Chao (2000) conducted studies recently, which give rise to the question of this long held theory, finding no
significant difference between genders, when subjects were administered the Group Embedded Figures Test (GEFT) (Witkin, Oltman, & Raskin, 1971 as per Jonassen, 1996). In this study, three issues were at hand: 1) gender, 2) field dependence/independence, and 3) learning disabilities.

Learning disabilities are defined as “heterogeneous disorders that are manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities” (Huang & Chao, 2000). Learning-disabled students are identified in a scholastic environment by administering comprehensive assessment tests that address the comprehension difficulties of the various physiological senses stated above. This definition is inclusive in its coverage of disabilities, and shares little about the cognitive styles of learning of these learning disabled persons. Specifically, reading disabilities are often visual challenges left untreated (American Optometric Association, 1997). If instructors recognize specific visual acuity problems, remediation with lenses can aid the student in reading comprehension as well as reading accuracy (Kantrowitz & Underwood, 1999). However, there is a group of students who see clearly, but cannot view the written word in a normal fashion. It becomes a difficult task to view a single word on a page from the entirety of the sentence or the page itself.

Field dependent learners lack the ability to analyze pieces of an object, or in some cases, individual words from a written page (Witkin & Goodenough, 1981). Studies have shown that for field dependent students, color coded images (as opposed to Black & White) helped to maximize the information processing capabilities, perhaps because colored illustrations help to make relevant cues more obvious to the field dependent learner (Dwyer & Moore, 1991; Moore & Dwyer, 1991). It then leads to question, would
color overlays assist field dependent learners in separating out the contextual images and words of the page? Studies indicate colored overlays may be able to serve field dependency in just this way. Rollock (1992) suggests that field dependence/independence is more of a consideration of learning ability than style. In his research, he found that field dependent students scored significantly higher on follow up quizzes of material than did the field independent students, when the information was presented in a way that required social sensitivity and awareness. Further research on this topic brings to light the fact that much of the research with field dependent/independent persons may be aided by using alternative methods of learning: interactive learning, highly organized structure, and active learning methods (Rollock, 1992).

Several facets of field dependence have recently become of interest to the educational research arena. Such things as grammaticity, common node linkage, and ability on recall are among these interests.

Cowart, Petersen and Fowler (1998) studied the dependence/independence issues of students with respect to grammaticity. Results indicated that instead of base differences between field dependent/independent persons with regard to reading, these persons actually process information differently, even in word recognition and comprehension. The field de/independent construct, which considers the cognitive style differences between the two, are in fact, an individual’s concept of the boundary between self and non-self (and their perception of each). Cowart, et al. state that typically, field dependent persons are less able to deal with ambiguity (Goodenough, 1976); this linguistic research has focused on the ability to disambiguate sentences and grammatical judgments.
The participants in the Cowart et al. (1998) study were those persons who, after taking the embedded figures test, were found not to be field neutral. There were significant differences between the field independent and field-dependent groups, having to do with the interaction between antecedent location and field dependence in the subjects’ analysis. There was also an overall difference in the way people judged the removed antecedent case; field dependent learners were consistently higher scorers in the antecedent cases. Results indicate that instead of a higher response rate or a more complete rate of response, the field independent and field dependent persons are simply exhibiting completely different processing of the information on grammaticity.

Because very few studies have focused on field dependence and reading ability specifically, there is little to substantiate Cowart’s research thus far. However, research involving the presence of learning by schema building does gain some reliability to the theory that field dependent learners process language and words as differently as they do images and icons. One such study, by Chmielewski, Dansereau and Moreland (1998), investigated the use of common region in node-link displays with field dependent/independent individuals. Node-link displays are those displays or iconic images that are organizational in nature, are becoming more established in learning environments as a useful visual tool to iterate the function of connectivity within theories, ideas, and concepts being taught. “Common region” refers to the phenomena in which objects that share the same perceptually defined area are seen as grouped together (Chmielewski, et al.), not unlike schema creation in the cognitive process of learning. By addressing this type of display option with field dependent/independent learners,
much can be gained concerning the efforts of cognitive process, order, and retention for these two different types of learners.

In the Chmielewski, et al. (1998) study, two groups were created from a university population. The students were given information in the form of two versions of maps, one containing a whole map with all information available in one place (cities, callouts of major thoroughfares, etc.) and enclosed by a rectangle, and the other, a stacked map, where each subsection of a map was on separate paper, stacked and stapled together as a packet, but not enclosed in a single unit. These students were given time to study the maps, and then asked to perform free recall on the maps and the information therein. The students were asked to create their own node-link display map, using only their memory to guide them.

Following this task, the students were given the GEFT (Oltman, Raskin, & Witkin, 1971). Forty-eight hours later, the subjects were returned to the study room, and a free-recall test was once again administered; afterward, the subjects were dismissed. The students were given two scores in the final analysis – correct mention of a site, and accuracy. These scores were also correlated to the GEFT test results. The field-dependent individuals scored higher with the whole-map presentation, while the field-independent individuals scored higher with the stacked, less structured map presentation. Reasons for this correlate with the research findings that field-dependent subjects require a more complete sense of structure in order to ascertain the connection between information, while the field-independent subjects actually do worse when given the same criteria base for learning. It is speculated in the Chmielewski (1998) research that any reduced cognitive effort in the whole-map condition may be accounted for the relatively
poor performance of the field-independent individuals. The researchers further state the relatively low level of cognitive effort required to segment and organize the enclosed-node display (whole map) may have caused the field-independent participant to recall less from these maps, when asked to do so. If speculation carries this theory through to other cognitive processes, it would then give voice to the idea that higher order tasks involving structure and verbal ability for field-independent learners would be more difficult when certain structural demands are placed on them when writing. This proves to not be so for field-dependent learners with the same constraints (Glynn, Britton, Muth, & Dogan, 1982 as cited in Chmielewski, et al., 1998). It would seem that level of cognitive effort plays a roll in how well the field-dependent/ independent subject learns, and what schema is constructed (or already is in place) for their use in memory and comprehension of the information has a great bearing on the ways in which instruction can be created for various learners, in all facets of study.

Summary of Literature

While some information is available regarding the enhancement of images with color serving both dyslexic persons (Irlen, 1991) and field dependent persons (Moore & Dwyer, 1991), little has been found to qualitatively or descriptively research these separate, but not entirely different disabilities. In both cases, visual acuity and visual-perception becomes an issue almost immediately in the dialogue, when the researcher is attempting to find a technique that may help the student cope with their specific disability.

It is becoming more and more difficult to discern between the terms ‘reading disabilities’ in the broadest sense, ‘dyslexia’ in the clinical sense, and ‘Scotopic
Sensitivity Syndrome’ in the familiar sense as set down by Helen Irlen (1983). All of these terms note that a reading problem is inherent, but not clearly defined. Each of these terms indicate a sensitivity to light is apparent, that continued or maintained reading ability and reading comprehension is difficult, and that for the most part, these individuals are not suffering from a visual acuity problem that could be changed or aided with the use of optical lenses (Spafford & Grosser, 1996).

Much of the research on reading disabilities, colored overlays, and field dependence has been conducted with older individuals, well after the formative years of learning and early reading skills have been taught. Overall, the research indicates use of high school, college age and adult subjects as a basis for understanding disabilities; these students are often desperate for help, have been previously identified and have the greatest need, and consequently the greatest hope to find an answer to the disability. Children, especially young children, often experience the Hawthorne effect (Moore, 2000) in research, or have less than an adequate command of the language to accurately describe the situation that befalls them when they are trying to read. Descriptive words such as “blurry” or “fuzzy” (Meares, 1980) are less indicative to the researcher than a much more decisive “out of focus, to the point of confusion with the other words surrounding it” (Robinson, 1987) would be to the same researcher. Even the most recent studies are carried out on older subjects, learners that have struggled for years with their disabilities and specific characteristics, rather than targeting new learners without learned coping mechanisms in place.

In the literature focusing on field dependence, much has been done to quantify the characteristics of field dependent/independent learners (Huang & Chao, 2000; Fischer, et
al., 2000), although few techniques have been researched that may be able to alter perception for these subjects to give them greater access to the printed word or iconic images. Moore and Dwyer (1991) make a strong argument for color enhancement of images to aid the field dependent learner; it may be of consideration to try overlays to enhance total images for these subjects as well.

New research is surfacing that connects dyslexic disabilities and visual-spatial disabilities; terms such as “talents” and “gifts” (Davis, 1994; West, 1997; West & Sherman, 2001) are being coined by these researchers as they realize compensatory abilities of those persons that deal with dyslexic or visual-spatial disabilities on a daily basis. It has not become apparent in the literature if these share similar characteristics to field dependence/independence. Further studies by these researchers may substantiate the characteristics of these learners as well as indicate that the cognitive style of field dependence/independence is characteristically apparent.

The eye is the gateway receptor for our lives. Much of what we see and experience is stored according to the translation of the images through the visual cortex of the brain, and much of what we retain is attached to other, vibrant images that were received in the same manner. To acknowledge a disability that alters that reception of these images may be to also state that those things we receive through these disabilities are altered from the normal perception of such. If an image can be changed or disembedded for an individual by the use of a learning tool as simple as a color overlay, images and text could be made available to that individual, perhaps for the first time. When using quantitative data collection in a study of learners experiencing this change in perception or change in visual ability through the use of a learning tool, the data will only
reflect statistically significant differences, numerical equivalences and shortcomings. The process of using the tool itself will be lost within the methodological factors of accessing the data.

By observing the process of colored overlay use in children experiencing reading disabilities and exhibiting field dependence within the environment of the classroom atmosphere, a complete picture of the process can be gained. The children using the overlays can be observed and recorded in a descriptive manner, while giving the statements the children make about the overlays credence and efficacy by recording views, opinions, and statements as qualitative data. Current literature in this field is sorely lacking in a written record of the process of using colored overlays, and the methods by which colored overlays are used effectively with reading disabilities and field dependency specifically. The present research pool indicates a need for dynamic reactions and outcomes recorded from the participants using the overlays, in an attempt to better indicate the use, the outcomes, and the expectancy of this tool in these reading disabilities.
CHAPTER 3

Methodology

Rationale for Study

Reading is a fundamental skill that children are introduced to at the very onset of any formal education. Because without strong skills in reading, children often fall behind in studies and eventually lose the opportunity to catch up to their classmates, the push for early literacy intervention has become a primary task in the first, second, and third grade elementary school classrooms in the United States (Swartz & Klein, 1997). Children of this age are just beginning to read, and have not yet been taught coping mechanisms for reading difficulties they may encounter. In these early grades, students are still excited learners and the written word has not been found to be a cause of anxiety or frustration (Jeanes, 1997). It has been found that students in grades four and five already exhibit strong coping mechanisms with their difficulties in reading, and at this point, the difficulties are often exacerbated, as children start to struggle in earnest with all types of learning, no longer only reading (Jeanes, 1997). Early grades have therefore been targeted as the best place to look at reading and comprehension problems, and the methods used to aid these young learners.

Much of the research on colored overlays has focused on changes in reading comprehension, fluency, and information retention that the students gain as a result of reading with overlays (Evans et al., 1994; Robinson, 1987; Tyrell, 1995). These changes, identified by quantified data, often fail to explain how the process of colored overlays promotes these changes and why (or why not) the tool may be useful for students with specific reading disabilities or field dependence.
The following areas are the focus of this study:

1) What are Title I students’ experiences with and feelings towards the introduction of colored overlays when learning to read?

2) In what ways do the students’ experiences and feelings change over time with the continued use of the colored overlays?

3) How do students describe the difference between reading with the overlays and reading without the overlays?

4) What are the implications of colored overlay use for the students within the classroom?

5) What advantages/difficulties do teachers experience when they have students using colored overlays?

By asking these questions, and in this manner, a great deal of qualitative information has been revealed; also, limited quantitative data has been acquired which has served to triangulate much of the data.

Research Design

One method of qualitative research is the descriptive study. Here, variables that exist or have already occurred are selected and observed as the entirety of the study, and are given rich description and depth from various accounts of data gained, including observation, interview, and historical records. Descriptive studies are useful in presenting very basic information about areas of education where little research has been conducted (Merriam, 1998). Further, it has been stated that one of the greatest concerns of descriptive research is the development of generalization (Best & Kahn, 1989). In this study, the process of colored overlay use has been described and interpreted in rich text
and vivid dialogue with the use of descriptive attributes. By using rich, thick description, typicality of the program or process, and by using more than one case study individual, the research has gained in validity as well as generalizability (Merriam, 1998). By employing the technique of purposeful sampling (Merriam, 1998), the participant group was chosen to be small and specifically designated to serve the research. In this way, the participants of this study have the highest value to the audience at which this study is directed and by selecting out participants that exhibit all of the characteristics being observed, the study has gained the highest yield of discovery and understanding of these characteristics for young learners.

Quantitative studies have been defined as a numerical method of describing observations of materials or characteristics. When a defined portion of the material or characteristic is used as a standard for measuring any sample, a valid and precise method of data description can be provided in this manner (Best & Kahn, 1989). However, quantitative data do not represent all observations of a research well, specifically those that cannot be nominally structured, or for those points of data that have a less clear outcome, such as feelings, attitudes and attributes of a situation or process. Qualitative studies have the opportunity to gather similar information as quantitative studies, but without the quantification and numerical assignment to the responses. Instead, events rich in description and triangulation of data from other sources aid to yield a strong baseline of understanding of the data gained by these methods (Lawrence-Lightfoot & Davis, 1997).

In this study, observations and interviews have been conducted, and field notes and historical documents have been collected and reviewed in an attempt to gain the
greatest degree of accuracy for the descriptive process of studying colored overlays in the use of reading disabilities and field dependency. By collecting this much data from various situations within the school environs, the opportunity to gain the greatest insight into the processes and attitudes of the participants has been achieved. It has also offered an opportunity to better understand the implications of stronger teaching tools and offered access of research to teachers that are dedicated to teaching, but lack the information and tools otherwise not supported by the school systems.

**Participants.** Children enrolled in the Title I program at a local elementary school were the primary source of participants. These students, having been tested using the school-administered, state-standardized tests for pre-reading and reading abilities, had been selected to receive additional support by qualified reading specialists, in an attempt to bridge the gap between their current reading abilities and other children’s abilities of the same age. These children (approximate numbers can range from 25 per elementary school grade to somewhat higher numbers in the early years of kindergarten and first grade) were given the opportunity for additional support throughout the school year, and were tested each end of year with similar state-approved tests, to indicate whether they were in need of follow up aid, or if the intervention of additional support has helped enough for them to return to the standard reading class with their cohorts.

Teachers working with the Title I program have also been active participants of this study. Seven teachers and several resource teachers at this school have interacted with the students chosen for this study; it was therefore of great value and information to interview each of them, gaining a better understanding of the process from a professional aspect, and recording their attitudes in regard to the process as a whole. It is important to
note there, that of the four students being individually observed and interviewed, there was, on several occasions, more than one teacher serving more than one of the students at any point in the process. Because this was the case, the additional instructors were also given the opportunity through interview to reinforce the data gathered on both the colored overlays and field dependency issues.

**Selection.** Participants for this study were taken from a group of students who were initially tested and recommended for Title I by the instructors and administrators at the elementary school. These Title I students had also been given the Children’s Embedded Figures Test (Witkin, Oltman, Raskin & Karp, 1971) by the researcher. This instrument was created to test field dependency/independency in young children, and has given the researcher an indication of the level of the student’s cognitive characteristic of field dependence, field independence, or field neutrality. By using this test as an indicator of field dependence within the sample population, a purposeful sampling has taken place among the participants, specifically characterizing the criteria of field dependent learners that are being given Title I support. This method of sampling was done to gain the most information-rich case subjects based on criteria that was pre-determined. In this case, the criteria were elementary grade students who also tested field dependent and were enrolled in the Title I program for additional support in reading.

**Procedure.** Students in a local area elementary school have been used as the subject pool in this research. These students have been tested using state-supported, standardized tests, which indicated reading and comprehension problems (Jeanes, 1997). The students that were eligible for the Title I reading program have created the pool of students that were used. Secondarily, these students were then given the Children
Embedded Figures Test (Witkin, Oltman, Raskin & Karp, 1971), which resulted in data representing the level of field dependency/field independency/field neutrality of the student. These characteristics were noted, and students that exhibited field dependency became viable study participants.

Initial Internal Review Board (IRB) permission for this study was gained for a research class case study, which was conducted at a local elementary school the previous year. An extension was gained for an additional calendar year with the submittal of all necessary information to the IRB Review Panel. A copy of the consent form can be found in Appendix A. Additionally, formal permission was gained from the county school board’s administrative office. The letter submitted to gain formal permissions can be found in Appendix A also.

Consent forms were given to all members of the study (students, teachers, parents, administration) (see Appendix B), to verify and acknowledge their understanding of the research that would be conducted, and to explain their right to leave the research at any time without question, should they desire to do so. These forms clearly indicated the scope of the research, the participant’s role in the research, and the intended use of the research data.

Beginning in late October, observations were conducted of the children as they interacted with the reading specialist at the school. These children were pulled out of their regular classrooms and taken into a reading room to work with the reading specialist (Swartz & Klein, 1997; VT, personal communication, September 15, 2001). Observations and interviews have taken place in this room by the researcher. In the beginning of the observation period, it was also advantageous to observe these children in their daily
classroom routine as well. By observing the participants in the whole class situation, information regarding their social skills, interrelatedness to other students, and peer interaction helped to establish their situational attitudes in class about school and learning (Davis-Lazarus & Callahan, 2000). It was also of interest to observe the students using colored overlays in whole class settings, paying particular attention to their perceptions of other students with regard to their “special treatment” with the colored overlays. Gole, et al. (1989) observed that more than 50% of the students he studied ceased using the colored overlays and tinted lenses due to peer pressure. Special care was taken to observe peer interest in the students as they used the colored overlays, in an attempt to understand what part peer pressure and self-efficacy plays in the very young learner.

By being part of the classroom as an observer only, the children soon grew used to the additional presence, and it was no longer an issue to have someone in their classroom observing them. Being part of the classroom in this manner, the children acclimated to the regular observations being carried out and initiated interaction between the children and the observer soon after. The observer acted as an aide in reading while the children used the colored overlays. The participants had chosen their color overlay preference earlier, and a short, informal conversation with each student as to why the color was chosen was conducted. In the past, colored overlays had been used as one of many tools to help children with difficulty in reading, and this tool was made available to the students to use throughout this school year. Twelve complete packs of overlays, consisting of eight overlays of various colors in each pack, were donated to the school for use. This gave the schoolteachers the opportunity to work with the overlays in more than one area at a time, and the children were able to acquire an overlay to use, regardless of
the classroom they were reading in at the time. Specifically, the teachers in the first, second, third and fourth grade classrooms were given overlay packs, as well as the reading and the special services resource teacher. The length of this study ran approximately four months, with data collection completed in late February 2002.

Historical running records for students who are of reading age had been used as an additional foundation of understanding reading difficulties, and were valuable benchmarks for further reading comprehension tests as the semester continues. Running records are a type of evaluative instrument used to give reading specialists a point of origin or benchmark level used in understanding the student’s reading level, comprehension, and clarity developed in conjunction with the Reading Recovery Program (Clay, 1993). This tool was administered often during traditional classroom reading time, and gave a stronger indication of changes and problems that students were experiencing. By using these three tools to substantiate the foundation point of the individual’s level of reading, the progress made or not made for each student was recorded.

Both formal, audio-taped interviews and numerous informal interviews throughout the project were conducted with all participants. Interviews were conducted with each child, posing questions and interacting with the children while they used the colored overlays in reading. Questions ranging from self-efficacy to frustration to hopefulness, as well as running records (which were done at the beginning of each semester and end of each semester, as per school system requirements) became helpful in triangulating any data showing progress (or lack thereof) from the use of colored
overlays. It was necessary to code the running records according to date and child, as well as whether an overlay was used during the testing period.

The interviews. Interviews were conducted with seven teachers, one administrator, and the four children participating in the study. These interviews were conducted according to an interview guide created by the researcher, and approved by members of the research committee. The questions targeted five separate research questions, as well as basic contextual information to help with triangulation of the data. Interview guides for each of these individuals can be found in Appendix C. Generalized questions were asked of all of the teachers, as well as a series of specific questions relating directly to the children that the teachers worked closely with.

Interview guides for the children in the study were also created by the researcher, and approved by members of the research committee. In addition to asking the children contextual information and research specific information, the children were also asked to participate in several word games and puzzles. Witkin, et al. (1971) states evidence that puzzles are often difficult for field dependent learners to do, and the word games aided in triangulating previously gained data concerning the children’s word building and recognition ability. Games and puzzles such as this are also useful to break up periods of more “traditional testing” periods, giving the children a chance to display other skills and reduce the opportunity for boredom or frustration to set in for them (West, 1997a). Additionally, they were asked to read both with and without the colored overlay. Finally, they were asked to draw several symbols that were briefly shown to them, as well as any other picture they wanted to draw.
These tactics were used for several reasons. Primarily, these children have a low attention span when questions are being asked directly to them; they were prone to lose focus after approximately five to six minutes of beginning a new task. In order to keep their focus, additional ways to gain information in seemingly unconventional methods were used; by asking them to read a group of letters in a word game, their strengths and weaknesses in letter recognition became apparent. The drawing portion of the interview was for two reasons; 1) to gain a sense of comfort with them, and 2) to have written documentation of their handwriting and drawing skills, something often poorly developed in children with reading challenges (Meares, 1980; Whiting 1983; Witkin, et al., 1971).

The puzzle used was a Triazzle©-like puzzle; subtle differences in the turtle body (the main object of the puzzle) was made to match only specific other turtle body images; it was of great interest to note that the children were not able to match the turtles together correctly consistently, due to the lack of opportunity to notice the subtle differences within the picture, perhaps because of the field-dependence characteristics that each of the children displayed (personal observations, February 2002) (Appendix D contains an image of these puzzle pieces). The puzzle was age appropriate for children six and older.

*The Children’s Embedded Figures Test.*

I administered the Children’s Embedded Figures Test (CEFT) personally, adhering to the guidelines set down in the Manual written by the test authors, Witkin, et al. (1971). The pictures, colorful and large, were of common items that children would recognize. The test began with a sampling of shapes – triangles and “house” shaped pieces, solidly outlined and brightly colored; these shapes were cut out and made available to Daniel to pick up and examine. Then, the shapes were put away, except for the single triangle that
the children would be asked to find embedded in simple pictures. Two trial pictures (P1-P2) [from CEFT, Witkin et al, 1971] were shown to the children, and a two-step process of examination began. First, the children identified the image, and then secondly, found the triangle that was embedded within the image. Scoring was done on a 0 or 1 basis – 0 for an incorrect answer, 1 for a correct answer. (The directions clearly state that changes in answers are counted as incorrect, if the participant does not locate the picture on the first attempt.)

Ives (1995) clearly states guidelines for interviewing participants, as well as methods for gaining more detailed responses with the use of probing questions, open-ended questions, and leading questions. By following protocol similar to this, and gaining a sense of direction for the questions from observational notes and interaction, the research questions of this project were addressed, both formally and informally. Although information for interviewing children was not readily available, techniques for creating survey questions and qualitative questions for groups of younger children were used (Bandura, 1993; Bandura, personal communication, 2001).

The researcher prepared all observations and transcripts of the interviews personally. “When transcribing on-site tapes, portraitists may be surprised to discover all that transpires beyond the active and absorbing co-construction of story.” (Lawrence-Lightfoot & Davis, 1997, p. 122). For this reason, the researcher did all transcriptions of the interviews. It is important to note voice changes, pauses, and character changes on the audio taped transcript, making the connection between those pauses and aural leads in response to an answer or question. A trained transcriber cannot be aware of or recognize indicators such as body language movement on a tape if he or she was not present at the
The greatest degree of accuracy of these transcripts will rely on the researcher transcribing them personally (Ives, 1995). The interviews were transcribed verbatim, in an attempt to record every facet of the interview for later analysis. In this way, the transcriptions include authentic voice of the participants and have gained the highest degree of clarity for the research (Ives, 1995; Lawrence-Lightfoot & Davis, 1997; Merriam, 1998).

**Timeline of research.** The following is a timeline of the research over a four-month period.

<table>
<thead>
<tr>
<th>Research Activity</th>
<th>Week</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two weeks:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole class observation (1st, 2nd, 3rd grade classroom)</td>
<td>5-9 November</td>
<td>Classroom observations</td>
</tr>
<tr>
<td>Whole class observation (1st, 2nd, 3rd grade classroom)</td>
<td>12-16 November</td>
<td>Classroom observations</td>
</tr>
<tr>
<td><strong>Three weeks:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group observation (Title I reading room)</td>
<td>19-21 November</td>
<td>Small group observations</td>
</tr>
<tr>
<td>Thanksgiving Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group observation (Title I reading room)</td>
<td>26-30 November</td>
<td>Small group observations</td>
</tr>
<tr>
<td>Small group observation (Title I reading room)</td>
<td>3-7 December</td>
<td>Small group observations</td>
</tr>
<tr>
<td><strong>Four weeks:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group observation (Title I reading room) participation and observations</td>
<td>10-14 December</td>
<td>Small group observations</td>
</tr>
<tr>
<td>Small group observation (Title I reading room) participation and observations</td>
<td>17-21 December</td>
<td>Small group observations</td>
</tr>
<tr>
<td>Christmas Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group observation (Title I reading room) participation and observations</td>
<td>7-11 January</td>
<td>Small group observations</td>
</tr>
<tr>
<td>Small group observation (Title I reading room) participation and observations</td>
<td>14-18 January</td>
<td>Small group observations</td>
</tr>
<tr>
<td><strong>Interviews</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small group O/P/I individual interviews - kids Classroom observations/interactions</td>
<td>21-25 January</td>
<td>Small group interaction/interviews</td>
</tr>
<tr>
<td>Small group O/P/I individual interviews - instructors Classroom observations/interactions</td>
<td>28-1 February</td>
<td>Small group interaction/interviews</td>
</tr>
<tr>
<td>Small group O/P/I individual interviews - findings/report/interactions Classroom observations/interactions</td>
<td>11-28 February</td>
<td>Small group interaction/interviews</td>
</tr>
</tbody>
</table>
**Focus of observations.** A colored overlay is a sheet of colored acetate, much like a clear book report cover that has been tinted with specific colors and an anti-reflective coating to make reading easier for persons with reading difficulties. These sheets are used in a half-sheet or whole-sheet format, depending on the size of the page of text.

The color of these templates has been researched aggressively. Blues, reds, yellows, and greens, grays and rose colors are the most popular with young children (LeCluyse, 1993) and these colors have been translated into a commercially packaged colored overlay system now being used. This device has recently been introduced in some school systems to aid students with reading difficulties, but as yet, its effectiveness has been unproven.

Educators work with a myriad of tools and applications when trying to engage young readers to learn; no one tool is a panacea, and while most educators echo this thought, they are also most often willing to try any tool that give a young learner an advantage in the difficult and often cumbersome task of reading (Swartz & Klein, 1997; Willis, 1999). This reasoning promoted the research done within this study. By conducting this research in a school system with students at risk in reading, an observable relationship between the participants, the tool, and the process of using this tool can be observed.

**Data Sources.** The data collected were most often descriptive in nature. By using observations, interviews, field notes, and historical data, a sense of understanding of the process the subjects have been engaged in while learning and using colored overlays were realized. These data have offered insight into the self-efficacy of the students.
(Bandura, 1993) that are learning a new task, as well as some insight to long-term accommodations of this new tool, and the acceptance of it as a standard aid in learning across curriculum for these students.

**Analysis.** Analysis of observational data (i.e., field notes, class notes, impromptu conversations with instructors and administrators) was done by a coding mechanism, seeking out and flagging those common terms, common links, and repetitious occurrences between all field notes. Several themes were searched throughout all cases, and commonalities were coded as well. Themes such as physiological attributes noticeable while reading, apparent initial reading abilities, duration of focus, sustaining focus, and ability changes while using the overlay were considered. Because the field notes were typed up each day following observations, there was the opportunity to code each new observational entry and establish a pattern of data; this pattern emerged consistently in much of the observations and interviews overall. Results were consolidated into coded text, and compared with interview notes from students, instructors, and administrators. Further synthesis of data from all collection points was coded in a similar manner.

The data from this research contributed to a more thorough sense of understanding of the similarities and differences between field dependence and reading disabilities. It also gave very cursory indication that children diagnosed as having reading disabilities and being characteristically field dependent, have some opportunities to establish modifications of reading ability with this tool implementation. And finally, this descriptive information may indicate a need to other researchers and educators to continue research in the use of colored overlays as a tool for young learners exhibiting
characteristics similar to those described here. Further investigation of the tool used in
different procedural techniques, monitored methodology, or long-term use has been
indicated as well.

No research has been found on this type of study or the use of colored overlays
with field dependent students, but by taking into consideration all factors pertaining to the
learning of new techniques (by way of observation, interview, field notes, and historical
data), the data creates a justification for incorporating colored overlay use into field
dependent learning techniques. Additional research to support the use of colored overlays
for reading disabilities (specifically, quantifiable data reinforcing the qualitative attributes
discussed here) would offer some justification for more Reading Recovery and Title I
professionals to adopt this type of technique as well.

**Dependability and consistency.** Expectations of the participants and the instructor
played an important role in the research of colored overlays used in this study. Findings
show that students with learning disabilities who received specialized reading instruction
expressed attitudes towards reading that equaled or excelled those expressed by low and
average non-disabled students (David-Lazarus & Callahan, 2000). Researchers have long
theorized, “the ultimate success of instruction is strongly effected by the reader’s
attitude” (Richek, List, & Learner, 1989, p. 51). It is also surmised that the research has
been affected by the teacher’s attitudes and expectations, especially those expressed
verbally to the students by the teacher. Novelty effects have played an initial role in
motivation and attitudes of the participants in this study; however, it has been observed
that novelty effects acted as a motivator in some reading situations with the subjects, but
once the novelty of the tool wore off, the motivational attitude was once again shifted to
the desire to read and the expectancy of the technique (Hubbell, 1983).

Merriam (1998) states, “In qualitative research, understanding is the primary
rationale for the investigation, the criteria for trusting the study are going to be different
than if discovery of a law or testing a hypothesis is the study’s objective” (Merriam,
1998, p. 200) Further stated, “What makes case study work ‘scientific’ is the observer’s
critical presence in the context of occurrence of phenomena, observation, hypothesis-
testing (by confrontation and disconfirmation), triangulation of participant’s perceptions,
this rationale for qualitative inquiry, this research has been enriched by the presence of
the “voice” of the students as well as the “voice” of the instructor while engaged in the
process of using the colored overlay tool.

It is necessary to also address the trustworthiness of this type of study, and one
must question what is to be learned from a group of four students studied in-depth
yielding qualitative data, as opposed to a larger group (n=20+) studied in a similar
fashion, yielding quantitative data. Much can be gained from hearing the participant’s
“voice,” acknowledging the perceptions of the subjects throughout the process, and by
recording their interpretations for others to review in regard to the process, regardless of
the size of the subject pool. Qualitative research is by no means intent on creating
experiments or yielding data that can be replicated, as is essential in quantitative data;
instead, qualitative data, collected in a concise and methodological manner, can be
duplicated to reveal additional results. Qualitative data is not interested in duplications;
the results for each study should be consistent with the data collected at each study, and
nothing more (Merriam, 1998). The final data in this study comments on the process of using colored overlays, for both the subjects and the instructor.

Data was collected for a period of four months. Because of this amount of time, a sense of the participant experience has become apparent, both in small group, and within the larger classroom atmosphere (Merriam, 1998). In shorter studies (Hubbell, 1983; Robinson & Miles, 1987), a stated limitation of the research was the lack of adequate time within the study for the students to gain a sense of comfort with the researcher. The participants were also unable to lose the awareness of the researcher as an intruder in their learning environ (Hubbell, 1983). Approximately three weeks into the case study by Willis (1999), the participants lost the need to acknowledge the observer, and it was noted that the students’ awareness of the researcher was kept at a minimum (only when she shuffled papers, or the tape in the tape recorder would snap off, did it bring the students back to a heightened sense of awareness). Likewise, it became commonplace for the students to work with the participant-observer without incidence after only a few weeks of her presence within the classroom (Willis, 1999). The specific role of the researcher, then, was primarily as a non-participant observer, and later on, as a participant observer working closely with the students while reading; by gaining a sense of comfort with each of the students through a participant-observer role, the children offered a more open response to any question that was asked of them. Regulation of behavior, and reactions to the observer were very real dynamics within the study, as the observer became the primary instrument of data collection. The extent to which an observer changes the dynamics of the environment or the situation cannot be dismissed; however,
by spending a longer period of time with these students in all areas of their studies, presence of the observer became less obvious over time and became more commonplace.

By utilizing field notes, participant-observer notes, and interview notes, copious amounts of information was gathered regarding the process and practice of using colored overlays within the classroom atmosphere. These types of data are different enough to give individualized information, and still offered the opportunity to triangulate the data. This data also offered a wealth of background information for the researcher from which further pertinent questions were extracted during interviews with each of the participants, the instructors, and further substantiated the information gathered.

Finally, it was important to create a standardized interview guide of questions, which were asked to all participants, in an attempt to be consistent with the questions. Consistency in questioning during interviews allowed the researcher to discover similarities and dissimilarities in the process, as well as in the thoughts, opinions, and responsiveness to the colored overlay by the students, instructors, and administrators (Ives, 1995; Merriam, 1998).

Ives (1995) suggests creating an interview guide that begins with “a generalistic attitude of the topic and becoming more specific by following the interviewee’s lead” (Ives, 1995, p. 50). Also, by reviewing the field notes, observations, and historical data gained on behalf of the participants, a complete interview guide was constructed that allowed the interviewer a secondary source of information on specific details of the process. It also offered an opportunity to strengthen the depth and breadth of the information that has been gathered in other viable forms, but not necessarily from one-on-one interviewing with the participants; such pieces of data gained as a result of
hallway conversations, e-mails, or statements made in general to the observer by a group, were then reiterated during the formal interview process. The interview questions were used as only a loosely structured guide for the interviewer; it was more important and rewarding to follow tangents offered by the interviewees during this process, in an attempt to gain a trustworthy and truthful point of view from the interviewers during the interview conversation. This tact resulted in very rich interactions during the interview process, and yielded information that supported many of the observations taken within the classrooms by the researcher.

**Limitations of the study.** “Qualitative researchers try to acknowledge and take into account their own biases as a method of dealing with them” (Bogdan & Biklen, 1998, pg. 32). It became necessary to address any biases the researcher had at the onset of this qualitative study, in an attempt to give the research the greatest opportunity for validation. By learning of researcher’s biases, one can understand the method and the path of the research, while also understanding that the perception of all research data is filtered through the most ardently used tool in qualitative research, the researcher (Merriam, 1998).

**Selection bias.** It was necessary to find an elementary school that was willing to work with the researcher on a four-month basis, allowing observations and interactions with the instructors as well as the students for this period of time. This time frame afforded the researcher the opportunity to gather the necessary data to complete the study proposed. In this geographic area, there is a very diverse population from which the participants are represented, as the area is a small town bordered by two universities.
This particular academic dynamic creates a diverse population of elementary students, coming from all over the world, and from all walks of life.

The instructors and administrators of this school system have been made aware of the technique of colored overlays previously, and have been experimenting with the overlays for some time within their school. To encounter a school system where the technique has been in place (thereby the introduction of overlays to the students has not been a variable of the study) and where the students have become comfortable with the tools and the technique was a fortuitous asset for the researcher. The county school board as well as the University (Appendix A) Review Board supported the study in this elementary school, and the administrators, instructors, and specialists had a vested interest in the outcome of the work, due to their previous interest.

There may very well be more ideal candidates who would yield more specific and dynamic information at another school outside of this area, but due to location, length of study, and number of visits within the school system, locality became a bias. Further, because the instructors and administrators were previously familiar with colored overlays, they also had some strong indicators of which students were the best candidates for study. The criteria of Title I status was easily met with the students at this school; Title I status has been given to any student referred to the school system as needing additional aid in reading, due to lags in reading ability and comprehension. At the beginning of the school term (August 2001), 20% of this particular elementary school was eligible for Title I aid. Of that 20% population, four students were selected for in-depth study.
Purposeful sampling had been used to create the participant selection, creating a selection bias in its own right. The subject group was small and specifically designated to serve the research (Merriam, 1998). In this way, participants of this study have had the highest value to the audience at which the research has been directed, and by selecting out subjects that exhibited all of the characteristics being observed, the study gave the highest yield of discovery and understanding of the characteristics of these young learners.

**Age of participants.** The age of the primary participants of this case study were quite young, and there existed a very real limitation in gaining thorough, well-explained answers to questions asked of them. Children aged six through eight years of age often offer a challenge in observing their social attitudes, learned behaviors, and overall interaction with others in the classroom because they are still establishing boundaries within the social structure, and are constantly testing their personal boundaries for independence (Cooper, 2000). Because children of this age often use a very limited vocabulary when describing images, situations, and ideas, it became necessary to prompt them with descriptive words or offer alternative ideas in order to reach the conclusionary account they may be trying to state. This was especially true during interviews between the observer and the students; caution was given to the interview question structure to leave each question open-ended and easily responsorial for even the youngest of the participants.

**Researcher bias.** A prior case study done by the researcher with older children in a local elementary school classroom (Willis, 1999) yielded the first indication to the researcher that further study was needed. Because of this work, the researcher was aware
of the type of environment that would suit the research prior to locating an acceptable situation within which to work.

Prior to the researcher’s proposal being accepted at this public elementary school, the administrator met with the researcher, other instructors, and school specialists, in an attempt to gain a firm understanding of the researcher’s intentions. A list of children that were unable to participate (consent was not given by parents) were discussed, and a modified list of Title I students was then addressed. Because it was imperative to have parental support, the children unable to gain consent were excluded from the available student listing, and the researcher was made aware of aspects of any additional parental concerns through conversations with the administrator. By so doing, experimenter bias was created.

A bias concerning the test implementation tool has been created out of necessity. Because the Children’s Embedded Figures Test (Witkin, et al., 1971) is no longer published, a test had to be located and permission gained from the publishing company to use this test as part of the research. This test is an indicator of field dependence in young children (ages 5-9), which is a secondary criterion in choosing the student participants in this research; each participant was ideally part of the Title I program, and tested field dependent on the Children’s Embedded Figures Test (Witkin et al., 1971). Initially, the researcher wanted to test all students in the Title I program for field dependence; however, due to the need to individually administer the test, it was suggested that only the students with possibility of participation were to be tested.

**Personal bias.** Several aspects of my personal life influenced my initial draw to this research. I became interested in work done with colored overlays approximately 15
years ago, when filters were first used on computer screens to cut down the glare on the computer screen face. Without a filter (most often gray), the computer screen emitted a harsh, bright light and text on the screen was difficult to see clearly. Working at a computer for a long period of time without a filter resulted most often in fatigued eyes and headaches, but often became exacerbated by continued, unmodified use of the computer. I followed the trends established on maintenance of cutting the glare, and about that time, I also found information on different colored filters to help reduce the glare for persons with disabilities (personal notes, 1985). Since I was working in a computer repository facility on campus, this information was readily available. The information was intriguing and searches within the library system resulted in finding further information on colored overlays for reading disabilities, most often (at that point in time) categorically used for dyslexic individuals.

Dyslexia, at that time, was a trendy topic, and many generalizations were made concerning this disability, including: left-handedness, visual acuity problems, poor spelling skills, gender specific (male), and asthma. These characteristics piqued my interest further, since in my family several siblings are left-handed, several suffer from allergies or asthma and are medicated with pharmaceuticals that were known to inhibit cognitive abilities, and because several of us struggled with visual problems.

I have brought to this research the knowledge of my siblings, that have some of the characteristics stated in the generalized condition of dyslexia, just as I do. My four brothers do not enjoy reading and are not strong readers, in spite of the similar teaching methods offered to each of us in school; they do not enjoy reading, and opt for other modes of information transfer whenever possible; they are all extremely creative, and
visually, can interpret complex images without a problem; for them, spelling is a difficult
task, even as adults; and, all suffered from bronchial infections, allergies and asthma-
related disabilities as children. All of us were originally left handed, though three of the
four brothers were made to change their dominant hand in school, while my closest
sibling and I, were allowed to use our left hand as dominant throughout school. All of
these conditions have, at some point in the literature, had connections made to being
characteristically “dyslexic.”

Although the schools did not test for dyslexia in the 1960’s, gross generalizations
concerning dyslexia were made, and many references were made, at least for my closest
sibling and myself, concerning our scholastic abilities. My ability to read well was aided
by corrective lenses that helped to guide my eyes in the proper direction for good focus.
“Binocular occlusion” is the term given to this condition physiologically. With the help
of prisms, my eyes can now focus without blur. However, for years before this was
treated, I routinely would close one eye to see the entire line of the page of text, or situate
my head in such a way that I could gain the widest visual opportunity when watching

I remember these coping mechanisms that I developed to help me read; I
remember the frustration that my brothers went through in trying to learn with traditional
methods in a classroom, and I became personally interested in not only the cognitive
characteristics of learning, but the availability of new instructional methods and tools to
help aid learners that are challenged by learning to read.
The researcher’s personal bias in wanting to record the children’s voice in these reading disabilities and frustrations give rise to the qualitative nature of this work. It is felt that the research could not be conducted as completely, or offer as thorough an outcome, if done quantitatively. By personalizing the information of these participants, the research gained a personal level unachievable through quantitative data that may speak to other researchers and other students that, until recently, had no voice.
CHAPTER 4

Context of the Study - The School

The school sits aside a two-lane road, wire gauge fencing separating it from a field of horses and grand old houses of yesteryear. The horses are comfortable with the intermittent yells and screams of children; they rarely flinch at the sound of the school buses and the other vehicles that pass their way as parents drop their children off for the start of another day. The smell of fresh cut hay is remarkably strong in the fog of the morning, and the children at this school associate that smell with the smells and sounds of another day beginning at this school. The new playground and school track adjoins generations-held private land that families have lent to the school to be used as additional play area. Everywhere are the reminders of a farming community that has sustained this small population for centuries.

It is a school unlike any other in this community. Entering through the front door, I am immediately welcomed by Raggedy Ann and Andy, the good will ambassadors of this quaint elementary school. Everything about the school says, “children thrive here,” and the people encountered within these halls reinforce that statement. Artwork in foil and cotton balls, crayon-embossed fabric-quilts, and the continuous reminders of the children’s personal goals and community goals are evidenced here.

The students that comprise this school come from all walks of life – from highly educated families to families steeped in the Appalachian culture and way of life. The mix is a wonderful, broad-based multitude of young people, learners of life and of each other. Many of the students speak with a soft southern accent and are raised, in part, by the local family members that encircle them. Others speak with a strangely unfamiliar non-accent,
giving indication to their changes in lives and patterns of their youth, of transitions without the advantage of extended family members’ help. It is just as likely that these students have one parent as two, have uneducated family members as internationally educated family members; yet each child respects and relies on the others within their classroom to help them become “part of the whole.” It is truly a growing community of learners, just as the elementary school credo suggests.

As I entered the principal’s office, I was reminded once again of the incredible responsibility to teach a child well, and am confident I’ve found a school that meets the challenge. The principal’s office is stacked high in every corner with children’s books; every inch of wall is covered with educational posters – of Mary Engelbreit and Winnie the Pooh, of writers, poets, and artists yet to be discovered. In the windows sit books and stuffed animals, children’s handmade gifts and original artwork awaiting a trip to the framer and an eventual place of prominence in the hallway. The principal sits behind a mammoth desk, again covered with warm connections to the many students and lives entwined within this school. From here, the principal can be part of all that goes on in this school. She has not only a finger, but a firm grip, on the pulse of this school; she can answer any question about any student at any time, and know, with a great deal of certainty, who is here and who is out with an illness. She runs her school as an extension of that warm and caring environment that the children see and react to; the teachers genuinely work together and work towards common goals, looking for gentle guidance and assurance from their principal.
The Principal

From the very beginning, the principal was a warm and inviting person. She immediately offered time and attention to my many questions of the school; she had prior knowledge of colored overlays and was excited that this technique may help several of her students that she worried over this year. The students, she explained, are very special students, and are having problems learning to read. She produced a list of students from all ages and grades that she hoped colored overlays may be able to help; it was nearly 10% of the school. The task ahead of me was to find a connection between four of these students enrolled in the Title I program at this school who found themselves upon this list.

The Reading Specialist

Vanessa Taylor, the reading specialist, has a room that is particularly cozy, tucked into the side of a larger open space which shelters the kindergarten open classrooms from the rest of the school. Oddly shaped, the room is filled with a table, chair, and many cushions, to allow the children time, space, and a chance to find their own individualistic understanding of how to read comfortably and how to enjoy a good book. By becoming friends with these books, by allowing the children to enjoy a book in a relaxed environment such sitting on the floor or propped up by many pillows, the reading specialist has created a safe harbor for these children to “run away” with the characters of a book, to “introduce themselves” to a story, to history, or to life. The children seem to thrive in this type of environment; kindergarteners to fourth graders, they all anticipate the reading time with the specialist in which they can choose their comfortable area, and “get down to reading.”
The walls within this room are covered with books and papers, posters and plans that together, produce the precise schedule needed to run a resource teacher’s day. By 8:00 AM, she’s already scheduled the day’s reading skills and set aside the books and notes for the various small groups that she will encounter throughout the day. By 9:00 AM, she is pulling students with individual needs out of classroom time to work on sounds and letters, and building words from “chunks” of other sounds and letters. She’s involved with every grade of this school, from kindergarten to fifth grade; in some cases, her work is to reinforce good reading habits that have only just begun, and in others, to teach strong reading skills to children that so far, haven’t connected with the traditional teaching method of reading.

She will try absolutely anything: candy rewards, book rewards, stickers and treasure from the chest – all are highly regarded. Most of these students are motivated by reward, but there are a few who clearly want the biggest prize of all: to learn to read. The teacher works with the principle concepts of Reading Recovery supporting her - offering each new concept in many different ways, using reinforcement, practice, and feedback to gain a stronger sense of understanding of the material for these students, and using the newly gained knowledge as a springboard for the next step in the learning process. As a certified Reading Recovery specialist, she sees value in building small scaffolds of information with these children, testing their ability to maintain this knowledge and to stretch it to the next level, without hampering their ability to create other scaffolds of information, and without inhibiting their creativity in making the connections between the instructional methods and goals.
The Special Education Teacher

The special education teacher has a quiet, gentle demeanor, and the children respond immediately to her warm smile as she enters the room. Colette Genty has been working with children with learning disabilities for the tenure of her teaching; several years ago, she enrolled in the Reading Recovery training classes, and lacks only one class of certification. Because it is a small school, Colette is able to have a one-to-one connection with the children she serves, and works hard at finding accommodative tools and strategies to help each of them. She touches the lives of many of the children within this school; often she works within the classroom, helping the students to be a part of the while classroom structure, while accommodating their individual needs.

The First Grade Teacher

Melanie Whitman, the first grade teacher in the elementary school, is a bright and intelligent woman with an intuitive sense about the children within her classroom. She is caring and giving to the others within the school, often working with other teachers at
break time, and conversing over lunch about the student’s academic achievements or problems.

She has been part of this school for nine years, and has had most of the children in this school in her classroom at one time or another. She has taught both kindergarten and first grade, and finds it an exciting challenge to begin each year, watching these children begin their learning process, and knowing she has a hand in all that will follow. Her memory of each child is amazing, and she became a wonderful wealth of knowledge, not only for the child that is in her classroom that was part of this study, but also because she was able to offer anecdotes and information about all of the children who participated in the study as well. It was quite helpful to have conversations about each of the children with her, and I found that her memories of them were rich in detail and in information as I followed through the process of observations.

The First Grade Classroom

The Second Grade Teacher

Initially overwhelmed with the second grade classroom, it took me several days to acclimate to both the tenor and the level with which this class operated. Meeting Joan Walsh, the second grade teacher, I found myself in awe of the command she had of these children, the respect that the children held for their teacher, and the pace at which both
student and teacher attacked learning. I remember thinking, “this class is fearless!” as they pounced on information about the rainforest and begged for answers to a dozen more questions. Each bright face looked to this teacher, as she waited patiently for silence from the group and then proceeded.

She had a sense of going with the flow, riding a wave of enthusiasm for a topic, but also knowing when the flow was waning; subtle changes in the curriculum, and the children were moved to a new task, one not completely changed from their last discussion, but gently led ahead to the next undertaking. At times, this class was loud and chaotic; at other times, a whisper could be heard. In all times, the children were free to express themselves within the confines of a learning environment with a teacher that loved learning along side of her students.

Joan’s room, like Joan’s beliefs of teaching and learning, is wildly exuberant and often “outside the box” of traditional classroom decor. Her room is brightly decorated, creatively filled with various centers of learning. “Organized chaos” is the statement that comes to mind as I enter this room for observations early in my research. Thankfully, the energy of this room matches the organized chaos; if you wait quietly, your patience will yield a youthful “I got it!!” This – is what the effort is all about…

A tree house stands proudly in a corner of the room, beckoning young readers to sit a spell and enjoy a good read; cushions of every size and shape are tossed on a loft built “beneath” the strong branches of this tree; children find safety and comfort within this tree house, and find the love of reading under it’s stretching branches.

The children congregate at various places throughout the room; computer stations, rugs on the floor making a comfortable learning place with blocks and books alike; tables
filled with needs to cater to even the most imaginative mind, and tables filled with work
textbooks and journals, as the children continue, learning about words and sentences,
mathematics and social studies from this vantage point. The reading area is near the tree
house in the room, with literally hundreds of books filling all the spaces between one area
and another. Books filling tubs and baskets, boxes and bins overflow with stories of
animals and children, science and history. These children have the advantage of having a
teacher that loves reading, and is especially enamored with children’s books.

Joan has referred to her life (and her classroom) as “Mr. Toad’s Wild Ride,” an
amusement at Disney World’s magic kingdom. I laughed when she described it this way,
but it has come back to me many times, and I realize that her description is both accurate
and appealing, even to an older learner such as myself. Joan’s background includes
teaching and tutoring for disabled learners and many of the results of that background are
apparent in her classroom teaching. She finds a challenge in thinking outside the box,
and in creating interesting and challenging learning for all of the students in her class.

The foundational belief of this woman is that children aren’t “broken” – they
don’t need to be “fixed” – something not often recognized, or adhered to in education
today. In the world of “Why can’t Johnny Read” books (Flesch, 1986) and fast fix-its for
children with unusual or unconventional learning patterns, it was a refreshing, albeit
renegade, thought that permeated through several, but not all, of the classrooms in this
small school. I appreciated this sense of determination, and the honesty with which she
holds this belief – with this one belief, Joan becomes the greatest advocate for individual
learning and the most ardent supporter of students that learn in less conventional methods
that I’ve ever met. With quiet determination in her methodology and scientific mastery of
each procedure, Joan makes copious notes on each new technique. This allowed me to see that not only was this teacher serious about finding things that worked for these students, but made it her life’s challenge to find strategies that did work. In an interview with her, we talked of tools and strategies, and we talked about colored overlays.

Some people are looking at this as you use this [the overlays], and it’s going to fix the broken child, and I don’t think it should be looked at that way, it should be looked at as this is something else to fix your teaching. And not the broken child. Good teachers have tools, and the more we have, the easier it is (JW, personal communication, February 19, 2002).

*Something in this dialogue made sense.*

I spent a great deal of time getting to know the students by observing the classrooms as a whole, seeing how the children interacted with each other, and if there was any peer pressure established or created, because of the overlays. The children in the classroom occupied a wide margin of educational interests, and a rather narrow range of differences in terms of inhibitions and problem-solving techniques. They worked together and fluxed together in a learning pattern that seemed to give them all an educational edge.

I found this to be particularly true one day as I observed the classroom. Students from a neighboring university class that hailed originally from Malawi, Africa, came to visit the classroom. Joan’s class gave full attention to the visitors, asking many questions and hungering for more information, even after the visit was over. The following scheduled session was math, but the students begged for more information about Malawi, and without a thought to schedule, Joan pulled out a world map and gave the students a very thorough and very impromptu lesson on Malawi. Then, the students decided to find out how many steps it would be from one point to another on the continent of Africa; the
questions and statements made by these students astounded me – they were completely prepared for the impromptu class, as well as the questions and the quandaries of the other children. These children had learned the “carpe diem” lesson that is so often lost when schedules and necessity intervene in learning. It was more than that though…they fed on this, just as Joan does. There is a hunger for learning in her classroom; regardless of level of learning, regardless of test scores, everyone in that classroom was engaged in the learning process with that African map (observations, November 28, 2001).
Second grade classroom learning centers.

Second grade classroom tree house.

There is something subtle, almost undetectable, about Joan’s love of teaching. It’s hidden somewhere obscure, covered by her indomitable spirit to help these children learn, to see the things she’s teaching, to them to understand concepts and theories and to make learning enjoyable in the experience.

Joan is a teacher with a mission to understand her class of children in the best, most thorough way possible, to help her to understand how best to teach them. She explained to me that, through a battery of assessments conducted one-on-one with each student, she can gain a firm foundation of understanding of each child’s educational status by the end of the first 6 weeks. Each assessment adds to her basis of teaching and
learning, for that individual student as well as for the class as a whole. She recognizes
differences in learning as a challenge, not a burden, and in so doing, can help these
students in so many different and important ways.

By watching Joan, I have come to understand true passion for teaching, as well as
learning. She unabashedly admits that these children, the ones that need that outside the
box thinking, are the reason she teaches. They stretch her as she can stretch them, and
the challenges become equal; both the teacher and the student share the victories. Joan
stays current with the most recent journals of Child Psychology, Teaching and Learning
journals, and the most cumulative files of how best to accommodate different styles of
learning. To teach all children and to teach them well, various and sometimes inventive
ways of teaching are called for, and by raising that bar for herself and her students, she
has learned new methods of teaching, and has succeeded with the students that need this
alternative style of learning.

Joan has the ability to place herself in the children’s position; she works along
side of the children, testing and trying the same lessons that they are trying, using colored
overlays as they use them, and adhering to the possibility that all children are different,
their learning styles may be different, and their cognitive abilities are different, but that if
the information is presented in enough ways, displayed differently and thoroughly, each
of the children will pick up something from that display and will gain more reinforcement
in the task at hand.

Joan has been challenged in many ways this year. Her class notes are covered
with scribbles to herself, designs and drawings of how to make things easier for her
students to learn, how to accommodate all the students in the classroom, in the hopes that
a presentation of information in another type of media will reinforce the learning and build the schema for all of the children to carry on and learn yet the next step.

The Third Grade Teachers

Two teachers formed the core teaching experience for the third grade classroom that I observed; the child within this classroom had the opportunity to learn from both of these teachers, and in both cases, the teachers were talented and gifted teachers to young people.

Jean Land, one of the 3rd grade teachers in the school, works with efficiency and effectiveness when corralling the students for the day’s activities. She has an equal interest in the students’ social awareness as much as their personal awareness to strive and thrive in a learning environment. She, too, commands respect from her classroom, and in return, offers that same respect to her students. They are becoming young adults here in her classroom, with added responsibilities and accountabilities for their actions. Reading and writing is paramount to learning, and the posters on the wall repeat the rules of the writing tasks for which they are required to work. DEAR (Drop Everything And Read) is a special time for the students in Jean’s classroom; it is their time of independent exploration through books and computer programs, and is a time of earned reward for these students.

Jean teaches in a gentle and accommodative manner for these students needing extra help. Since enlisting the use of the overlays, she has worked especially closely with Lee, one of her classroom students. His reading level at the onset of the year was described as marginal-first grade; although there are only a few others using the overlays
in her classroom, Jean follows through in offering the overlays and in using them each day.

Betty Mottle, another 3rd grade teacher enlisted to help Lee in his studies, offered me this explanation of why she teaches third grade.

I love it. The kids are building the independent skills that they need, for school, and you kind of get to install those buttons, and help them understand how to work in the classroom. …And, 8 year olds have a great spin on life. Their perspective too, is nice…(BM, personal communication, February 27, 2002).

Betty completely connects with children at this age, and often works outside the box to find new and compelling ways to iterate the message with different scenarios that are important to these kids. She has found the value of making the children a vested part of the problem in learning; measuring, counting, and creating help them learn the concept in a stronger fashion. Practice and feedback are important to her as well; assessment in as creative ways as the children can come up with is acceptable, knowing that if they can prove the connection of the concept with their context, they will learn on a deeper level.

The Third Grade Classroom and Kid-Habitrail, the perfect place for reading
Fourth Grade Teacher

The fourth grade teacher in this school is a participant in this study also, primarily because of the children in his classroom that are siblings to two of the primary children being observed. It was recommended that I might speak with him, when I voiced my hope to administer the CEFT (Wilkins, et al., 1971) to these two children as part of the data collection for this case study (DC, personal communication, October 31, 2002). Several articles on field dependency indicated a predisposition to familial connections, and it was of great interest to me to ascertain what similarities, as well as differences, the children, as siblings, might exhibit (Pennington, et al., 1987).

Lance Elmer is a quiet man with a serious outlook on teaching. He spends a great deal of time with each of his students, coming to know them and then trying to help them with their individual obstacles in learning. Justin, an older brother to Catie, and Matthew, an older brother to Daniel, are both extremely bright children, he explains. However, both of the children exhibit extreme learning disabilities, especially in reading and writing abilities, and have both gone through a battery of tests and have been given special education services.

Lance runs his classroom in a concise manner; I have not walked in when the children were milling about, or when the classroom was under less than complete control. The principal explained in conversation that the two boys are responding to Mr. Elmer’s one-on-one teaching, more so than they have in the past years at this school. The principal speculated that the boys enjoy having a male role model to talk with and to look up to, and finds that having that connection with a male authority figure in the classroom has been very advantageous (DC, personal communication, October 31, 2001; February

76
26, 2002). Whatever the reason is, both of the students are working hard to achieve a
good level of learning (LE, personal communications, February 6, 2002).

The Children

The participants in this study come from several different learning levels within
this primary school. All of the children were enrolled in the Title I program at the
beginning of this study, and each has completed the Reading Recovery program, but was
unsuccessful at discontinuation in the allotted time of 20 weeks. At that point in time, the
students were placed in the Title I program to be given further remedial instruction in
reading and spelling.

Each child has a different and quite distinct background. However, the similarities
of these children far outweigh any differences that can be observed; the most prominent
similarity is their overwhelming desire to read effectively.

Lee is in the third grade classroom, and has struggled with reading since
kindergarten. His ability level has not increased sufficiently to maintain classroom
activities, and has recently been the subject of a child’s study, conducted by the school
psychologist and the special education instructors. His outcome is pending.

Catie is repeating first grade this year; her attempts at getting a foundation on the
very simplest of ideas were poor last year. This year she is working along with the class,
reading close to grade level, and becoming much more engaged in the classroom
activities. For her, the opportunity to repeat first grade was a decision that may have
alleviated a great problem later in the school years. Her processing abilities on distinct
concepts has been reported by the first grade teacher as much closer to the acceptable
level of first grade; her ability to read has been steadily increasing, though not without
some problems in spelling and word recognition. The special education teacher has conducted further work with her in reading and spelling this year.

Catie has a brother in fourth grade. Justin is also an incredibly bright and hardworking student, has received Reading Recovery services, Title I services, and is now being served by special education services. His reading ability is at or near his younger sister’s level. His difficulties in reading stem from the lack of understanding how words are spelled, how they look when they are written, and how breaking them down into smaller word chunks can often provide the reader with information necessary to sound out a word, or make an educated guess at an unfamiliar term.

The similarities between these two children and their challenges may indicate some familial problems in reading, visual perception or basic lack of knowledge of the written and spoken word. Both children have the ability to read upside down or backward and can write numbers and letters in mirror image perfectly, most often doing this without realizing it. Perceptually, Justin has a more prominent problem with this recognition, although his younger sister apparently has the same ability (MW, personal communication, Feb. 8, 2002). In both children, the desire to read is strong and backed by commitment. Catie has an easier time of it than Justin, but both children strive for reading and writing excellence, in spite of the difficulties their lack of reading skills offer them.

Additionally, two students within the study are from the same classroom in second grade. Daniel has considerable challenges in his respiratory health as well as in vision, which causes need for some accommodation; this child has an older sibling, Matthew, who also exhibits some of the same problems in reading, though does not have the considerable physiological conditions of his younger brother. Matthew has been
tested as gifted, but because of his learning disability, is often placed in remedial classes. Daniel also exhibits the same gifted tendencies, but due to the overwhelmingly high number of tests that he is put through each year, the school has chosen not to put him through an additional battery of tests (JW, personal communication, March 20, 2002). Both have the functioning capability for problem solving far above their age bracket, as well as a very well developed vocabulary. The familial connection of their specific reading challenges is reportedly quite strong, with both parents having a difficult time reading. A recent additional report of a cousin approximately the same age as Daniel, and also exhibiting many of the same challenges as Daniel should be noted also (DC, personal communication, February 2002).

Cherie is the fourth child in this group being studied. She is also in the same second grade classroom with Daniel. A very bright and friendly child, she attacks everything new with a great deal of excitement, and has shown no frustration at the challenges she faces in learning; instead, she often will regroup and attack the problem in a new and different way, making stabs at finding accommodative information to help herself to succeed at the learning goal. Cherie’s home life has a great deal to do with her learning abilities; the home structure is in a state of daily flux and it clearly influences much of her performance within the classroom.

The children of this study are unique, in their own stories and in their own right. It quickly became apparent that I could not observe and record these children in the learning process without acknowledging a great deal of their personal stories. Herein are the children, their stories and their histories. Some are commonplace, and some are
extraordinary, but they strive to achieve a level of independence and strength from learning to read.

Qualitative Features of the Portraits

The general qualitative features that are common to each of the case studies are the following: each of the children are enrolled in the same elementary school, and although each of them are in different classrooms and class levels, are at approximately the same stage of learning to read. (VT, personal communication, Feb. 12, 2002). All of the participants have been part of the Reading Recovery program, although each was unsuccessfully discontinued at the end of 20-week sessions. All of the participants have been students in the Title I reading program at this school, and were current participants when this research study began in October 2001.

Field dependence. The Children’s Embedded Figures Test (Witkin, et al 1971) was administered to the four participants on a one-to-one basis, and all tested field dependent, in varying degrees (personal observations, December 5, 2001).

Children’s Embedded Figures Test. The Children’s Embedded Figures Test was created and written by Witkin et al. (1971) to test children from five to eight years of age for field dependence. The test, previously available from the American Psychological Association (APA), Inc., was found to be unavailable for purchase. APA, Inc. recommended two other testing companies that may carry the permission for use of the test. A convoluted search led to a clearinghouse publisher based in Massachusetts, and eventually, to the Library of Congress. It was ascertained here that no one held the copyright or the sales rights to this test any longer. The authors, now deceased, had no
specific estates or copyrights pending on this test that could be located (personal notes, October-December, 2001).

Although our library holdings had the manual and an adult copy of the test in its archives, the children’s test was unavailable from there. Searching with help from our Educational Librarian yielded a copy that was in transit from Washington State to Illinois, and the librarian in Washington sent it to the Virginia Tech librarian for a period of time before it had to go on to Illinois. It was in this manner that I became personally acquainted with the CEFT test, created some 31 years ago, and still considered an accurate testing instrument for field dependence/independence.

The test, a series of index cards with images displayed on them, were colorful, more defined illustrations of the better-known adult version of the Group Embedded Figures Test (GEFT) (Witkin, et al, 1971). This series of cards all containing one of two shapes embedded within the image, either a triangle or a house-shaped image, was used in its original condition. This test, and the adult version by the same authors, has become the benchmark tests for field dependence in educational psychological areas worldwide.

The test was administered individually to each of the four students that were being observed; additionally, two siblings of two of the children were also tested, in an attempt to ascertain an indication of whether field dependency could have a familial connection. In these cases, it was apparent that both of the children in the families had similar reading difficulties, both had been through the Reading Recovery program and both had been through Title I reading classes (DC, personal communication, August, 2001; VT, personal communication, October, 2001). In each case, the test took between 30-45 minutes to administer completely, and in each case, field dependence was
Reading Recovery Program. Each of the four children in this study has previously participated in the Reading Recovery program at this elementary school. This program is a federally assisted program that offers students additional support with learning strategies for reading. The early intervention program was developed in the late 1970’s by Marie Clay, to specifically target children in the first grade needing extra help in order to achieve grade level reading and writing and to maintain it in the future. Those individuals eligible for these services are given 20 weeks of one-on-one intensive tutoring with a certified Reading Recovery specialist. This school has two such teachers, and one special education teacher that lacks only her certification for the title of Reading Recovery specialist as well. The teachers within this school can accommodate approximately 20 students over the course of one school year. The students are chosen by their academic achievement on Phonological Awareness Literacy Screening (PALS) tests as well as individual assessment by the Reading Recovery specialists. Because the program targets students just learning to read, many students gain the additional tools necessary to continue on in a class setting, reading on grade level after the 20-week session and are then successfully “discontinued.” Those children that Reading Recovery can not sufficiently help to grade level are often placed in Title I programs and given additional basic instruction in small groups five times a week until mid year, when reassessment is done. The children who pick up tools and strategies and gaining the ability to grasp reading continue on with Title I throughout the year; those children that are not helped with Title I are often referred for special studies testing, a battery of tests
that can indicate the need for special services or special accommodations that may be available for the student to be a successful learner. While at this school doing research, two of the children participating in this study have been sent for special studies testing, and both have become available for special services opportunities.

**Title I Program.** The Title I program within this school is managed by the reading specialist and the reading specialist aide. Between the two of them, they are able to accommodate approximately 20-25 students on a daily basis, exercising both the reading and writing aspects of learning letters, words, and sounds. Title I serves all children in K-third grade at this school. These children are placed in small groups of four to five students for a 30-minute period, and the standard procedure within that 30-minute period of time is fairly consistent in structure.

A new book that the children will read is broadly introduced; each child goes to his/her favorite spot to read, while the reading specialist works with one individual at a time, doing informal running records while the children read to her. There is additional reinforcement on paper, a tool called a “hink pink” (Appendix C) that is a series of pictures symbolizing rhyming words. The children are asked to spell out the words the pictures depict, with correct endings and an understanding of how that word is structured. A “cause and effect” (Appendix C) sheet is an alternate reinforcement exercise to the “hink pink,” in which the children are responsible to list causes and outcomes from the story they have just read. This is a difficult task for the children, but with guided help, often come up with very focused cause and effect scenarios (personal observations, November 2001-March, 2002).
The Title I program is run very similarly to the Reading Recovery program in structure, in that the topics are offered, reinforced, approached from a different standpoint, and reinforced again. Different modes of transfer are used, and assessment of the knowledges, skills and aptitudes come in the form of spelling tests, creating mystery words from letters, and recapping the stories through dialogue in a group setting. Finally, new information is introduced, and the children begin the cycle again (personal observation, November, 2001-March 2002; VT personal communication, Feb. 2002). The children find this a predictable, but comfortable method of learning.

Portraiture

Catie

Catie is a quiet child, pleasant and nurturing in her affectations towards others in her classroom. A first grade student in Melanie Whitman’s classroom, Catie is content to be a part of this classroom and all that it encompasses. This is the second year that Catie has been in first grade; holding her back last year was a difficult decision for the teacher and administrators of this school, but, as is evidenced by Catie’s most recent assessment scores, a wise decision (DC, personal communications, October 30, 2001). She was having difficulty in such tasks as counting and understanding the alphabetic principle; developmentally, she just was not prepared for first grade. When the school year began again this year, the decision proved to be the leg up that Catie needed.

Catie has interacted at grade level for most of the year now in all of her subjects. Where last year, she fell behind almost instantly, Catie was now beginning to make the connections from process to process. Still taking a little longer than other children, some
of the more difficult tasks have been met with a new sense of understanding and accomplishment.

I really think that retaining [Catie] was a good decision; when you make that decision to retain someone, it’s really a big, hard decision to do that with all the consequences particularly in a small school like we have, that peer pressure, that neighborhood pressure -- did she fail? How the parents are going to approach it? Making that decision was really difficult but I felt that for her, to keep on being lost was also going to be a real concern, and she just needed that confidence that another year [could offer], and it was just taking longer for her to learn something than the other children and I think for some of that, that’s it, it’s just going to take Catie a little bit longer to learn that it does for other children of the same age (MW, personal communication, February 8, 2002).

Catie’s opportunity to revisit some of the more difficult tasks over the last year has proved helpful in many ways. Catie is still unable to command an “r” in her vocabulary; a speech challenge that has been addressed this year as well. Most first grade students do not have a well developed “r” sound in their vocabulary at six years of age, but by the end of that year, have generally commanded it well; Catie is now through the better half of the second time through first grade, and still has difficulty with her “r” sound. Moreover, it is not just the words that evade her; aurally she is not hearing the “r” sound. When asked to spell ARE, and given the sentence using that word to reinforce it, Catie hears “awe”, and spells it the same way. This lack of auditory ability to conceive sound to letter cue is something that will inhibit Catie from strong spelling tactics in the future. To spell well, one must be able to respond to all aural cues accurately (Cooper, 2000).

…how much that speech factor plays in there, I just don’t know. I do think that’s a real factor for her too. What she hears and what she doesn’t, and not so much her speech anymore is an issue, but what didn’t have that development at earlier times, 0-3 years of life, running vocabulary, sounds and that type of thing that I don’t know how much that affects her.
R, for example, is something she has trouble with, and I can tell that in her writing, because when she goes to write something that has a beginning R, she writes a W. Also, the word ARE always has a W in it. That’s what she hears when she says it…(MW, personal communication, February 8, 2002).

Developmental opportunities for Catie in her very early years were sparse, by all accounts. Catie does not have a firm foundation on a large vocabulary of words, almost as if she did not hear a great many words in the early stages of her life. Her knowledge of fairy tales and Disney™ movies is surprisingly almost nonexistent. In a household where working was the primary goal, and books were an extravagance generally out of reach, children inadvertently lose a great foundation of understanding how the language is put together to form words, how words sound and their definition, if only by use and repetition in daily activities, and by reading to children (Cooper, 2000). For Catie, all of these foundational elements were missing so she had a lot of catching up to do to get to the level of understanding that most children enter pre-K. Catie had to work hard to keep up with the children that already accepted the sound and function of words as rudimentary, and had a vocabulary able to express some of the most basic processes (MW, personal communication, February 8, 2002).

Catie has a unique ability that she displays, often times, without even realizing it. She can read and write numbers upside down and backwards, and can do it with surprising ease and correctness. Melanie told me of Catie’s regular tactics of the year previously:

She used to write numbers upside down and backwards; she doesn’t do that so much anymore, not so much have I noticed it this year, but last year, it always amazed me because it was more often correct than it was incorrect, she could do it upside down or beside her, and get it; and sometimes if somebody had a reversal on theirs and she was reading it upside down, she might have corrected it before she wrote it down herself, even if she was looking at a wrong number; it amazed
me, and I don’t understand how she could do that, (MW, personal communication, February 8, 2002).

This ability has been written about for years: dyslexic individuals such as Leonardo da Vinci and Albert Einstein (West, 1997a) wrote many of their famous works in mirror-image writing. Speculative theories as to why this occurs are numerous and varied; some feel that it is a processing difference, while others contend that it is a perceptual difference (West & Sherman, 2001). Regardless of the theory behind it, the ability to write in mirror image is seemingly a familial connection. Justin, Catie’s older brother, and also a student at this elementary school, still often writes in this manner.

Well, the first time, I saw something with Justin written on it when he was in first grade, and he was in Melanie’s class, and it was hanging up in the hallway, and the handwriting was absolutely beautiful, and it was perfectly backward, just mirrored perfect. And I went to Melanie, and I said “what is this” and they had already taken him to child study, or already started the child study thing, and he was one of the only kids that the school psychologist has ever said “learning disabilities” in the first part of first grade - it was so clear, there was no if, ands or buts, learning disability, first grade, first month of first grade. He said that had never happened before (JW, personal communication, February 19, 2002).

Justin did mirror writing, and I actually - he turned in a paper one time and it was a fraction page, and it was upside down and backward, the entire thing, he got all of the fractions right, but the entire page was done upside down and backward (JW, personal communication, December 12, 2001).

Justin’s present classroom teacher explained to me some of Justin’s accommodative problems: often, the words he spells in his daily journal or even with writing a sentence about a book he has just finished reading are spelled in a completely unrecognizable way.

Justin definitely has some road blocks when it comes to spelling, therefore that definitely ties into his reading, cause his spelling is down to the level of spelling words like ARE, his own last name, WE, HIM, THEY, if you can’t spell words like that, you can’t read, basically...
…I don’t even know if it’s phonemic, it’s just his own language. It’s not spelled like it sounds, I don’t know where it comes from, but it’s just a real lack of spelling. He just can’t spell. There is nothing that leans me towards phonemic, because phonemic means spelled like it sounds, and it’s not like that all the time…he will literally misspell 90% of the words [on his own]…(LE, personal communications, February 6, 2002).

While Justin has undergone Reading Recovery and has had special education services since first grade, Catie has gone through Reading Recovery and now is getting some accommodations with special education in reading, although she has not undergone the full battery of tests necessary for an IEP (individualized education program).

We have gotten together in child study and looked where she was, but basically what we’re trying to do is work with sight words, and what I did a lot at the beginning of the year was I worked with stories that she hadn’t been exposed to like Cinderella, and some of the other basic things that we hope most kids already come into school with knowledge of, so we do a lot of just reading stories so she can hear these basic stories, but right now we’re really working a lot on sight words, …She’s really slow and steady, I think she really is coming along, I think we just need to keep an eye on her, and we’re going to be meeting back; it’s really hard with students that are so young, because the testing process doesn’t really show us a lot, so we’re trying to make a way to get in there and get extra help, but not wait until it’s third grade and they’ve already fallen so far behind and then they have a discrepancy…(CG, personal communications, February 6, 2002).

Clearly, her age and her lack of foundation that most children bring to the school with them has created a disadvantage for her. I asked her classroom teacher how she was doing with other subjects that also needed some foundation of schema in order to build on the concepts and further the educational process.

She still doesn’t have all her numbers down, for example, so being able to count to twenty or 100 by the end of the year was something that she couldn’t even begin to do because she didn’t have any number sense to do that with, whereas this year, she’s getting some number sense, and she’s beginning to see the patterns in math, which I would think is part of that imbedded thing, where if she can’t see a four in a four or five digit number, but then knowing what digit placeholder that is might be something different so…(MW, personal communication, February 8, 2002).
Catie’s reading ability at the beginning of the year was somewhere around level eight, according to the special education teacher (beginning first grade), although in the classroom environment, she is reading some of the step up to reading books, leveled somewhere around 12 (mid level first grade) (MW, personal communication, February 1, 2002). Because they have little reading help at home (MW, personal communications, January 29, 2002), it has become even more important to offer reading help at various times of the day and to reinforce the reading strategies that she has been taught.

Catie uses a colored overlay to help her read. She originally chose the rose colored overlay and explained to me, in interview, what happens when she places the overlay on the book.

It turns it different colors. It makes the words easier to see too. *When you take it off, what happens?* Turns into a regular old book!

This response made me laugh, as she said it in the “hey stupid” kind of tone. “A regular old book looks like this,” she said, and showed me an alphabet book she pulled off the shelf in the room. It had large, very bolded letters, and I suspect that those letters, with or without an overlay, were easily discernable for her. I had brought along a book to give her, one that was a level one book, and it was entitled *Hello Trouble*. I asked Catie to read to me, first without the overlay.

“Tony (Trouble)… was… to… pauses be a good cat (kitten).
Tony tries to be a good kitty (kitten).”

The words that Catie glossed over were inconsequential to the sentence, and with the help of picture cues, she was able to discern what the print *should have* said. As is often the case with young readers, she saw the first letter, and continued on reading a word that sounded similar to what she thought might be in the text, and moved on. I did
not stop her in her reading, and did not correct her, hoping she would see her errors on her own. She never stopped to consider the cat’s name, Trouble, and instead, substituted a simple word that might have been what that word was…

We placed a colored overlay on the text, and I asked her to continue reading.

But Tony gets into trouble. (page) Tony gets into lots of trouble. He jumps (sc) just can’t help it. Very good! Can I read two more pages? Okay. She reads on, and with less trouble than I’d anticipated. I had to ask... Do you think reading with a color overlay helps you? Yeah! It does? How? What’s it do? It makes the whole picture and words so I can read better. The words are clearer. (CS, personal communications, February 28, 2002).

Catie read the entire book with me, unsatisfied until she had reached the end of the book. With the exception of the name of the cat, which she never did see correctly (perhaps my own fault, because although I had carefully read the title to her, she was excited at the prospect of having this book for her very own, and was not paying attention; then, when she began to read, I did not want to correct her reading, but allowed her to investigate the words on her own), she read the book with at least 95% accuracy. It was wonderful, her fluency and her comprehension of the book were obvious as well, as I asked her questions about it when we began another portion of the interview. Catie is a bright child, very methodical in her strategies to get through the text, and very aware of the accomplishment that she has achieved when finished (personal observations, February 28, 2002).

Both of the children, Catie and her brother Justin, have found that with hard work, and patient, methodical strategies, they can find the information necessary to complete the task of reading. I found this fascinating; these children, one in first grade and one in fourth, operated on much the same system: when a task is placed in front of them, they find the tools necessary to do the task without rushing, and have learned to use all
available resources to do this without requiring assistance. After they have done their best at the task, they respectfully ask for help from the teacher to make sure they have done the task correctly, and without fail, have returned to their seats to reissue their corrected answers, quietly and meticulously.

She might not know the information, but she knew where to go to get the information she needed, and she more than anyone that I can really remember—that really struck me. If I was to sit down and talk with her, with nothing for her to use, she couldn’t tell me anything, how to count or how to read, but if she had all those tools around, and she was free to go and get whatever she needed to do what she needed to do, lots of time, she’d pick the tool that would help her find the answer. She knew she’d be able to find the answer with the tool that she’d pick, and it was generally right. She was very good about learning about tools, and about what she needed to do, and I think that’s what contributes to her confidence in her that, now that she has some other strategies to go with that one thing, you know, she has more than one way of figuring things out (MW, personal communication, February 8, 2002).

Justin works through things very methodically, he knows where to go for help, and when to go for help, he does a lot of it on his own first, he’ll go ahead and he spells it the way he thinks it, and writes everything the way he thinks it is, and then he’ll ask or he’ll go ahead and turn it in. But he’s a hard worker, he’s not afraid to go back and do it, I mean, a lot of the things he has to do, he has to do twice, and that doesn’t bother him, he’s a perfectionist to the extent that he likes to get everything done, he doesn’t like to be left out of anything from the rest of the class, he likes to fit in with everybody else, even if he’s been out for part of the assignment, and everybody else has had 10-15 minutes head start, if that’s what we’re doing, he’ll sit down and get started (LE, personal communications, February 6, 2002).

Two different teachers working with two different children (Catie and Justin), in two different learning areas (first and fourth grades), and they each had found that methodically working through a problem with the tools and books at hand give them a sense of understanding before needing intervention from their teachers. These are strong strategies for children with reading challenges to have in their possession.

Catie and Justin were both given the Children’s Embedded figures Test also. The CEFT was created for younger children, because the standardized test used with adults
was too difficult to understand. Catie worked through the test, most notably, without having the vocabulary to even describe the images as I showed them to her; the term “microna” (made up word?) was given to me to describe a teepee, a very clear image with southwestern imagery on the front and unmistakably, a triangle used as a door. She scored six out of the first 13, and I decided to try her on the second set of images, those embedded with the “house” figure. Here, she could neither ascertain the image, nor find an embedded figure within. We even tried looking at the images with an overlay placed over them, and with one (H2, a rocking horse image), she was able to pick out the shape with a great deal of effort and time (time elapsed at over 1 minute). The rest of the section was lost to her, and we discontinued the test at H9. Her overall score was 30.4%, which is indicative of a positive field dependency result (Witkin, et al. 1971).

Justin, nine years old at the time of the test administration, has an uncanny mechanical sense about him; we talked prior to administering this test to him, and he explained to me, in rich detail, how to build a birdhouse from the ground up. He and his father have been doing that, and he was much more inclined to impress me with his knowledge of building than he was with taking the test I had laid before him. However, Justin complied when I asked him to answer some questions, and he answered them in a straightforward and honest manner.

Justin had a better understanding of the pictures I placed before him than did his sister. His descriptions, while not nearly as in-depth as the bird feeder building instructions, nonetheless conveyed his interpretation of the pictures. Because he found eight of the first thirteen figures embedded within the pictures, we moved on to the second section of the test. Here, it should be noted that this test is truly written for
younger children, and I suspect that the ease of the test for someone of his age, and the
dynamic colors helped to increase his score. I would have liked to administer the GEFT
(Witkin et al. 1971) to Justin, but boundaries of this research did not permit it. Justin’s
second round of pictures, this time embedded with a “house” figure, proved to be much
more difficult; the images are less defined, and the figure is much more “abstract” in its
shape. He clearly was having a hard time finding any shape within these pictures, and the
completion of the test yielded a resultant score of 46.4%, not surprising, due to the ease
with which he managed the “triangle” embedded pictures (personal observations,
December 4, 2001).

Justin’s score, although close to field neutrality level, indicates that there still may
be some problem with disembedding part from a whole. Taking into consideration the
fact of Justin’s age, I am unsure of the validity of this test result, but would rather use it
as an indicator of some field dependent issues that may be at hand.

Justin has been using the overlays in reading also; his classroom teacher finds that
Justin uses them frequently, and admits that they help him to “see the words more
clearly” (LE, personal communication, January 26, 2002). The special education teacher
has been working with Justin on spelling and remedial reading tasks, testing at 1.0 at the
beginning of the year and testing at 0.9 in January, Justin’s his reading has definitely
been affected by his lack of strong spelling and lack of ability to build a foundation of
words from with which to build.

Justin knows he can’t seem to pick up the code, so he struggles trying to, and he
still can’t pick up the code. He was in reading recovery, he was in title one, he
qualified for services, he’s reading everyday. I did all those reading recovery
strategies with the codes, then the word, the pictures, and symbols, and it’s really
fascinating, but I really didn’t find anything that really worked, but having that
every single day for that ½ hour, going over sounds, but then it only worked for
that period of time, and then if you go on, he loses it, and you have to go back, and retrace. Now his attitude is changing, he doesn’t want help, he wants to do things himself (CG, personal communications, February 6, 2002).

The special services teacher and I talked of Justin’s (and Catie’s) field dependence; I asked her what their outcomes meant to her.

I think it might explain how you can really tell that they look at print differently, I think that’s the biggest thing to me, like it is a different process for them, it’s a great clue to be able to address it (CG, personal communication, February 8, 2002).

*I think she may be right.*

Areas of Focus

Catie and Justin seem to be children that the colored overlay tool may help. Although I was unable to interview Justin personally, I was able to talk to his current teacher as well as his past teachers, to acquire information that contributes to answering the research questions.

*What are Title I students’ experiences with and feelings towards the introduction of colored overlays when learning to read?*

As has been the case in all the classrooms, the overlays were met with initial excitement in first, as well as fourth, grade classrooms. Because the fourth grade classroom had less of a concerted effort to use them with any student in the classroom, a less enthusiastic response from the children was obvious, and expected.

In the first grade, the classroom teacher went through a series of systematic placements with each child during one-on-one and small group reading, asking them to look through the overlays onto the page, and see if one of the overlays offered any help in seeing the words more clearly, or making the children’s eyes feel better. In first grade,
the opportunity to describe the attributes of the overlay are lost on the audience, so “better” or “worse” were the descriptors that surfaced.

Oh [the kids] loved it, they thought [the overlays] were a lot of fun, they enjoyed picking out their colors and trying all the different colors, and they remembered what colors they chose. I was really surprised; because if I offered it to them, they can tell me what two colors they chose the first time (MW, personal communication, February 8, 2002).

Catie chose the rose colored overlay, though periodically, she had to “try” the purple overlay as well; purple is, after all, her favorite color (CS, personal communication, February 28, 2002), and she can see “good through it too, and everything’s pretty.” I am suspect at the level of aid it gives her, as she frequently will use it, then change back to the lighter, less obtuse color of rose (personal observations, January 12, 2002). She is not alone in this ritual, and the teachers and I talked of the importance allowing the children to choose and change their color of choice at will. For some, it is nothing more than a temporary diversion; for others, like Daniel and his change of color for different curricula, there is some reason that has been validated with successful outcomes (JW, personal communication, February 20, 2002).

Justin has been using the turquoise overlay, a color that is popular in the young male population. There seems to be a consistency to the colors also; blue-grays, turquoises, peach and rose are the colors that seem to be the overwhelming choices across the demographic. As of the interview times, the colored overlay was not being used consistently with Justin in his special services reading time; the special services teacher explained that that was to begin in February, and it would be interesting to see what kind of remarks they have to make about it thus far.
It was important to ascertain the fact that Justin was not exhibiting any peer pressure in the use of the overlay. I pointedly asked his classroom teacher about this:

*Regarding peer pressure being a problem*] I don’t think so because they would seem like they’re something that is more cool that other kids would want, rather than looking down upon him because he’s using them. I don’t think so (LE, personal communications, February 6, 2002).

Because I did not have the opportunity to ask Justin, this response had to suffice.

*In what ways do the students’ experiences and feelings change over time with the continued use of the colored overlays?*

There seems to be no change in the experiences with overlays for Catie, or for Justin. They continue to use the overlays in classroom situations while reading, and the classroom teachers have indicated that the use of the overlays have aided each of them in reading; for Catie, the teacher has expressed an indication that “she is able to read with greater fluency, and with better comprehension.” I noticed with her during my interview that miscues and self-correct errors were lessened, and asked the first grade teacher if she had noticed anything. “Her miscues and self-corrects are lessened with the use of the overlay, and I think that maybe the overlay is helping her to discriminate between one and two words more completely (MW, personal communication, January 12, 2002). “

When the same question was asked of Justin’s teacher, he was honest in his assessment:

It’s really hard to tell, from my perspective, I’ve asked him numerous times after a period of time of me remembering two or three days in a row, and him using them, and then asking him, or just out of the blue, and I remember to get them out, and then I ask him again, and he always says “yeah, they do help” (LE, personal communication, February 6, 2002).
How do students describe the difference between reading with the overlays and reading without the overlays?

Catie’s explanation on the difference between using the overlay and not using the overlay was simplistic. When the overlay is used on the books she is able to read the words easier, and when it is not, the book is just a “regular old book.” I was not expecting a detailed explanation from the first grader, but I think I got more than I was expecting just the same; when she read for me, the difference was dramatic, and the clarity with which the words appeared to Catie was definite. She read more clearly, with less miscues, and without stumbling or missing words, all of which she did on a regular basis without the overlay.

Because I was unable to ask Justin about this, it will remain unanswered. Sometime in the future, I hope to gain some of these answers, either from the teacher, or from the special services people, as they must assess Justin’s progress each end of year, just as they do all the other students within the school. I suspect it makes the words easier to see for Justin as well.

What are the implications of colored overlay use for the students within the classroom?

Because Catie is in the first grade, the text (and the pictures that accompany it) are most often a large, bold print, with few words (1 to 2 sentences at most) on a page; the picture, most often brightly defined with color, offer reading cues and explanations of what will happen in the story.

Children in kindergarten and first grade are often reminded to check the picture to the story for cues to help them figure out the story line, and that that in itself may give an
indication of how they can approach an unidentifiable word. For Catie, this is an important and often used cue. As in the conversation with Melanie concerning Catie’s strategies for success, Catie has learned where to go to gain the optimal level of information about a book she is reading; she finds the tools and the helps to get through the task, this one being reading. She is a bright child, astute and observing at all times, and she has found a great deal of success in the pictures that accompany the text in the books of her level. Unfortunately, the text becomes smaller, the pictures less descriptive and informative, as the reading level increases, and the cues that she can gain from that will be lessened as well; it will be then, that Catie has to rely on her strategies for reading words and understanding the pieces of the words that make up the sentences.

I would venture a guess that if the colored overlays were used in math and social studies, it may help her gain a footing on the information as well; I have watched Catie in mathematics, as she tried to get a firm understanding of counting coins to make change. Every child was given ten coins, and were asked to make the mathematical sentence \( X + 3 = 10 \) a true statement. Catie diligently counted out the ten coins, then took three away, and counted the remaining coins. It was not that she did not understand that she could take away the three coins from the ten to get “\( X \),” it was that after doing so, she very methodically counted the remaining coins to arrive at seven coins. The next problem, \( X + 4 = 10 \) yielded a similar process, putting the ten coins together, and then taking away four. Once those four coins were taken away, she carefully counted the remaining coins to arrive at six. Finally, the next problem was \( X + 5 = 10 \); again, Catie returned all the coins to the pile, counted them (to make sure there were ten), took away five, and then, once again, counted the remaining coins to arrive at the number five. She continued this
throughout the exercise, never understanding the scheme behind the numbers or the problems based on the number ten. I asked Melanie about this, and we talked of the challenges of building schema. Catie is still having problems building those schema, those general number bases, and it tends to bleed over into the word base too. She does not have that “bridge” going on that tells a child “if AT is “at”, then C-AT is “cat, and H-AT, is “hat” and so on. It is akin to being unable to disembed a line from an image; this time, though, it is a word from a larger word (Huang & Chao, 2000).

That question also came up in conversation with Justin’s teacher.

*When you help Justin with his spelling, is he catching it though, from his spelling to your spelling, what the difference is, is he building anything in there? Is he making a bridge at all?* I don’t know, I really don’t know if there is. It’s probably true that Justin isn’t doing that, otherwise by now, he would have built on the words like AND, and THE, and HIM and he would be able to spell them. There’s not much of that going on (LE, personal communication February 6, 2002).

Having stated this, I would think that trying overlays within all curricula may yield some information, positive or negative, as to the aid of the color overlays for helping the children understand the symbolism and the word problems found in math, science, and social studies. I have recognized that the data are inconclusive; however, a teaching tool should be used until it is no longer useful, and should be used to the fullest extent that may be available. Pushing the envelope with Daniel (writing on the overlays), in second grade, yielded a viable option for him to successfully complete his homework sheets; prior to this, Daniel could not see the symbols for plus, minus, dividing and multiplying, and that task alone rendered him “handicapped” from doing his work with the rest of the class. A noninvasive tool such as this, that does indicate some usefulness in the reading arena, may help in other arenas as well.
Justin and Catie are wonderful kids; from a hardworking home with two parents that admit their own problems with reading and math, the children have much to contend with, and much to offer. They were both described in the following manner:

I look at Catie and Justin and think the word that comes to my mind is SURVIVOR; Justin more so than Catie, though as she is getting more confident, I see her -- and that’s what I remember about Justin and there is some of that in Catie as well - some of that survivor street-smart, “I’m gonna figure this out” and that seems to be helping her with her confidence. I think it’s going to be a surviving skill for her though (MW, personal communication, February 8, 2002).

Survivor. What a wonderful term to encase a child’s learning ability with; these kids will survive, and do it well. They have the tools, but more are always welcome. They have the opportunity, if they can find the stick-to-itiveness. So far, so good. I hope it continues.

I had a teacher once that had a single word plaque on her desk; it was fourth grade, and I still think of it at least once a week. YAGOTTAWANNA. I want to give these kids that word too.

Daniel

Daniel is a confident child, full of life and humor, and determination. He loves the written word, especially poetry, and is anxious to be in command of it. At eight years old, reading has become a larger task for him than for other children; Daniel has several health problems that inhibit normal learning on a daily basis. Diagnosed and treated for asthma, Daniel often has enlarged adenoids, which makes it difficult for him to speak normally. On any given day, Daniel can be found sitting in a class wheezing, trying desperately to stay with the class lessons but often missing much of the lesson because he struggles to breathe. Along with the asthma comes itchy and often blurry eyesight, becoming a constant source of irritation for him on these days. Compounding these
physiologic problems, Daniel also has been diagnosed with an eye-tracking problem. Although he has good visual acuity, he has one eye that will jump uncontrollably and fails to focus in conjunction with the other eye. Because the brain uses two images merged in order to create a three-dimensional image translated in the visual center, when one image is constantly and consistently jumping or moving, true focus cannot be achieved (Parks, 1999).

Daniel accommodates all of these challenges in amazing ways. He has learned to place a book to the lower left of his center, in order to see the greatest area in his sight. When his inhaler gives him no relief, he often shortens sentences and answers in single or dual word responses. He has become adept at communicating in short phrases and facial expressions.

Daniel is in the second grade classroom of Joan Walsh. He is bright and intuitive, often coming up with inventive and accurately operational ways of creating things, manipulating things, or managing information that he must master. He has, even at his young age of seven, become very adept at accommodating those things which look different to him, and which are difficult to handle. Some tasks may be very easy for others to engage in, but because Daniel sees things differently, he must accommodate for those visual differences. When I met him, he had been in Title I classes with Ms. Taylor for about two months: long enough to realize that the class was different than the rest of his classroom’s work and lacking an understanding of why he was not able to stay on the same page as the rest of his classmates. His cohort group, three girls and one boy, worked towards common goals, though they were not the goals set for the rest of his
second grade classroom. Daniel desperately wanted to be part of the rest of the classroom, though he clearly understood why he was in the Title I program.

*I watched Daniel almost daily for four months; his interactions in the reading specialist’s classroom were distinctly different from the interactions I observed in Joan’s classroom. It became a point of observation to record attentively what those differences were.*

Daniel, as evidenced by his aptitude scores and test results, is an extremely bright child; his vocabulary is that of a child much older, and his comprehension of aural communication is quite advanced as well. It is only when asked to perform things that are visually connected, and kinesthetically inclined that he falters. It is not that he doesn’t want to perform the tasks asked of him, it is that he can’t *see* what it is that other children are seeing and therefore not able to visually comprehend.

Daniel is interested in stories of animals; dog stories such as *Balto* or *Biscuit* keep him entertained and engaged far longer than a book about history. The Title I teacher insists that much of her project planning for the small group Daniel is part of, is used in programming the correct book for Daniel’s interest, as well as the rest of the class’ interest.

… but one thing that I have had to do is to pick book at his interest and level, because the whole immersion thing is so prevalent, it’s really a sensitive place, so I try -- the books we’re trying to lean towards are at his interest level, because he’s the one that’s been struggling the most…(VT, personal communication, February 12, 2002).

She offers that Daniel often carries with him an attitude about reading, and gets frustrated often and off task more often, and attributes some of Daniel’s reading challenges to his “attitude.” Specifically, she mentions that she sees
”peer pressure all the time in that room (her room)” and she thinks that the colored overlays exacerbate the situation.

…and it was the whole peer thing -- that’s my whole deal with the colored overlays is the peer pressure that’s in there big time. It’s hard to determine the effectiveness of it, because there is so much peer pressure with it. I’ve seen it with all the kids in here; I see it with them all. I see it in the closed environment here. They see it as a crutch and they don’t want anything to do with that (VT, personal communication, February 12, 2002).

I’ve watched as the level of book changes for him as well, and something is noticeable: Books for younger children often contain large-print words that are printed on colored images; for a child like Daniel, that is an almost impossible task to decipher (Observation entry, November, 2001).

Daniel has recently undergone special studies testing by the school psychologist, as well as by the special education resource teacher while I was observing within the school system.

On January 16, 2002, the committee for special studies (all participants in testing, along with the county special services individual, and principal) met to discuss the results, and recommended direction for Daniel’s learning path.

Overview - Daniel was born with the cord wrapped around his neck at the time of birth. Has asthma, and takes 3 meds currently. Has talking difficulties (M. Jems, County Social Worker, personal communication, January 16, 2002).

These directional overview statements were given from an in-home observation done the day before with the county special services individual, and reflect accurately what the administration has also offered as part of Daniel’s health related challenges. Further, Ms. Jems indicated, somewhat skeptically, “this child was reported to as not exhibiting any frustration at tasks, no moods, not inhibited because of his challenges,” (MJ, personal communication, January 16, 2002) as well as other things, that as she read down the list, became more incredulous for her to believe. The other people sitting
around the table nodded slightly in agreement at these reports: Daniel is truly a gentle soul that has been taught to obey and to give each request asked of him an earnest try before giving up. These are the same reports I have heard from the teachers, the administration, even the reading resource teacher. Daniel has parents that have brought him up to be mindful of his elders and to respect what is asked of him (DC, personal communication, October 15, 2001; JW, personal communication, November 5, 2001; VT, personal communication, December 12, 2001).

Further observations of Daniel’s general ability in classroom, from one of the two special services teachers:

Daniel understood directions, just didn’t know how to do these things. Had difficulty in finding imbedded punctuation. Handwriting was immature (to kindergarten level). Joan admits that it takes Daniel a long time to write his work; 3 sentences took from 8:45-9:20, and still not finished (Observation, C. Gentry, from January 15, 2002; personal communication, January 16, 2002).

Similar observations throughout the four-month period of time indicated that Daniel would frequently be surprised by the work he would produce, almost as if he knew what he wanted to write but his hands would not cooperate. I noticed analogous patterns when Daniel would speak; often, he knew what he wanted to say, but would be surprised by what came out of his mouth, almost as if his body betrayed him (personal observations, November-December, 2001).

The meeting continued, with additional information offered from the school records.

Dr. Moorehouse (school eye doctor) - said Daniel’s vision was fine, had some type of allergy and Dr. Brandow (family eye doctor) - said he has 20/20 vision, with no refractive error, no medical problem, has tracking problems with his eyes, the exercises should help with that. Mentioned perhaps a mis-alignment of the eye, though no depth perception problem. Ocular differences in movement may cause choppy sight. Colette mentions that the eye exercises are not helping. I
asked Colette about this, since she was going to call the Dr. again, and try to get a more complete understanding of the test results. It also came out that these tests were done in August of 2001.

The county speech therapist, Ms. Van Allen, mentions that he has a wheezing problem, adenoids are enlarged, and he has breathing problems. Perhaps air has a hard time getting through/past these swollen adenoids (personal communication, January 16, 2002).

The information mentioned above surprised most of us; surely there is a depth perception problem, or with a misalignment of the eyes, a blurred vision, or problem getting focused images. Conversation continued on this path for a few minutes, and I remembered journal articles on asthma and ocular motor problems, which I noted to talk with the county specialist at another time. Daniel’s classroom teacher, Joan, offers her assessment of his work to date:

Daniel is learning aurally, not learning by reading. NO improvement at all in math. He can’t see the symbols on the boards, but out-loud math is fine. Tries to answer, but can’t get it out, and gets frustrated, most of the things are backwards, or spits something out and is startled by what comes out. Gets nervous in class too. When he’s not asked to perform, he can talk for 20 minutes! Also, feels that the colored overlays help him to read. Has good auditory reading skills; In guided reading, he is deducing a lot from the pictures. His comprehension is low when reading; rather than reading, he will study the pictures and intuitively pick up on the story line. Handwriting - has the ability of a 3.5/4.0 year-old copy skills. She continues to enlarge text, blocking strips, colored overlays, near/far point copying; and she notices that drawing is hard for him - doesn’t like it at all. He is perfectionistic in his work; when he can’t do it, he tries to hide by going to bathroom, math and writing also (JW, personal communication, January 16, 2002).

The responses and lists of test scores continue in this meeting; I was imperceptibly drawing conclusions that this child had so many problems there was no help for him, and that I was way in over my head in the study of this child for a case study in reading and field dependency. What could I possibly offer in knowledge or observation that would help these people? I continued to listen, but realized later, that I
was drawing a great many conclusions prematurely about Daniel. I was stopped in my conclusionary tract some moments later, when his educational testing scores came up as a point of discussion. Admittedly, Daniel is not without challenges; he does not take timed-tests well, regardless of the subject, and will completely shut down if asked to do something beyond his understanding. However,

Story recall: (that is read to him or taped) is about grade equivalent of 4.8 (fourth grade, nearly end of year equivalent); His general academics is a grade equivalent to 3.6. (3rd grade, second semester); His math equivalent is about a K7. (mid-kindergarten). In achievement tests (Avg: 85-115, these are the broad score ranges), Reading fluency- 80 - these were guessed at, so tossed; Math- 87; Writing/language - 74; Actual knowledge - 106; Passage comprehension 77 or 79; Vocab scores were HIGH; Reasoning was HIGH; Math/verbal was LOW; General knowledge was LOW; Repeated numbers (sequencing) would be AVG; Auditory memory was EXTREMELY HIGH!!; All visual motor tests were LOW, overall, 86 but a very flat 86. Persistence in tasks; sticks with it; Has some immediacy problems with visual perception. This is where he showed us the drawing that he asked Daniel to copy - Drawing tests were amazingly bad. Unrecognizable to most of us; Word to symbol matching - couldn’t do; problem decoding words. Semantics, he tested at 125; grammatical composition, unscrambling sentences (which were all auditory) he did well with; overall 100; Listening comprehension was 98. Phonology was lower (speech); Sound letter identification was 82. The OT Evaluation said he has good muscle tone, but has children’s hands - trying to constantly acknowledge where his fingers are. Visual integration problem - grip for pencil may help. (Personal communication, CG1, School Psychologist, administered and reported, January 16, 2002).

Outcomes of the meeting included the general acceptance that Daniel has some visual/perceptual problems. This is not a fine motor skills problem, though the entire group of professionals presiding over this meeting did question the visual problems, or lack thereof that was reported. Further analysis of the data included a request for an in-depth eye examination by an optometrist, and occupational therapy specialists indicated that Daniel exhibited signs of some kinesthesia and extensive visual integration problems, which may be helped with exercises and body control skills (crossing leg, picking up objects on opposite side of body, etc.) (CG, personal communication, February 6, 2002).
Daniel qualified for daily speech and language therapy, and will be given occupational therapy 30 minutes each week as well.

The outcomes have been interesting and have caused profound changes in Daniel’s learning. Daniel no longer attends Title I class, and now has special education teacher, Colette, working with him each day in his reading and word structure abilities. They have learned that magnetic letters (tactile tools) help Daniel to build schemas with the letters, the words, and the sounds that are represented by those letters when he is able to work with the words in a tangible and active way. He can also display his knowledge for words with the magnetic letters that previously, could only be displayed by writing. Daniel’s writing, like many children that have dyslexic or perceptual problems, is poor (Irlen, 1991; Meares, 1980). The kinesthesia that Daniel exhibits, a condition that is described as “not being aware of where your body is in movement at any time” (CG, personal communication, February 6, 2002) is being aided by the occupational therapist’s work with him each week. Daniel still has a hard time realizing where his hands are and controlling what they should be doing. For most individuals, it is second nature to use a writing implement or an eating utensil, and most of us give it no thought whatsoever. Daniel, however, constantly searches for his hands, moving his entire body when only his arm needs to be moved. With therapy, Daniel may be able to gain a sense of understanding and control over his arms, and to help aid his body into allowing his arms to do something unrelated to the larger body as a whole.

Daniel has been fortunate in many ways; his intelligence has offered him creative ways to process and accommodate those tasks he has been asked to do in class without being completely nonfunctional. Until recently, Daniel often stalled in his assignments.
by feigning the need to go to the bathroom, or feeling sick to his stomach when a task was asked of him that he felt inadequate to perform (JW, personal communication, October 31, 2001). Such things as drawing could make him nervous to the point of distraction; I noticed one day when the children were coloring tessellation patterns, he could not distinguish where one line ended within the patterns and another began. His coloring was a singular representation of an elongated “S” shaped tessellation; *I was convinced by looking at it alone, that he was trying to find the line to “cut it off” and start a new tessellation, but couldn’t easily distinguish the lines.*

Likewise, Daniel’s perception of singular lines on a page are distinctly different than that of a normally-visioned person; at one point, the child psychologist asked Daniel to draw some everyday symbols that he was shown pictures of, and the outcomes were dramatic. Daniel perceived a plus sign as two separate and distinct lines on a page, never crossing, never touching (CG, personal communication, January 16, 2002). A division sign was interpreted as a dot with a line further down the side of the page; seeing this kind of remarkable translation of the image indicated clearly to the participants involved in Daniel’s special study that he was not seeing with normal perception. Daniel’s struggle with visual clarity was now represented clearly in imagery. I recall when I finished testing Daniel for field dependency, it was blatantly obvious that he was extremely field dependent, I went to talk with Joan. I must say, her response caught me off guard. Standing outside watching the class on the playground equipment, I remember her smiling, and saying, “NOW I know how to teach him!” I asked her to explain this later in one of our many conversations, and she responded with great animation:

I tell you what it did, it told me that if you look through children’s books, they’re not all printed on solid white with black text on it, they’re printed all over it,
printed on different places on a page, and they’re printed on top of pictures, look around here - all of this stuff, [FD] is going to make it a lot more difficult to read a variety of stuff, they might be able to learn to read black on white, all alone by itself very efficiently, but it’s going to be a nightmare to read (a map of south Africa, colored and with words printed over boundary lines, and other words) this for Daniel, but, I know that now, and I can do something about that. I can make it easier for him to see CHAD or make it easier for him to see something else, and that’s what it did for me, is that it gave me a whole lot more tools to use, I can think of different ways to present things, I can think of different ways to -- like when we’re doing shapes, and shapes are absolutely horrible for him, and we’re having to do 2-D shapes; three dimensional isn’t going to be a problem, but 2-d shapes on the page, he’s losing them, so I’ve come up with a whole lot of other things that he can do that he’s going to be using his hands to do, and how the shapes feel and doing things with his hands, that will make it easier for him to learn those shapes (JW, personal communication, February, 16, 2002).

Joan has an interesting and accommodative spirit in teaching. She thrives on thinking outside the box to stimulate and excite these young learners in her classroom. Joan has realized that Daniel’s perception of things on a page leave him lacking for the understanding that the lesson may give others. Daniel is a tactile learner. He must be part of the process of learning, whether it is new subjects or old subjects. He must be physically involved with his learning tools in order to understand it fully. To be engaged with the process, to physically understand the addition and subtraction of a math statement, to be part of the building of a word with letters and colors, is to help Daniel understand how things are being put together.

Joan ran with this new information about field dependency, and began incorporating it in her daily teaching methods. She gave Daniel other tools and implements that reinforced his classroom instruction; always offering him colored overlays each time he read, and eventually in all curricula within her classroom. The change was apparent to her; the color helped Daniel focus on the words, and gave him the edge he needed to read, instead of glibly taking shots at words, hoping for good guesses
and strong contextual cues from pictures that accompanied the text. Joan believed and behaved with the colored overlays as if they could help Daniel, Cherie, and others (including herself) to see more clearly, and read more easily. There was no hype, and the children were not guinea pigs of the teacher’s latest experiment. She was “part of the whole” here, and it made the difference obvious.

We realized at almost the same time, that maps like the ones used in classrooms today – a one dimensional, busily bright map – would be nearly incomprehensible to someone like Daniel: someone that with a single line, can get lost, and with many lines, is looking into a sea of blotches. In this instance, even the color distinguishing separate countries is not enough definition; the words, arrows, lines, and boundary sections created such a quagmire of portions, that Daniel did not have a chance at deciphering even a part of it. *My immediate reaction was one of frustration; how do you help a child with these kinds of challenges to learn?*

Daniel acknowledges little of the challenges he faces each day. It is not uncommon to find him tossing the football with his friends on the playground (though I have noticed he never has been able to catch a pass thrown to him), or working with diligence and patience on an alphabet book that needed both creativity and design, writing and drawing on each page. As I looked at his alphabet book, I was reminded of Daniel’s wonderful sense of humor:

*(Joan shows me his alphabet book…) it’s wonderful!*

R is for raisins, I hate raisins!
O oodles of noodles are fun to play with!
M macaroni goes with cheese! I like Huckleberries.
J is for Jelly, Jelly Is Jiggle-y…
A is for Apricots, Apricots are fuzzy!
C is for Cream filled donuts, they make you hyper! (his p is backwards and upside down)

I love Daniel’s sense of wonder and description, his affable way of working to create something that he can be so proud of, and the presentation of it all, finished, to his teacher, Ms. Walsh.

Daniel has made some changes in his educational paths and in his interactions with people in the school, since I began observing him. In early January 2002, the Title I teacher scheduled assessments on all of the children she worked with, in an attempt to gain quantifiable data on the progress (or lack thereof) of the students that are getting additional reading help each day. Daniel, by this time, had undergone his special studies observations, and had become eligible for reading services daily with the Special Education teacher, speech services with the Speech Therapist, occupational therapies with the Occupational Therapist, and no longer interacted with the Title I teacher specifically. He had “graduated from Title I,” Daniel explained, and was thriving in his classroom environment, working with poetry and with his classmates that he so longed to be with. His time spent with the special education teacher seems a gift for him; always smiling, and always ready for the task at hand. I found him whistling on his way to reading class with her: no more stomach aches or lack of enthusiasm for tasks such as reading or writing (Observational notes, February 2002). Daniel was enjoying learning.

Joan pushed ahead in teaching with the use of colored overlays for Daniel, introducing them to his math and other curricular lessons. Daniel changed to a different color overlay for other studies (a light peach color). He finds that that overlay helps him decipher the otherwise undecipherable math symbols and icons. Daniel now uses this
peach overlay in math and social studies; his method of using them, though
unconventional, is working. We tried a multitude of modified stands that might hold an
overlay over the tactile objects that Daniel used in math: idea after idea emerged, while
we tried to design something that would allow Daniel the opportunity to work with the
overlay while working with the 3-dimensional objects and still be able to write answers
on his papers without the confusion created by moving the overlay off of the paper to
write. By using the overlays on all paperwork, Daniel was able to read the mathematical
equations correctly, but in the short time it took to move the overlay and write the answer
in the blank, he would often transpose the number, or write it in mirrored image of the
correct number. He was able to read his social studies information correctly, but was
unable to write it in the correct place without having to start over again at the beginning.
Finally, we hit upon an idea and the resulting email was proof positive that something
was happening with the color for Daniel:

Daniel used the overlay with a wet-erase pen for a social studies worksheet today. He said that [writing on it directly] made it much easier to do-- he also got the
answers right. He spelled the name of Emperor Shi Hiang Di as "She One Di" which is the exact pronunciation. He was very pleased with writing on the overlay (JW, personal communication, Feb 22, 2002).

Using wet-erase pens on the transparencies alleviated the need for Daniel to move the
color away from the information he read through the overlay; it also allowed him a
singular focus -- he did not have to “find” the spot to place the answer again on a stark
white paper. Several days after this trial, Daniel was using this method in all of his
studies, with similar results. I was anxious to hear about Daniel’s assessments since he
began using colored overlays in all subjects, and since he began writing on them directly
with his homework. His teacher offered this one day:
…he was coming up with answers and he was just writing them down, and writing his v-pen, and writing on the peach colored one [overlay] on the work sheet, and he was good with it, absolutely, and now all the other kids are saying “hey, wait a minute, why can’t we do that? “ So, he told Daniel while they were sitting there, he looked up and he said, it’s a lot easier this way, when he was writing on the overlay. And I said you mean you don’t have to move the papers back and forth? And he said no, it’s just easier! So, all of it was easier to him, and then he was telling all the kids in poetry, that it’s a lot easier (JW, personal communication, February 28, 2002).

While I do not expect this to be a blanket panacea, I have observed clear and continuous distinctions in his work throughout my written observations of the last month of research (February, 2002) to know that this accommodation was working, at least for now.

Matthew, Daniel’s older brother, is a quiet, gentle boy in the fourth grade. He likes school, loves learning, and struggles with both due to his almost complete inability to read. And, Matthew is gifted. Bright beyond words, Matthew’s vocabulary generally exceeds that of an eighth grade student, and his auditory compensation for learning is amazing. Matthew has a learning disability, and because of his inability to consistently read above a 2.4-leveled reading book (approximately second grade, not quite half way through the year level), he has qualified for special education services. This service permits the special education teachers to read all exams, tests, and homework to Matthew, and allows him to answer the teacher orally. When this takes place, Matthew does very well in school. When he is on his own, he falls behind and fails (LE, personal communication, February 6, 2002).

For Matthew, his memory is his greatest asset, but he is limited by the inability to read proficiently. His classroom teacher mentioned that Matthew loves to read about sports, biographical pieces, and history, and for those topics, he will venture into a more difficult text and struggle through reading to gain what information he can from it.
Unfortunately, at that grade level of text, pictures are scarce, and visual cues are lessened, availing Matthew with fewer organizers and aids to gain meaning from the pages he tries to read.

Matthew’s spelling is poor and in class, the teacher noticed that although he loves to learn, his interest in homework activities and in-class work having to do with reading and writing is often only done at a bare minimum, and then marginally. It is not that Matthew cannot understand the information, but that often the information is not offered in a manner that he can comprehend on his own.

Matthew will work for his grades, often afraid to ask for help until he’s near the point of frustration, but exhibiting a need to do as much as possible on his own. One of the interesting dichotomies of Matthew’s education, is in the following statement:

Matthew not so much; he tends to fit in, or tries to; he can handle strategies on his own to make himself complete things on his own…he would rather not have to have help, would like to be able to do it himself; so he uses whatever strategy he can come up with to complete it to the best of his ability and hopefully that’s good enough to turn it in and be done, he doesn’t turn away help, but he doesn’t actively seek it. But if it’s a writing assignment or something like that, he’d rather just go sit; he doesn’t like to show his work in front of a lot of people, he’s likes to sit and do his own, and get it done, and turned in and over with (LE, personal communication, February 6, 2002).

Matthew is actually building his vocabulary by repetitious reading of simple books, his teacher said. We talked about his need to be successful with Accelerated Reader specifically. Matthew may test at 80’s and 90’s (very acceptable within the Teacher’s Testing level of ability), and then return to the simpler books, and again test at 90’s-100’s.

He [Matthew] doesn’t mind doing the work on his comfort level, and he reads more books than anybody, … they’re required to read two per six weeks, and last six weeks, he read, he read eight books, but staying at or below his tested level…(LE, personal communication, February 6, 2002).
Daniel and Matthew have been brought up to do just about anything that is asked of them. They have strong parental support.

The one thing right now, Matthew all along has had support from home, his parents don’t expect him to be above everybody else, but they do expect him to do the work, and they’ve always been there for support, and they’re more than able if he has questions, to help him (LE, personal communication, February 6, 2002).

Colored overlays used with Matthew may or may not be a help for him, as they are for his brother, Daniel. In fourth grade, there seems to be a considerable peer pressure within the classroom. Because Matthew gets special services with the special education teacher, the opportunity to use colored overlays each time reading takes place in the classroom may be intermittent (CG, personal communication, February 6-8, 2002). At the time of the interviews, the special education teacher had not been working with colored overlays with Matthew, but intended to do so in the future, so perhaps the practice of overlays may become commonplace with Matthew as well.

He is bright and articulate, and upon first meeting him, I was immediately taken by Matthew’s soft nature and genuine care of others around him. I spent some time talking with him before I asked him to take the Embedded Figures Test. He can actively engage in a conversation at a much higher level than many fourth grade students, and it became apparent through his vocabulary use within the conversation, that Matthew is extremely bright. Although both Matthew’s classroom teacher and the principal thought he would need to be administered the older children’s test in order to test properly (a second series of images, developed for older children by Witkin, et al., 1971), Matthew was unable to disembed the figures from the images at any level of efficiency. Matthew’s results yielded a percentage of 28.6%, similar to his younger brother, Daniel’s, score of
23.0%. Both of these scores indicate a definite field dependence characteristic in the children, as per the scoring structure found in Witkin, et al. (1971). In fact, his overall score was calculated at 5.6% difference between him and his brother; taking two years difference in age and cognitive ability at the time of the test administration, there could be speculation that these results were, in actuality, even closer to each other than the points exhibit (December 3, 2001).

Areas of Focus

In the final month of my observations, I had the opportunity to interview each of the children, and I asked Daniel several very specific questions pertaining to reading, both with and without the overlay. I was interested in finding out what each of the children thought of the colored overlay technique, the self-confidence with which they used the overlays, and the persistence with which each child would continue to use the overlays, in school as well as at home.

What are Title I students’ experiences with and feelings towards the introduction of colored overlays when learning to read?

The colored overlays were initially met with great enthusiasm, as are all new tools in a classroom setting when first introduced. Daniel and Matthew loved the color, and enjoyed the task of finding the correct one for their personal use. Such colors as bright yellow and deep purple were seldom chosen colors, and when asked, the children responded that “the colors hurt my eyes,” or “They gave my eyes little pains,” or “it made me nervous to look through that color.” In each classroom, the children were encouraged to try each of the eight colors and decide on one that helped them see the words more clearly on a page, or see the text, overall, more easily. Each of the children in the second
grade classroom chose a color, as did Joan herself. This one act alone, choosing and deciding right along with the children a color that she would use, substantiated Daniel’s attitude about the overlays, and made it more acceptable to use the overlays in class. After all, the teacher was using one too!

In our final interview, I asked Daniel specifically what he thought about using the overlay when he read. He was having a great deal of trouble breathing that day, and his responses reflected his shortened, very concise answers that often occur when his breathing inhibits his work. Daniel thought that the colored overlay made it easier for him to read. He had explained previously, that the words are “all wiggly” without the overlay on them (DC, personal communications, February 26, 2002; DC, VT, personal communication, December 20, 2001). He continued with his description, mentioning that sometimes, without the use of the overlay, the end of a word is hard to see, and sometimes words do not look like letters (personal communication, December 20, 2001). Many of these descriptions have been recorded before in research regarding colored overlays; Daniel’s comments were unprompted and very similar to other people with visual perceptual challenges in reading (Irlen, 1991).

In what ways do the students’ experiences and feelings change over time with the continued use of the colored overlays?

Within my final interview with Daniel, I asked him if he used the overlay to read all of the time. He responded quickly, “No, I try not to use them to read most of the time” (DD, personal communication, February 12, 2002). As the conversation continued, however, it became apparent that Daniel tried frequently to read without the overlay, but in frustration, would reach for it and continue from then on to use it. Perhaps Daniel felt
like the colored overlay was a crutch that he wanted to wean himself from; perhaps he did not like being different from the rest of the class. His attitude about learning had become more positive since he was no longer in Title I, probably due to the fact that he realized how different the Title I classroom was in comparison to his own class of friends. I looked for further understanding from his classroom teacher, and was offered this:

He really did not like to go [to Title I] - ya know what it was, he came up to me and he said “I graduated” - and he was very proud of himself. And I said you sure did. He’s very excited about working with Colette, and I mean, he’s totally thrilled about working with her. I think the [Title I] reading group he was in was successful, and he definitely has to be successful all of the time in order to cope. . . .The kids know what level they are on, they may not look at the front of the book, but they can hear the reading. They know the words are bigger, they know the words are shorter, so . . . (JW, personal communication, February 2002).

Daniel seemed to view the overlays as something that he should wean himself from, but he also seemed to realize the value of them. He can see his success with them, and knows he can return to them to help him be successful.

I interviewed Daniel at the very beginning of using the overlays in all classroom curricula, and as I watched in the weeks ahead, I did notice a lessened need from Daniel, to be weaned from the overlays. I think Daniel finally understood that this is one tool, not a crutch, which may help him be successful in all of his studies. Also, the opportunity to write on the overlays was a well-received novelty that worked well for both him and his instructor. By using the overlays in this accommodative fashion, Daniel was able to stay more closely aligned with the other students in his class, and that, I believe, was his marker of success.
How do students describe the difference between reading with the overlays and reading without the overlays?

As mentioned earlier, Daniel is not able to see letters, icons, or equations as clearly or distinctly without the overlay. His descriptions of “wiggly letters” and lines indicate that Daniel may have a severe ground/figure discrimination problem due to brightness of the paper, but also that his eye tracking problem may be adding to his vision problems (Meares, 1980; Robinson, 1987; Whiting, 1988). By placing the overlay on a page, he has been able to discern mathematical symbols, written punctuation, and explore some of the subtleties of reading and writing that, otherwise, would have been lost to him in the struggle to gain any visual information without accommodations.

What are the implications of colored overlay use for the students within the classroom?

Several implications have become apparent while watching these children use the colored overlays. The colored overlays used by children that are gaining some accommodative characteristic from them have described reading without them in similar, though sometimes distinct, ways. For Daniel, the “wiggly lines” that make up letters become less “wiggly,” and therefore more visually distinguishable. In observations throughout the study, I noted that brightly colored backgrounds in books were very difficult for Daniel to read from unaided by the overlays. Larger text was easier for him to discern, and he was actually able to break some words apart if the text was large enough, and he was able to use two strips of paper, to block off pieces of the word he was trying to decipher. (The downside to this technique is often that comprehension drops to near zero percent, because the children work so hard at focusing on each “chunk” of
word, they cannot carry through on the storyline of the book, or through the entire word
to get some contextual meaning from it.) However, Daniel’s success lies in his
methodical patterns of discovery, and this is a useful tool for him to use, if other
strategies cannot help.

It has become apparent during this study that there may be some reason to believe
the level of field dependence of a child with reading challenges has something to do with
the strategies that he will be able to actively enlist. Because Daniel is extremely field
dependent (results indicate percentage level at 23.0%, resulting in the highest level of
field dependent learners), the indicators of field dependency may be useful to revisit.

Field dependence, simply put, is the characteristic inability to disembed a part
from a whole, most often noticed in iconic images (Witkin, et al. 1971). If this definition
is translated from iconic images to words (a different type of line drawing, but
symbolically line drawings nonetheless), it becomes a natural progression of ideas that
field dependent learners may have problems disembedding part of a word from the whole
word, even when broken down into the smallest piece of words (Huang & Chao, 2000).
This would indicate a need for alternative methods and tools in instruction for the most
basic learning, that of phonemes, graphemes, and perhaps the entire alphabetic principle.
Without a firm foundation of these parts of the language, students will have difficulty
grasping the very explanations offered by traditional reading instruction (Cooper, 2000).

Additional implications of colored overlay use by students in the classroom may
indicate that those students who read more fluently or with higher comprehension but test
as field dependent, may also benefit from a more tactile learning situation. In Daniel’s
case, the opportunity to use a colored overlay with all written and mathematical
statements may help his comprehension, his fluency, and his success rate to some degree, as observed and assessed by his classroom teacher. (JW, personal communication, February 22, 2002).

The colored overlay is not offered as a panacea for Daniel; it is not idealized as the answer to all of his challenges. What is offered, however, is a tool that may work for Daniel, by reducing the figure/ground discrimination, thereby allowing his eyes to gain some level of focus on the words making up sentences of text. Daniel worked with enlarged text at times, isolation strips to help him focus on single words, as well as the colored overlays. Daniel’s nontraditional challenges created many questions and few definitive answers in this study and in his classroom. It is believed, however, that a combination of tools that Daniel has learned along side of the strategies that he can now employ, has given him the opportunity to read more effectively and more fluently (personal observation, January 14, 2002; JW, personal communication, February 22, 2002).

Cherie

Cherie is a beautiful child, bright and sunny, and always ready for anything. She is anything but an ordinary child, having the rare disposition of always being pleasant and always ready to work on the next task at hand. Cherie is a child of above average testing ability and an extraordinary desire to learn. She can light up a room when she enters; referred to as “Shiny” by several of the teachers in the school, Cherie’s disposition matches her nickname. Even when faced with difficult tasks, she sets out to succeed, will find the tools necessary to do so, and then proudly display that success to those around her.
Cherie loves the idea of reading; from the first time I met her, I was struck with what a respected task reading seemed to her. I watched her as she and her friend, Kelly, went to the bookmobile to get library books to read. Kelly is a strong reader, well above her grade level, and Cherie wanted to read just like her friend. Both girls raced back from the bookmobile to show me their picks for the week. As so often was the case, Cherie picked books that were well above her present reading level. She was not discouraged when the books became difficult, and her teacher did not discourage this practice either. When asked about it, Joan replied,

90% of the books they read should be easy, sometimes they’ll bring me a book, or they’ll start reading and immediately close it and say “this is way too hard, I need another one” and they’ll go get another one, and I do a thing called “the three bears” and we talk about books that are too hard, books that are too easy, books that are just right. And instead of calling them books that are too hard, we call them books that are too hard for now, but they’re fun to read anyway; so get them, even if they’re too hard, because they’re fun to look at (JW, personal communication, February 19, 2002).

Obviously, by having control over when a book is too easy or too hard, the children can gain a sense of confidence without pressure, and can also feel comfortable reading any level book. This in itself is a strong tool for children to learn. The ability to improve their sight word recognition by reading easier leveled books than their tested level allows the children to gain self-efficacy, practice sight word recognition, and be positively reinforced, regardless of the reading outcome. And, trying to read books that are too difficult still gives the children an opportunity to look at the books and strive for that level in the future.

Cherie was a participant in the Title I program at the beginning of the year. She was placed in Title I primarily because of comprehension problems in reading, according to her classroom teacher. She tested at benchmark on the PALs test, but her
comprehension was low, and, in an attempt to ward off any further problems as she progressed in her early learning process, Title I was considered a good option. Midway through the school year, Cherie was retested using the STAR test, a computer generated test that evaluated vocabulary and comprehension for young students, and tested at or above the expected level. In doing so, she was “discontinued” from the Title I program, and has joined her classmates once again in daily classroom reading. Upon being “graduated” from the Title I classroom, Cherie entered the classroom and announced she’d graduated and needed a book on “jaguars” like the rest of the class. Ms. Walsh gladly complied with a demand such as this, and Cherie took off in her new reading environment.

Cherie’s difficulties in learning are less obvious than Daniel, though no less necessary to deal with now, to ensure strong learning in her future. Cherie struggles with letter recognition of b’s, d’s and p’s, in spite of her reading ability which is stronger than others in the Title I group – it may be her attention is not completely focused on the letters, or she truly may see things differently, but in testing, she routinely reads these three letters incorrectly. Even with a series of tools to remember the differences between b and d (“make a bed with your hands, the ‘b’ comes first”), Cherie often races through a word, substituting the d for b sound or vice versa (personal observations, November -- December 2001). In second grade, that isn’t a “red flag problem,” but it can inhibit learning if the strategies to sound out a word are led by an incorrectly guessed letter sound (VT, personal communication, November, 2001).

In reading, the use of colored overlays helped Cherie perhaps to focus on the written word, but more probably to reduce ground/figure discrimination of the printed
page. After trying the various colors of the overlays available, she chose the rose overlay, a soft pastel color that markedly softens the background, and allows the letters to stand out more distinctly. She mentions that she can read with or without the overlay, but that the overlay helps her to see smaller words more clearly, and helps when the words are hard to read (CH, personal communication, February 26, 2002).

Cherie talked with me about reading, and about the fun of reading. She hit upon, almost by accident of interpretation, a question I had regarding her reading proficiency.

I asked Cherie, “What do you like to read best?” - I can only read like, big words, but sometimes I can read little words, but not if they’re like that big (shows me tiny font size) I can’t read that…Yeah….like this or like this or like that (shows me 10 pitch), then I can’t read it. What happens when it gets real little? They get like that, I can’t read them. They get all blurry…(CH, personal communication, February 26, 2002).

The conversation went on to other subjects, this time Cherie’s favorite book, The Titanic. She admitted several times over the course of our conversations through the halls, on the playground, in the Title I classroom, etc. that she may get her eyes checked, and she has indicated there are some things which are difficult to see. I asked her to read from a new book she had not seen before, both with the overlay on the page and without it. The conversation trailed off to another facet of reading, but was soon brought back to the topic of her vision, by none other than Cherie.

Do you read with a colored overlay, Cherie? Sometimes - (she points to the rose colored overlay), ‘cause I can’t read with the others [colors of overlays]. But the rose helps? Yup, and my mom, she said she might get me some glasses. My mom said yeah…(CH, personal communication, February 26, 2002).

Cherie’s reading was slow and steady over the course of the study, and she made good use of the various strategies that she has been taught through Reading Recovery and Title I programs. She’s methodical about sounding out a word that is unfamiliar.
Although her attention on any one thing is shorter than the average seven year olds’, she works at reading with a renewed sense of commitment each time she succeeds in sounding out a new or unfamiliar word. At the point of mid semester testing, Cherie tested at midyear, right on grade level. “She’s reading at mid second grade level or above that, so she’s doing fine,” according to her classroom teacher (JW, personal observations, February 6, 2002).

In the process of working with these children, I had the opportunity to ask them many questions about reading, books, writing and drawing. I asked Cherie the same question I asked the other students, and each child answered in a totally different way.

Tell me two things you really like about reading?
You can find new stuff in books, and you can even learn new stuff in books, you can make up your own book, and plus, another thing is, you might not know it what’s coming up in a book (CH, personal communication, Feb. 2002).

She had quite clearly stated the wonder of books, all in one sentence.

Cherie’s field dependent test was much more puzzling than Daniel’s was: Cherie had a good comprehension of the pictures, and in the first series of pictures, understood and recognized the shapes that were embedded within the larger images. Her difficulties began when she worked with the second set of images, searching for a shape much like a silhouette of a house embedded in these pictures. Although the images were somewhat identifiable, she was unable to find the shapes in these images at all. Cherie lost focus easily with this part of the test; perhaps her attention span had reached its maximum capacity, or perhaps the novelty of the test had worn off.

Her final scores on the CEFT were diagnostic of a person with field neutrality (overall score of 50%); her ability to find shapes within images with time and concentration was apparent, but she was unable to pick the images out of the pictures
quickly or with much confidence. She asked me repeatedly, “here?” when I gave her a
new picture to search; it was much more tentative than it was affirmative as it was in the
initial set of images. It was discovered, albeit too late, that Cherie was holding in her
hand, a small triangular shape from the group of triangles we had worked with a few
minutes before; she ran her fingers around the edge of this shape all the while looking at
the images to find the shapes embedded in the images. This one piece of information
could have very easily changed the scoring for this young person; tactile sensation of an
artifact can easily and positively aid the dimension search of the image I had asked her to
find (Witkin et al., 1971). With a small triangle (approximately the same size) in her
hand underneath the desk, it is quite possible that she gained the tactile reinforcement to
find the shapes within the images.

Cherie has had other difficulties in class aside from reading and comprehension;
she has had difficulties in grasping many of the concepts in class with math and with
numbers. For instance, concepts which use organizers to build schemes such as learning
to tell time, completely eluded Cherie – the standard teaching tool, a “Judy clock” was
ineffectual in teaching her the concept of hours, minutes, and seconds. She failed to see a
pattern in the numbers and the gradations of the time in minutes, and was woefully
unable to configure the Judy clock with an appropriate time, if asked of her. The concept
of counting money or making change was another that didn’t make sense to her. For her,
foundations upon which schemas like this are built were not available with traditional
learning techniques -- she was not comprehending either quarter hours or quarter dollars.

Joan, her second grade classroom teacher, tried using tactile counting blocks with
Cherie, much in the same manner she used them with Daniel. Her idea was to give these
children a 3-dimensional representation of the problem at hand, that would, hopefully, give them a stronger sense of physical connection to it, and therefore, it seemed, a better understanding of the process. Cherie gained an edge with the three-dimensional blocks in math, but still found difficulty in counting change or telling time. During one of our interviews, her teacher talked with me about this:

Oh my gosh…the clock - - the stupid clock that we have that, it’s the Judy clock, they’re bright yellow with the blue thing on the outside, and I was looking at that one day, and I was thinking “How in God’s Name can they see this, there’s no way!” And Cherie can’t tell time, at all, I mean, she cannot, and here we are showing her on this little Judy clock and then I’ve got that she was trying to use that also has all this writing and these really cool stuff, but she’s not going to be able to distinguish all that stuff, so I’ve got to find something that’s just one color, and doesn’t have a lot of stuff on it, and the Judy clocks have a lot of stuff on them; and what I want to do is find her or make one of the clocks that she can use…(JW, personal communications, February 22, 2002).

It started to make sense: by giving Cherie three-dimensional props to build her sense of understanding, she was able to build a stronger foundation and understanding of the concept. Even children that may be field-neutral exhibited some display of needing additional, alternative methods of information in order to completely develop their understanding of the process.

Cherie’s need for tactile learning became obvious when further lessons on the Judy Clock gained nothing more than a hopeless look from her. I mentioned that I had seen a foam clock in a soft rosy peach color, a similar color to the overlay that Cherie was accustomed to using. I found one the following day, and brought it into class to see if a three-dimensional clock could, in fact, help her to understand the concept a bit better. Within two minutes of taking that clock apart (all parts were puzzle pieces that could be taken apart and replaced again, to build the clock from the ground up), she not only had it back together, but told Ms. Walsh, “Look, there’s a pattern here” and pointed out the 12,
3, 6, and 9 all being one color, and all being at the “quarter hour” time. She had it, and a series of challenges with times revealed just how completely she had understood the concept. A sense of absolute triumph came across her face, and she was rewarded with both praise, and the clock to take home and practice with there. Even a week later, she was still beaming at the ease with which she realized the concept of telling time. What perhaps she did not realize, nor did she need to, was that by placing things in her hands that were both non-invasive in color and were three dimensional in nature, she was able to grasp a concept that had eluded her for close to two months. Self-confidence carried Cherie through with reinforcement of the concept at home, at school, anywhere people would test her knowledge of times. Clocks created from other colored foam were tried out with other students suspected of needing three-dimensional learning, and they too were able to, through a sense of touch and dimensionality of tools, grasp the concept in whole and move on from there.

Areas of Focus

Cherie was an excited and willing interviewee for this study, and many of her responses were typically “Cherie” in the brightness and positive responsiveness.

What are Title I students’ experiences with and feelings towards the introduction of colored overlays when learning to read?

Cherie admittedly did not use the overlay as constantly or as consistently as Daniel. Confined to reading only, Cherie found the overlays to be helpful. I asked her to elaborate on this:

Do you like to read with the overlays? Sometimes. Sometimes it gets a little pain. It kind of gets on my nerves. The color? Yeah, sometimes. What happens with the others? Nothing…Why? Cause I can’t read with the others. But the rose
helps, huh? Isn’t that funny? Yup, and my mom, she said she might get me some glasses...(CH, personal communication, February 12, 2002).

Cherie showed me a book with small text, and explained to me that the overlays helped her to see the small text, but that with larger text (also showed me an example of this), she did not “need the overlays.” Probably an accurate description, it is surmised that Cherie is not using the colored overlays in quite the same manner as Daniel. Because her eyesight may need modification with lenses (several observations noted this throughout the study), she may be verbalizing the concept of “fuzzy” letters instead of understanding the concept of figure/ground discrimination, and the process with which the overlay may aid this.

Cherie seems to have better fluency with the overlay on the book, especially if it is placed over the text properly (shiny side down), and she is not paying attention to the color, but to the book (observational notes, November-December, 2001).

Some of the other kids, like Cherie, it just makes it easier to read! The starkness is gone, and there is no glare, and it’s just more relaxing … (JW, personal communication, February 28, 2002).

Cherie has been very comfortable using the overlays in Joan’s class; not surprisingly, all of the children are comfortable using the overlays in that classroom. Joan uses her overlay along with the children, reducing the stigma attached to using something unique or specific as a “tool” in reading. She has, quietly and effectively, erased any point of peer pressure with these overlays within her room (personal observations, November 5-7, 2001).
In what ways do the students’ experiences and feelings change over time with the continued use of the colored overlays?

It has been observed that a great change in experiences with overlays for Cherie (and Daniel) lies in the change in their reading environment. Initially, Cherie was using an overlay in classroom reading with Joan, her classroom teacher. These overlays were made available to the children without permission, the teacher also used an overlay, thereby instilling a sense of commonality to the children about the tool, and if the child decided to try to read without the overlay, there was no fuss made about it. The children can make these decisions and not be challenged in this room; they are taught a sense of independence and assertiveness. If the children think the overlays are helping, then it is their right to ask for them, according to Joan. The change in experiences then, arose from the ability to decide whether they wanted to use the overlays or not; in Title I, the reading specialist offered the overlays to the children in a different manner. She explained her general procedure to me:

Well, I just make it a voluntary thing, and I don’t know if that’s okay, or not, I think that if colored overlays, if we at some point know that they totally are the thing to do, which we aren’t convinced of that yet, then, I think there needs to be some teacher training involved and have a way to encourage children in such a way that you don’t run into all this peer pressure and stuff on the side (VT, personal communication, February 12, 2002).

Clearly, she felt that what the children were exhibiting (when they refrained from using the overlays) was peer pressure, and not assertiveness or even testing their own strengths without the overlay. Also, it has been noted, that while the Title I teacher worked with these children every day, it was in small group, with a multi-faceted schedule needing to be met; it was a difficult schedule to adhere to without the addition of colored overlays being passed out and collected in that 30-minute period.
I watched the children for more than two months from the vantage point of the reading specialist’s room, I noticed when the children used the overlays and when they did not. I observed their reading with informal running records, and I noticed when they read to themselves, the attention paid to the colored overlays. I noticed that the reading specialist’s task was to follow along while the children read to her, rather than reading a book with the children, as they were used to in their classrooms with their teachers. In the four months of observational time in that room, the teacher never altered her tactics of following along while sitting aside the child as he or she read out of their book, never read from her own book, or used an overlay with the children. These are subtle differences, but for children of this age, noticeable differences (personal observations, November 2001-January 2002).

How do students describe the difference between reading with the overlays and reading without the overlays?

Cherie explained that there was not much of a difference with or without the overlay, unless it was tiny font, and then the overlay helped her to see (CH, personal observations, February 26, 2002). Again, it is important to note that several times, she had mentioned the potential visit to the eye doctor in the future. Because of her mother’s present financial situation, there may be a considerable lag to realizing this visit. However, if the colored overlay in fact, helps Cherie to focus on the words better, perhaps the color is cutting some of the visual fuzziness of the letters. Because these children are not verbally adept at describing what they see with the overlays, it is necessary to find ways to ask them questions that may reinforce the statements they have made, or clarify their descriptions. Personal observations throughout the four-month
period did indicate that a visual problem with Cherie might be apparent, although without conclusive evidence, remains speculation. At this time, however, Cherie’s reading has been categorized most often in early chapter books, which predominately use larger text and fewer pictures than the previous levels of books she was reading.

*What are the implications of colored overlay use for the students within the classroom?*

Implications of colored overlay use for Cherie remains primarily with her reading. Because she finds comfort in the peach colored overlay, she actually does read more fluently, and comprehension seems to be increased with use (personal observations, January, 2002; VT, personal communication, STAR test results, January 25, 2002).

The CEFT was a more important implication within the classroom for Cherie. Because she scored at or near 50% (or field neutral according to Witkin, et al. (1971)), it was questionable as to the depth of her field dependence, her need for additional tools and strategies for learning, and whether the field dependence had any relationship to the need of the colored overlays. By process of use, we knew that the colored overlay did help Cherie with fluency, at the very least, and perhaps gave her some comfort with the bright white pages of the books she was reading. However, she mentioned time and again that she did not need to use the overlays all of the time in order for her to read, although she was unaware of the minor changes in reading comprehension and fluency that the informal running records exhibited when she did use colored overlays. Further, the Title I teacher did not feel that the overlays were of any value for Cherie at all, even though the classroom teacher thought they did indeed, offer her some comfort while reading, and thus, offered her a higher success rate in reading. Still, it was apparent that
Cherie was not totally field independent, and the overlays were working for her in some capacity, so I needed to find the connection.

That connection came in the form of the foam clock. Having a choice of colors to work with, Cherie immediately tagged the light peach colored three-dimensional foam clock as hers, and set about figuring how to take it apart and put it back together. The peach color, very similar to the overlay she was using, offered her a sense of comfort once again, and the tactile sensation of the tool offered her a connection with the process of understanding how the clock worked. The connection between the field dependence, the need for tactile tools in learning, and the obvious and remarkable change in learning for Cherie with this tool indicated that perhaps this too, had something to do with her level of field dependence. The teacher suggested this to me as well, and we talked about it.

And Cherie can’t tell time, at all, I mean, she cannot, and here we are showing her on this little Judy clock and then I’ve got that she was trying to use that also has all this writing but she’s not going to be able to distinguish all that stuff, so I’ve got to find something that’s just one color, and doesn’t have a lot of stuff on it, and the Judy clocks have a lot of stuff on them; and what I want to do is find her or make one of the clocks that she can use…(JW, personal communication, February 19, 2002).

The following day, a foam clock had been introduced to Cherie; later that day, the conversation continued:

And now that she’s got it on this one [the foam clock], and she’s not having any trouble with the other one [the Judy clock]. (JW, personal communication, January 19, 2002).

And finally, the most dynamic of implications of the overlays in the classroom was the fact that they became a non-issue in the classroom. The fact that Cherie was no longer in the Title I program implied that any sense of peer pressure that may have been
given there was completely eradicated within her new reading environment. The classroom as a whole, used the overlays for a multitude of reasons, but their use was not indicative of a reading challenge or any other peer-related issue in this class. The overlays were simply, and quite profoundly, a tool that was used by any or all in this classroom (personal observations, February 28, 2002).

Coming back into the classroom for brief observations during the last week of data collection, I noticed that as many children were reading with the overlays as were not; the novelty of the overlays had worn off, and the usefulness was apparent, for at least a few.

Lee

Lee is the oldest of the children participating in this study. At the age of nine years, he stands tall and wiry, evidence of a taller and skinnier Lee yet to come. He has sandy colored hair and beautiful green-brown eyes, and points with long, delicate fingers beneath the words as he reads. Lee takes learning in stride, and tells me that his favorite subjects are reading and math, the two specific subjects that have caused him much consternation (JL, personal communication, February 22, 2002).

Lee has a rich family life and talked often of his grandfather, whom he visits frequently. Lee talked of visiting with his grandfather on several occasions as I listened, and I got the impression that those were very special times for him. His parents work long hours at a local plant, but always make time for school meetings and visitations with teachers (DC, personal communication, February 26, 2002). Lee is fortunate to have parents that are so invested in his education; his parents know of his reading challenges, and make every effort to be part of the force behind his success. Most recently, I was told
by the special education teacher that his parents have requested colored overlays to be sent home, so that Lee may have benefit of the tool during all of his reading time, both at school and home. The school had given Lee’s parents the overlays during the last week of my research, and Lee seemed pleased that he would have an overlay at home for use there as well (LS, personal communication, February 27, 2002).

Early on, Lee’s use of colored overlays has been somewhat more sporadic than the other children in this study. His classroom teacher methodically administered the colored overlays to each of the children in Lee’s reading group in class; some of the children played with them more than they used them as a reading implement, while others pushed them aside completely. For Lee, the turquoise overlay seemed to help him see things more clearly, and he was initially enamored with the tool (personal observations, October 31, 2001). However, his most concentrated time of reading was with the Title I teacher, a teacher that neither went through the process of choosing colors with the children, nor fully understood the concept of the overlays (VT, personal communication, February 12, 2002). Lee used the overlay in the Title I group while the other children in there also used them; but after approximately eight weeks, he began to refuse the use of the overlay while interacting with the Title I group (personal observations, December, 2001). Similar reports were coming from his classroom teacher.

We ran into a point where his effort had dropped, and I don’t know if the two were combined, but around Christmas time, his effort had dropped in the math class, and she [Jean] had seen the same thing [in his classroom]; things like multiplication, and quick things that he would really know if he worked at it…(BM, personal communication, February 27, 2002).

At this point, all of Lee’s teachers were recognizing a drop off of his work, and an increased apathy about class work in general (JL and BM, personal communications,}
December 20, 2002). The reading teacher attributed it to peer pressure, stating it in this manner:

…and it was the whole peer thing -- that’s my whole deal with the colored overlays is the peer pressure that’s in there big time. It’s hard to determine the effectiveness of it, because there is so much peer pressure with it. I’ve seen it with all the kids in here, I see it with them all. I see it in the closed environment here. They see it as a crutch and they don’t want anything to do with that (VT, personal communication, February 12, 2002).

Lee is a gentle soul that does not want to be labeled as different in any situation. Something traumatic occurred in his past that is spoken about with concern and caring, but is never discussed openly. Whatever it was, it has helped to shape much of Lee’s character and has affected his ability to learn (VT, personal communication, October 30, 2001). Lee likes blending in, and loses his anxiety and his trepidation in all scholastic activities when he becomes “just one of the students.” To single him out by use of a specific tool, or by centering attention upon him, makes him noticeably nervous, awkward in answering any question placed upon him, and ultimately, unable to function in class (personal observations, December 2001-January 2002). Lee does best when he’s comfortable with the level of learning, the students around him, and the opportunity to be part of the learning process inconspicuously. Whether that plays into peer pressure or not is speculation at this point.

I asked his classroom teacher what she thought may have been driving the refusal of using a tool that clearly, even to Lee, helped him to read. His classroom teacher commented on this in one of the informal interviews:

I think that was self-imposed insecurity. His peers enjoyed using the overlays, and many of them were using them. Maybe when those who didn’t need them stopped using them, he felt he should stop also. But he really feels more confident when using it, so eventually he went back to asking for it (JL, personal communication, March 19, 2002).
However, Lee’s continued reading ability with the colored overlay was still largely unpredictable. Depending on Lee’s health, sleep, and emotional well-being at the time, his reading could be a wonderful success, or a miserable failure on any given day. There was no rhyme or reason; Lee’s level of learning hinged on many factors each day, and the factors were in a constant state of flux.

Lee is easily discouraged when reading. If something seems to be difficult, he will say it’s too hard. He also says he skips over words, or chunks of words, when he’s reading if they seem too difficult, instead of using the strategies he’s learned to decode words…When Lee gets overwhelmed, he tends to just tune out. He doesn’t like to ask for help during a lesson, so when he gets bogged down, his mind tends to wander. This may be why he needs instructions repeated often (JL, personal communication, March 19, 2002).

His reading continued to be labored and awkward without the overlay, and when frustration would set in, he returned to using it once again. When asked (at the time) if he thought the overlay helped, he said yes, but it was something else that fueled him not to use it – others in the Title I classroom had decided they did not need the colored overlay either, and in truth, they probably did not gain anything from it (personal observations, December, 2001). However, Lee used it and mentioned that it did help; yet he was not using it while reading in his classes. After Christmas break, Lee was once again willing to using the overlays, both in his personal time reading in classroom and during his entire class time reading in Title I. His reading improved markedly, and his comprehension was increasing as well (JL, personal communication, March 19, 2002; VT, personal communication, February 12, 2002). Most significantly, his usual procedure of skipping whole lines or missing ends of sentences while reading decreased significantly with the continued use of the overlay (personal observations, January 18, 2002).
My notes indicated that Lee did gain some accommodation with the use of the overlays, but that his consistent use was still in question. I spoke to both his reading teacher and his classroom teacher, to see if they felt Lee was getting any consistent help from the overlays. The reading specialist indicated to me that there was some change in Lee’s reading, although she is clearly suspect of the process and its outcomes.

… but for Lee, I think it made a difference at least some of the time, …and I don’t know the reason; I don’t know if it’s confidence, or if it’s the novelty or the fact they think that this is supposed to help (VT, personal communication, February 12, 2002).

Lee’s classroom teacher stated it another way:

Yes, it [the overlay] helps him in many ways. To Lee, the words look like “blobs” without the overlay. He says he can see them more clearly when using a colored overlay. I also see increased fluency and comprehension when using them (JL, personal communication, March 19, 2002).

The administration and the classroom teachers feel that Lee processes information differently than the other children in his classroom. He works best when given concrete, tangible examples of the problem with which he is faced. Early in the research, I listened as Lee’s math teacher described what had become standard procedure to engage Lee in learning:

… He’s not processing things the same way the other kids are; When he takes in information auditorily, he catches that first part and it’s winding around in his mind somewhere and then it hits him; but he’s so far back from the discussion that he’s then going, okay, now I don’t know what to do with this information because I missed everything after that, while I was processing point A (BM, personal communication, February 27, 2002).

In math, the teacher finds that Lee needs tactile sensation almost constantly, to be physically a part of the process of the problem, in order to be engaged with the problem’s answer:
Betty talked with me about Lee’s math situation: multi-digits give him the most trouble, reading left to right, when he wants to read right to left. First unit of math, he did fine, but the 2nd was not good. When Lee is asked to process something without visuals, he has a great problem doing so. When a money problem is done with pennies in hand, he gets it easily then - needs visuals (personal observational notes, November 14, 2001).

Months later, the observations are the same from the math teacher:

…if I call on him and physically involve him in the conversation or the activity, and have him walk across the room and physically involve him, then that helps a LOT, he’ll get it then for sure. I have a bunch of kids that I have to physically engage in the process and discussions, and he’s just one of them on my list in my head….we just need to grab him and do more physical, tactile stuff. He’s more of a tactile learner than anyone I’ve ever seen (BM, personal communication, February 27, 2002).

Lee must be completely engaged in the process of learning in order to understand the process (BM, personal communication, February 27, 2002). Especially in math, Lee’s teacher found him unresponsive to questions pertaining to class problems, when he clearly had no understanding of how to proceed with the problem.

… [if you read the math questions to him, he gets them more than if he works on his own], but you have to go through it and then talk to him. If you just go through it and then leave him there, he won’t get it. But, its’ not that he can’t grasp the concept, because when he does, boy can he fly! It’s just that for him, it’s so much work (BM, personal communication, February 27, 2002).

His classroom teacher explained how Lee works within a whole class environment:

Lee seems to need concrete examples, as well as repeated instructions in class. He seems to take a little longer than normal to process what he’s been told (JL, personal communication, March 19, 2002).

The math teacher and Lee’s classroom teacher have intimated that they may try the colored overlay in math as well as other subjects with Lee before the end of the year. To introduce the colored overlay in all curricula seems a small step if, like Daniel, it helps Lee to find focus and understanding of an otherwise undecipherable language. I
have asked on several occasions whether the colored overlays have been implemented in math, specifically, and even offered the anecdotes of another student that has wonderful success with them in all curricula; still, they are a tool that seemingly has not crossed the boundaries of curricula. I have been curious as to why, but when posed, the answer has been repeatedly “by the end of the year.” By the end of the year, the child may or may not be farther behind in the process of learning, and may or may not have created additional coping mechanisms for the lack of understanding of the context.

Lee’s CEFT results were indicative of a child that may be having problems with organizers, multi-tasking instructions, and the need to have tactile information to promote and reinforce learning (Chmielewski, 1998; Witkin, 1971). Lee’s scored at 39.2%, and due to his age, it was not surprising that the first half of the test, a test created for younger children, yielded him seven of the thirteen answers correctly (personal observations, December 3, 2001). The second part of the test, Lee yielded a total of four out of fifteen correct answers, one of which was correct because we had placed the overlay on the image (#H-15). Still, Lee’s ability to find the embedded figure was marginal, even in the section of the test that was created for children younger than he. Lee had a firm vocabulary use of terms in describing the images as they were placed in front of him, but clearly was lost when searching for images that were embedded in either colored or black & white images. While the colored overlay placed over the image yielded Lee a correct answer, it remains completely unsubstantiated as to whether that helped him to see the embedded figure or not (personal observations, December 3, 2001).

Often, throughout the observations and interviews, I had an opportunity to observe Lee in Title I word building classes with the Title I aide. Here, the children
worked with singular letters in upper- and lowercase, which were used to build and sound out words, and create new words from the letters. Lee loved doing this, although words like “friend” would completely elude him -- his trials included

FRINE FRINED FRIDE FREIND

Working in small groups in front of clear plastic trays, he continued working towards the correct vowel combination as the teacher looked on. Several iterations later, Lee would arrive at it correctly and be quite full of self-satisfaction because of it. He did not give up in this room; he loved the word games, and the challenge – he even seemed genuinely pleased with spelling tests, although he usually made mistakes in the process (personal observations, December 12, 2001).

I asked Lee what his favorite things in class are, and he responded quite enthusiastically:

The word tests. Really, you like tests? Yeah….Do you like word puzzles and stuff? Yeah, I like doing those. Do you like crossword puzzles? (Enthusiastically!) YEAH!!! …

...What’s your favorite subject in school? Reading and math. How come? Give me a reason for each. Well in math, we get homework, and I like doing homework; and in reading, I get on different levels of stuff (LS, personal communication, February 27, 2002).

Clearly, this student is not disengaged because of the competition of the classroom, or of the work; there is something else that stops him, makes him wander while class is going on, and becomes a frustration when he cannot be actively involved in it.

Lee also knows he does not read like the other children, and it is a noticeable difference for him as well as his teachers. He is diligent with the strategies he has been taught through Reading Recovery and Title I, but at times, even these strategies are not
enough to help him through. With complete concentration, quiet, and a high level of interest in the story, Lee can read if all the factors are right. His reading is slow and labored, but he has an indomitable spirit to learn how to read. He has learned accommodative strategies to help him find ways around words that look funny or strange. It was not until he realized that, if he employed these strategies with the use of the overlay, he succeeded.

Lee loves to read. I think he has developed many coping skills, which allow him to read fairly successfully. He is able to get the main ideas of the story, while not grasping many of the details within. He really enjoys the stories he reads. He is very careful to choose books that he is comfortable with (JL, personal observations, March 19, 2002).

And finally, Lee’s progress perhaps speaks the most ardently:

Lee has shown 1 year’s growth over a 6-month period. I have seen this in Accelerated Reader also. He is currently testing successfully at 2.9. He began the year at 1.8 (JL, personal observations, March 19, 2002).

He explained to me in our last interview, “My goal is to try and get up to 3.8 (Accelerated Reader Level) by the end of the year.” I figure he just might.

Areas of Focus

For each of the participants in the case study, there were different methods of colored overlay introduction, and different methods of administering the daily use of them. For the children in second grade, the overlays were easily available and the number of children using them was substantial within the classroom (multiple personal observations, November, 2001); for Lee, however, the number of children using the overlays decreased significantly within the Title I group, and became singular in number within the classroom in which he spent the majority of his time.
What are Title I students’ experiences with and feelings towards the introduction of colored overlays when learning to read?

From the beginning, Lee was excited about the prospect of using the overlays in reading; he had, through a series of trials and errors, tried each color, and found the turquoise overlay to be the most advantageous to use. As mentioned before, Lee went through a period of refusing to use the overlay, but it became evident to everyone, Lee included, that he did gain an edge on his fluency and perhaps even his comprehension, when he used this tool (JL, personal communication, November 15, 2001). The novelty of the overlay helped to excite the children within the classrooms, and for a period of time, it allowed Lee to be one of many users within the class, rather than one of the few. However, as with all novelties, when the newness wore off, those children that really did not need the overlay in order to read more effectively, cast them aside and moved on.

The classroom teacher has noticed not only increased fluency, but also increased comprehension of the words and of the story that Lee is reading when he employs the overlay (JL, personal communication, November 12, 2001). An entry from my daily observations:

Jean tries the colored overlays with him [Lee]. He reads more fluently, maybe because he’s read this book before, maybe the overlay. His fluency has picked up a bit, again, maybe because he knows the story -- maybe it’s the overlays. He reads on -- stopping completely at words he doesn’t know. He reads both with and without overlays - checks his comprehension. Lee walks away with Blue overlays lying over his pages. As he pulls his overlay up to look through it, just as the other has done, he explains the overlay to another student, and then returns to his seat. I wonder what his accelerated reader score will be? He must read aloud, but he sounds out words while he reads -- Lee is asked by a fellow classmate if he can use an overlay “you can ask her for one, she might give you one” -- he wants to know what colors there are to choose from! Time to get to lunch now. Lee asks if Clay is going to ask for an overlay too 😊 (personal observations, November 12, 2001).
Lee was given the opportunity to use the overlay often; his teacher had had some prior knowledge of overlays from talking with fellow teachers, and realized that Lee looked on it with excitement and hope. Both she and the math teacher had been looking for tools and methods to help Lee become more engaged in the daily work of class; for reading, perhaps this tool would help him gain some ground on reading.

*In what ways do the students’ experiences and feelings change over time with the continued use of the colored overlays?*

As stated previously, Lee was the participant in this study who did a complete turnaround on the use and desire of using an overlay. According to the observational notes, Lee began balking at using the overlays sometime later in the year, but at the beginning of the Spring Semester (January 2002), Lee is not only excited about using the overlay again, but actually experiments with the peach overlay, and begins using that one intermittently. The change in color does not seem to affect the amount of aid Lee receives from reading through these overlays. It is interesting to note that Lee does not offer a reason as to why he refused the overlays, nor does he offer an explanation as to why another color suits him recently. He still works with the turquoise overlay, and as long as it is useful for him, the teachers have explained to me that they do not wish to ask too many questions, and allow him the experience of the tool.

For several weeks in late January, Lee used the peach colored overlay with Title I group, and continued to use the turquoise overlay in whole class groups. Lee has a reason for this, I am sure; however, it is not important, if he continues to gain in fluency and comprehension, and, as his classroom teachers have said, confidence in reading.
How do students describe the difference between reading with the overlays and reading without the overlays?

The differences in reading with and without the overlays are apparent for Lee; the overlay transforms the text:

*What color do you like to use?* I like the turquoise. *Do you think it helps you read?* Un-huh (…but shakes his head vigorously). *How so?* It’s easier on my eyes. *What happens when you take it off the paper?* It’s harder…*what do the words look like?* Black -- they look like blobs. *Hm. That would be really hard to read, if the words looked like blobs, wouldn’t it?* Yeah, it is. *But when you put the overlay over the words? What do the words look like then?* Just words (LS, personal communications, February 27, 2002).

*Blobs. Wow, I thought, how could someone get a handle on that kind of obstacle every day, and in every class…*

*When you look at a book like this, and you start reading, what do the words look like on the page?* Uh, like um…words and sometimes blobs. *They do look like blobs? Do they look like blobs in a line?* They’re everywhere. *Hm…point to a blob for me.* (He points to the heading word PROLOGUE, which is bold and set apart from other words) - *That kind of looks like one. And sometimes when you put the overlay over the words, do the blobs go away? OR do they stay the same?* They always go away, mostly…(LS, personal communications, February 27, 2002).

Lee has a wonderful vocabulary, so I had to take to heart the “blob” terminology. Others, dealing with visual perception problems (Meares, 1980) have used the same term, and oddly enough, it described accurately what so many other people, completely unaided and with much richer vocabularies, used; such a perceptual deficit as to look like thickly bled lines on a page, completely undecipherable. This is what I heard Lee describing.
What are the implications of colored overlay use for the students within the classroom?

Lee gains fluency and comprehension by using the colored overlay to read during his class time (JL, personal communication, March 12, 2002); his teacher has recorded his progress in the last six months,

Lee has shown 1 year’s growth over a 6-month period. I have seen this in Accelerated Reader also. He is currently testing successfully at 2.9. He began the year at 1.8. (JL, personal communication, March 12, 2002).

Lee has done remarkably well for a child who will be finishing up a special services studies in the next few weeks. The opportunity for him to be served by special education is very real, and the outcomes will take effect before the semester is through. Next year in fourth grade, the potential is there for Lee to be served with special education services in all of his classes, not just reading. He has gained a sense of self-confidence by reading, using strategies and tools to complement this confidence. In light of his unprompted description of letters in a book as “blobs,” even letters such as “PROLOGUE” that were bolded and set apart from other letters, indicates to me an increased need at looking once again at Lee’s visual acuity and visual perception.

Further, it may be of interest to offer the colored overlays in all curricula, opening dialogue with him while he experiments with other colors of overlays and repeated trials of using them with science books, social studies books, and even art books. If the words in a reading text look like blobs, what would stop the words in any other text from looking like it? The transfer of the process to other class work seems apparent, and, as with Daniel (personal communication, February 20, 2002), can be used according to Lee’s specific needs. The opportunity to cut the overlays to size for more ease of use
(according to the size of the books he reads), to offer the opportunity to write directly on them with a wipe off pen in math may result in a difference in his scholastic ability and his future with special education services. It is not fail proof, but it is worth a try.

Further implications for use with Lee may result in a filter designed for the computer screen. These filters, still quite new, can act as an overlay on the entirety of the computer screen, reducing the glare and the figure/ground brightness contrast on the words to the screen background.

During administration of the CEFT with Lee, I noted how he held his head while looking at the images; tilted and to the side, he seemed to gain a “clearer” image of the picture from this stance. I did not question it, but the results indicate that Lee is not only field dependent (at 39.2% score) according to the Witkin et al. (1971) manual, but also that there may be some perceptual difficulties apparent. He held his head in a similar fashion several times as he read in the reading specialist’s room (personal observations, January 10, 2002) and as he worked on letters in the reading aide’s room (December 12, 2002). I noticed when he was extremely intent on a task (as in the interview with me, working on a puzzle), he often worked with his head at an angle, using one eye as a dominant primary focus point. I asked when his eyes would be examined again; the special studies test will incorporate a complete eye exam into it.

Lee has an indomitable spirit in reading; ardently and cheerfully he has worked at it each day. His past history with reading has been slow and not always steady. The special education teacher mentioned that sometimes it is more of a “one step forward and two steps back” motion with children that need special services in reading. The Reading Recovery program and Title I programs have helped him to learn strategies and know
where to begin when deciphering words. However, without the opportunity to see words clearly and break them down easily, the task becomes a formidable one indeed.
CHAPTER 5

Summary

The overwhelming amount of qualitative data available for this research has been extremely valuable in this endeavor. The opportunity to talk with the instructors, the administration, and the children while interacting with them on a daily basis for four months provided me with enough information to understand the process of using a colored overlay, some of the reasons for supporting their use, and the implications of other uses of the overlays for other challenges that might have, until this point in time, gone unnoticed.

The experiences overall with the introduction of the colored overlays were of novelty and experimentation. The children in all classrooms were excited and positive about the prospect of choosing and using the overlays for reading. Through a series of trial and errors in choosing the overlay color that best suited them, the children were able to ascertain the color of overlay that made their eyes feel “good” and the overlay that helped them to see “most clearly” (personal observations, November 5, 2001). For the most part, the novelty of the overlays lasted no more than a few weeks (JL, personal communication, March 19, 2002). For the children that used the colored overlays consistently, it was a shorter period of time (JW, personal communications, November 7, 2001; MW, personal communications, November 12, 2001). This was not surprising, as much of the literature indicated that children that did not find accommodative uses for the overlays would simply cast them aside within weeks, once the novelty had worn off (Robinson & Conway, 1990). In the interim period of use before casting them aside, many of the students made comments ranging from the changes in the color of the text,
the color of the pictures of the book, and the changes in the look of the book entirely
(personal observations, November, 2001). These comments were indicators that the
children were not able to look “past” the color to the text, and were similar to comments
made in many papers on the accommodations of color overlays (Meares, 1980; Robinson
& Conway, 1990). It is interesting to note, of the larger group of children from the
classrooms that chose overlays in bright, bold colors, only one was using the bright
purple color with some accommodation. The rest of the bright, bold colored overlays
were largely unused, with comments such as “the brightness hurts my eyes,” or “that
color makes my head hurt,” or more noticeably with the neon yellow color, “that color
makes me nervous.” One child in the second grade classroom frequently uses the purple
overlay, a dense, bright colored overlay with some degree of help (JW, personal
communications, February 19, 2002). Joan explained the process of choosing an overlay
to the students in this way:

Well, I told them they were like eagle eyes, the sunglasses, that for some people,
it makes it easier to see the road when they’re driving and for some people it
doesn’t. That everybody’s eyes are different and you never know; then we talked
about how to choose an overlay. That if you chose something that was your
favorite color, that might not necessarily help you see, and so I took 5 people at a
time, and we went to the back table and everybody chose a color and I did too,
and I was busy looking through every one of them and I was talking out loud, and
I was saying, “no, that really doesn’t do it,” or “I can’t see anything through that”
and it was really interesting to do…and they just did the same thing…(JW,
personal communications, February 19, 2002).

Even in third and fourth grades, the students were excited about using the
overlays in reading; several of the students in the fourth grade classroom have found a
positive difference when reading with the overlay; however, they are not part of the
immediate study, and therefore no data have been gathered on their use. One third grade
student within this study exhibited some negativity with using the overlay earlier in the
semester; speculation exists that it may have been peer pressure, or it could have been the inability to blend in with the classroom in using a specific tool such as this. Without asking the student (perhaps causing further damage to the student’s feelings of adequacy within this classroom while using this tool), this behavior is based on speculation alone. He did begin using the overlay again, and with the consistent use of it, his reading has improved in fluency and in comprehension (JL, personal communication, March 19, 2002.)

Regarding attitudes, the children of this study were more than ready to offer me their attitudes and opinions of the overlays - they ranged from “NEAT!” to “cool!” to “I don’t need it all the time” to “it helps me read when the words get hard,” and even “I don’t need it anymore.” These are their words, ideas that are discovered about the colored overlays, and ones that have made the decision as to whether they will continue using them or not. For the children that were using the overlays in a classroom where the attitude of the teacher was similar to theirs, “They’re so COOL!” (JW, personal communication, February 20, 2002), and “Yeah! This is helping, huh guys?” (MW, personal communication, November 12, 2001), the attitudes expressed by the teachers caused a sense of hopefulness for these students. The children believed in their teachers and accepted that, not only for themselves but perhaps for their teachers as well, the colored overlay made a difference in how the text looked, and how easily they could see the text. Hopefulness is an important and necessary by-product of self-confidence, for the student as well as the teacher. Nolander (1998) researched expectancy and hopefulness in the use of overlays and found the results yielded high outcomes of hopefulness towards the process, as well as high reports of comfort in using the colored overlays. Other
studies (Clayton, 1987; Hillman, 1987) were concerned with hopefulness, but by placing the weight of the hope on the examiner (teacher or researcher, in this case), modified those hopeful results considerably. While the outcome was not a significant difference in the fact that the students felt hopeful of the process working, with non-enthusiastic examiners, the hopefulness was a lessened percentage. Finally, Davis-Lazarus and Callahan (2000) targeted the attitudes of children with reading disabilities and found that children with reading disabilities who were given additional reading instruction (Title I or special education services) expressed attitudes that met or exceeded the attitudes of average and low non-disabled readers who were not given additional reading instruction. Ultimately, the desire to learn exceeded the attitudes of failure, reproach, or negativity; and further, the attitudes of these subjects of the study maintained their positive attitudes in a stable manner through several years thereafter.

I was surprised by the illustration of hopefulness and the power of attitudes within the elementary school. The reading specialist explained in her interview with me that although she thought two of the four children observed may have shown some increase in fluency and ease of reading with the use of the overlay, she was not at all sure that there was evidence for the other children using the overlays within her classroom. This is the classroom where the overlays were not readily available for use; the children were given the overlays to work with when reading time came if they remembered to ask for them, or the reading teacher remembered to get them out. Because of her short period of time (30 minutes) with small groups of children (4-5 at a time), it was a problem for her to remember yet another tool that needed to be implemented. Her summation was clear:

I’m anxious to find out what you found, because I want results. I’m willing to try lots of things, but I’m not willing to try something just to say I’m trying to
address this; I’m wanting to know it’s going to work for the kids, or I’m going to pull off and try something else. And I think we’re new into some of this stuff, and I think that we know now that this whole thing is out there, but now trying to find what will work for these kids, we need to be really safe (VT, personal communication, February 12, 2002).

When I asked her how she made them available to the children, she responded:

Well, I just make it a voluntary thing, I think that if colored overlays, if we at some point know that they totally are the thing to do, which we aren’t convinced of that yet, then, I think there needs to be some teacher training involved and have a way to encourage children in such a way that you don’t run into all this peer pressure and stuff on the side (VT, personal communication, February 12, 2002).

*I couldn’t agree more. The encouragement of children with any tool, any book, and any idea has the potential to be incredibly productive. For the majority of the faculty here at this school, encouragement and hopefulness is the name of the game they play everyday. In especially the earlier grades, reading and learning is fun. They recognize the level of concentration needed to learn the skills asked of them each day, and its no small order to keep a smile on the face of the children while they do learn. However, most of the teachers here have learned this and are well equipped to offer hopefulness and encouragement in sincere terms.

Feelings did change about the overlays over time and with continued use. This change was most vividly demonstrated with the third grade student, Lee, in his use of the overlays. As was mentioned in the case study about Lee’s reading challenges, he went through a period of time that he was not willing to use the overlays to read, even though he felt strongly that the overlays did help (personal observations, December 20, 2001). As his teacher explained it, Lee needed to feel out the security of it, and test his own sense of need:

I think that was self-imposed insecurity. His peers enjoyed using the overlays, and many of them were using them. Maybe when those who didn’t need them stopped
using them, he felt he should stop also. But he really feels more confident when using it, so eventually he went back to asking for it (JL, personal communication, March 19, 2002).

Lee is very bright; he has a strong desire to read, and he realized that his reading improved with the help of the overlay. When I interviewed him, I asked him to specifically describe what words looked like with and without the help of the overlays. Like many students who know something is different about the way they see things but are unwilling to risk being laughed at, Lee was a bit reticent to explain it to me. Because I know other students that see things this way and have talked to students that exhibit the same type of vision when looking at words that are starkly contrasted to the page color, it did not surprise me when he finally explained that the letters looked like “blobs”. Daniel, another child participating in this research study, described words looking “wiggly” and “shaky” and “missing parts on the end,” other similar and none too comforting a statement when one knows (from listening in class) what a letter is supposed to look like. Meares (1980) published qualitative research on the figure/ground brightness contrast of books, and how the colored overlays helped students that were being treated for reading disabilities in this way. The children in that research are no different from the children in this study; they seem to find reading easier when the stark contrast of the white page has been lessened with a colored overlay.

In Lee’s case, he needed to reassure himself that there was enough of a change that the colored overlay was worth using; by the time I spoke with him in late February, he was not only sure, but was excited at the prospect of having them at home to use to read with his parents as well (LS, personal communication, February 27, 2002).
When asked, all of the instructors as well as the administrator felt that the colored overlay was reducing the stark contrast between the page and the text for these students. When asked to explain it for each individual child, they again, thought that the color was cutting the “glare” of the white page to the black text, making it easier for the children to read the written word. Many studies echo this thought, including Robinson and Conway (1987), Stanley (1987), and Donovan (1995). One review of literature on tinted lenses and dyslexia by Fitzgerald (1989) indicated that a great portion of the accommodation gained from the colored overlays was achieved by reduced figure/ground contrast brightness.

Interesting changes occurred in the color choices of the overlay as well. Daniel, who began using the peach colored overlay for math and social studies, and continued to use blue-gray for his reading, found that the colors made a very real difference for him with the symbols found in math problems. The other children continued to use the same colors throughout the study, although Lee did use a green overlay on several occasions, which was a change from the turquoise color. When using the green overlay (a much brighter color), Lee faltered with reading patterns in many instances, even when the text was double spaced for him, and given him as a reread (personal observations, January 29, 2002). I noticed also while observing his reading with a bright green overlay, that he tended to squint his eyes, rub his eyes, and move his head in a more irregular pattern (personal observations, January 29, 2002). I have wondered whether the green overlay was a step outside the boundary for Lee, as another self-imposed security check.

The definite differences in reading with and without the overlays are documented in each of the case studies. Again, Lee and Daniel told the most dramatic stories of
words “wiggling” or looking like “blobs” on a page; however, the other children in this study clearly recognized a difference in the look of the text with the use of the overlay. With Cherie, the text (smaller and harder) was easier for her to read with the overlay; the black text became too hard to discern when it was little, and she mentioned that the color helps to make the “letters clearer” (CH, personal communication, February 26, 2002). Catie, with a lesser ability to verbalize her thoughts, told me that the letters were “easier to read” (CS, personal communication, February 28, 2002) – an indication that the sight of the letters were easier to recognize, perhaps. In all of these comments, the ability to reduce some of the stark contrast between the page color and the text is evident: the outcome of offering a softer palette for the eyes of these young readers (Meares, 1980).

One teacher offered her own explanation of the colored overlays:

I love ‘em!!! I DO! I love that goldenrod, where I can actually see more clearly! I’ve been using it every time I read too. (JW, personal communication, February 19, 2002)

The special education teacher offered her best guess of what is happening when the children place the overlay on the text:

I think it makes the print stand out, makes the letters stand out more, the ground discrimination thing. I know that when I put that blue overlay on his [Daniel’s] book, he can see it (CG, personal communication, February 8, 2002).

This was echoed by the majority of the teachers (personal communication, November 2001-March, 2002).

The differences in the number of reading miscues, self-corrects and comprehension for these children is noteworthy also. While many research papers question the validity of the overlays in this capacity, informal running records were done and measured against other running records of similar leveled books, and indicate that not
only are reading miscues and self-corrects lessened, but comprehension questions were answered with fewer prompts also. Because I was unable to obtain copies of running records that the teachers had personally done, I have relied on the running records that I have produced as a form of tertiary data triangulation to my daily observational notes, and interview questions from others (personal observations, January 12, 2002).

One of the more important implications of this study is the field dependency characteristic that has been found within this research. All of the children placed in Title I reading class and using the colored overlays for the period of the study also all tested as field dependent, using the Children’s Embedded Figures Test (CEFT) by Witkin et al. (1971). I administered the test personally, adhering to the guidelines set down in the Manual for the Embedded Figures Test, Children’s Embedded Figures Test and Group Embedded Figures Test, written by the test authors, Witkin, et al. (1971). The pictures, colorful and large, were of common items that children would recognize. The test began with a sampling of shapes – triangles and “house” shaped pieces, solidly outlined and brightly colored; these shapes were cut out and made available to the children to pick up and examine. Then, the shapes were put away, except for the single triangle that the children would be asked to find embedded in simple pictures. Two trial pictures (P1-P2) [from CEFT, Witkin et al, 1971] (see Appendix D for an example of the images) are shown to the children, and a two-step process of examination begins. First, the children identified the image, and secondly, attempted to find the triangle that has been embedded within the image. Scoring for this test is done on a 0 or 1 basis – 0 for an incorrect answer, 1 for a correct answer. [The directions state clearly that any changes in answers
from the first one given are also counted as incorrect, if the participant does not locate the picture initially.]

The test results for each child, although mentioned within the specific case studies previously, are shown collectively in Table 1. The scores and levels of dependence (based on % scales of correct/total questions) are stated. The sibling participants are also noted.

**Daniel.** Daniel’s test results indicated that although he recognized the colorful images quickly, he was only able to find the triangle shape in three of a total of 14 pictures offered (P1-P2, T1-T11, P3). Such images as an umbrella, a house, or a teepee incorporated the triangular shape in the very central area of the image. At times, the image was colored, and at other times, it was not. Regardless of the color, Daniel was unable to see the shape embedded within another shape. [P3 was considered only because the shape was different, and might be more easily seen by the participant – that was not the case.]

Daniel’s scores were calculated at 23.0% – a number falling in the “extremely field dependent” range. This score indicates a complete inability to disembed figures or parts from a whole; Witkin, et al. (1971) substantiates this statement.

Information found in Witkin et al. (1971) also indicates that field dependent persons have a less articulated sense of “self”; that is to say, there is less focus on the experiences of the body as its primary source of information from within. This newly found piece of information struck a chord with the similarities in Daniel’s data from the special services study conducted this spring. Daniel, as realized through the battery of
Table 1. Compiled test results from the administration of CEFT (Witkin, et al. 1971), administered in December 2001.

<table>
<thead>
<tr>
<th>NAME OF STUDY PARTICIPANT</th>
<th>NUMBER OF EMBEDDED TRIANGULAR IMAGES CORRECTLY IDENTIFIED</th>
<th>TOTAL NUMBER OF TRIANGULAR IMAGES CORRECTLY IDENTIFIED</th>
<th>PERCENTAGE OF TRIANGULAR IMAGES CORRECTLY IDENTIFIED</th>
<th>NUMBER OF EMBEDDED HOUSE-LIKE IMAGES CORRECTLY IDENTIFIED</th>
<th>TOTAL NUMBER OF HOUSE-LIKE IMAGES CORRECTLY IDENTIFIED</th>
<th>PERCENTAGE OF HOUSE-LIKE IMAGES CORRECTLY IDENTIFIED</th>
<th>PERCENTAGE OF TOTAL IMAGES CORRECTLY IDENTIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel</td>
<td>3</td>
<td>13</td>
<td>23.0%</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Matthew*S (sibling to Daniel)</td>
<td>6</td>
<td>13</td>
<td>46.1%</td>
<td>2</td>
<td>15</td>
<td>13.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Catie</td>
<td>6</td>
<td>13</td>
<td>46.1%</td>
<td>1</td>
<td>10</td>
<td>10%</td>
<td>30.4%</td>
</tr>
<tr>
<td>Justin*S (sibling to Catie)</td>
<td>8</td>
<td>13</td>
<td>61.5%</td>
<td>5</td>
<td>15</td>
<td>33.3%</td>
<td>46.4%</td>
</tr>
<tr>
<td>Cherie**</td>
<td>9</td>
<td>13</td>
<td>69.2%</td>
<td>5</td>
<td>15</td>
<td>33.3%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Lee</td>
<td>7</td>
<td>13</td>
<td>53.8%</td>
<td>4</td>
<td>15</td>
<td>26.6%</td>
<td>39.2%</td>
</tr>
</tbody>
</table>

*S = Sibling of child above  
** = Tactile information available at time of testing.

tests run in January 2002, suffers from kinesthesia, a lack of awareness of body movement at any given time (CG, personal communication, February 6, 2002). Daniel is receiving occupational therapy each week as prescribed by his special services accommodation. The indication of a lessened “sense of self” in Witkin’s (1971) work only increases the possibility that some students that have learning disabilities may be field dependent also.

Another point of interest from Witkin’s Manual (1971) is information regarding global vs. articulated drawings done by field dependent learners. The Figures 1, 2, and 3 are done by three of the younger children in their final interviews. Psychological differentiation of field dependent learners is exhibited in several distinct ways, one of which is the manner in which figure drawings are done. Figure drawings have been used
to assess articulation of body concept in previous studies (Witkin, 1965), noting that field
dependent learners tend to draw figures with global characteristics, unable to ascertain
articulation of proportion, details and realism. The figure drawings done by each of these
children are indicative of these types of characteristics.

Daniel drew a picture of the infamous, fictitious kindergartner, Junie B, who is
busy walking her fish. Junie B is a character in a new series of books about a child going
through the trials and tribulations of kindergartner-hood.

![Daniel’s drawing of Junie B. Jones.](image)

Cherie worked laboriously on a panther and a bumblebee, unable to decide on
which to draw for my “archives.”
Notice in each, the quality of the handwriting and the content of the words.

Cherie has figured out when asked to write a “b,” to automatically write a capital “B” to avoid confusion. When asked to write a “d,” the same rule applied. I had to specifically ask her to write a lowercase “b” or “d,” which yielded, after some thought and hand study, the preceding letters.

Catie, after much deliberation, decided on drawing her personal rendition of Winnie-the-Pooh, complete with red shirt and smile. Catie is in first grade, and although her vocabulary is not large, she was quite articulate and animated as she described her “Pooh.”
Matthew. Daniel’s older brother, Matthew, also tested for field dependency, at a percentage of 28.6%, similar to his younger brother, Daniel’s score of 23.0%; both of these scores indicate a definite field dependence characteristic in the children. Matthew’s classroom teacher talked with me regarding Matthew’s reading challenges, and although I have little observational data to back it up, I do believe that Matthew has a very difficult time breaking apart words and finding smaller words within the larger word. Because I was unable to observe Matthew while reading to his reading teacher, I can only conjecture on the type of problems Matthew works around each day. His special education teacher did indicate that Matthew has a hard time creating a foundation of words with which to build; further, Matthew has limited writing ability, often getting frustrated because his spelling is poor. Because Matthew has a highly developed
vocabulary reaching near a ninth grade level (CG, personal communication, January 16, 2002), it must be exasperating for him to not have the ability to clearly put down his thoughts in writing. Both of these characteristics are indicative of a person with field dependent characteristics (Witkin et al. 1971). That research further stated that field dependent persons are more attentive to others around them, to aural cues and to descriptive attributes of people, places, and things. This description is very accurate for both of these children. In conversations with Daniel, I was caught off guard several times by his astute observations of incidental points around him. His sense of observation and visual and aural cues is highly developed, and both boys have the ability to recall aural information at a very high level (LE, personal communications, February 6, 2002; JW, personal communications, February 19, 2002).

_Cherie_. While Cherie’s field dependent test scores were much higher than Daniel’s were, Cherie still exhibits obvious field dependent characteristics. She had good understanding of the pictures and recognized the shapes that were embedded within the larger images. The second set of images caused her some problems, however. Although the images were somewhat identifiable, she was unable to find the shapes in these images. Her scores were diagnostic of a person with field neutrality (overall score of 50.0%), making her able to find shapes within images with time and concentration, but also being subject to needing additional information to reinforce new information and new learning schemes (Witkin, et al. 1971). Throughout all of these tests, however, Cherie had in her hand, a small triangular shape; she ran her fingers around the edge of this shape all the while looking at the images, and finding the image shapes. This one piece of information could have very easily changed the scoring for this participant;
tactile sensation of an artifact can easily and positively aid the dimension search of the image I’d asked her to find (Chmielewski, 1998). With a small triangle (approximately the same size) in her hand beneath the desk, it is quite possible that she gained the tactile reinforcement to find the shapes within the images.

Tactile information or graphic organizers are offered as reinforcing information, a viable option for remedial learners as well as nontraditional learners (Chmielewski, 1998). The field dependence/field independence characteristic may play a part in identifying children with additional needs for increased instructional tools, to help them solidify the foundations of understanding that they are building in the early learning years. Cherie works well with additional tools to help reinforce the building of an understanding of concrete concepts that have, until now, eluded her.

Cherie’s obvious need for tactile learning hit home when further lessons on telling time with a Judy Clock were lost on her, as stated at length in the case study. Because the foam clock was tactile, colored without harsh, bright tones, and had the ability to be taken apart and understood in the mechanistic manner of a clock’s parts, Cherie was able to gain a firm understanding of the clock within a few minutes. Within a day, she was able to work on the Judy Clocks, transferring that knowledge gained from the tactile tool to the more traditional form of study tool (personal observations, February 20, 2002).

When I discussed the advantages and disadvantages of using the colored overlays in the classrooms, the teachers were very honest with the fact that they had no problems in using the overlay except in remembering to take them out and give them to the children. Each of the classroom teachers expressed this same sentiment, and it was clear
that getting the overlays out for the students was an additional task that was not routinely
done during reading time. There were two exceptions to that statement.

Joan made the overlays available at all times for the students. They were not
hidden away or placed in a drawer where children were not permitted to enter. She
works hard to promote a sense of assertiveness and self-reliance in her classroom of
children, and by making them responsible for a tool (as long as it is in easy access), they
are then in control of the use of that tool. In addition to these attributes, Joan also
supports a sense of self-awareness about the differences between people, how differences
in people are good and that that is an individualistic thing, and that differences are not
something to be made fun of, or laugh about. In this manner, differences in styles of
reading, writing, answering questions, singing a song, all become acceptable. The
children realize and understand that no one is good at everything, and because of these
differences, people become unique individuals. It is an important lesson to learn, and it
carries through to reading, writing, and learning within Daniel and Cherie’s classroom
(JW, personal communication, Feb. 20, 2002).

The first grade teacher also felt that the colored overlay was an unobtrusive tool
for reading. The children in her room also knew where she kept them (right along with
their reading books), and we talked about how the children would use them and then
return them to her, so they would be available to read with again. The children in the first
grade classroom treated the overlays with respect, and the children that use the overlays
knew where they belonged at the end of reading time.

One by one through each interview, the teachers indicated that they felt one
advantage was that the students in their classrooms were getting some accommodation
from the overlays. I asked them to explain to me the process as they saw it; what was the overlay doing that helped these children to read?

I think it makes the print stand out, makes the letters stand out more, the ground discrimination thing. I know that Daniel, when I put that blue overlay on his book, he can see it. I think he can see [the words] better (CG, personal communication, February 8, 2002).

I think it decreases the contrast of the black on white. I think this contrast actually hurts some children’s eyes when reading. It causes words to look like they move around the page or look as if they are large “blobs” as one of my children explained it. I think when that contrast is decreased, they can see the words more clearly (JL, personal communication, March 19, 2002).

YES, the color really does help…that’s the first thing I thought of, when he started using it with the math. It’s probably all mixture of the tools that’s really helping him, but the color seems to be helping… and I’m not sure we’re gonna know what’s helping, or if its everything all together, but it seems to be, -- he learned in 10 minutes one day, I couldn’t believe it. He came to the back table and he was working on this stuff, and it was addition with regrouping. And that was so hard for him, and I gave him a lot of different things to do and he was using the overlay, and he would put the overlay over it and then he’d move it, and all at once, he said “I’ve got it” and then I looked at his stuff, and he was just flying; it just clicked, and he was laughing, and having this wonderful time, and every time he’d get one all by himself, he would just jiggle all over he was so thrilled, and I’d say “now you’re cooking with gasoline because you’re about to explode.” And then he’d say, “Now I’m cooking with gasoline!,” and he’d do the next problem -- and it was like in 10 minutes, he came to the back table and he couldn’t do anything, he was counting backwards and he was counting forwards, and then all at once, it went like that (snap of fingers) - (JW, personal communication, February 19, 2002).

I think it highlights the print for them, and helps them narrow down exactly what they’re looking at (MW, personal communication, February 8, 2002).

Four opinions of four different classrooms of teachers using one tool that may be helping some children read better, more fluently, with more comprehension, and with less miscues. No plug, no high-dollar price tag, no long-term learning curve to use them, and no reason to not give these overlays away freely to the children that find any help from them at all. Seemed like at the very least, a new tool to keep in that “bag of tricks.”
Methodological Changes

Although the methodology, for the most part, was straightforward and easy to execute, several parts of the methodology could have been altered to yield a stronger set of data or become more accommodative for both the children, and myself. The Children’s Embedded Figures Test (CEFT) (Witkin, et al. 1971) which was administered to each of the children individually during this research was an early version of the test. Because it was borrowed from a testing library at another university, the test could not be altered in any way. In future administration of this test, it would be helpful to have a laminated copy of the test available and offer wipe off pens to the children so that they could draw around the figure they were attempting to indicate as the correct answer. While using a pointer in this test proved acceptable as part of the technique, I believe I would have had a more concise understanding of exactly where the triangle was being shown, according to the participant. Several times, I had to ask the child to repeat their indication of where the triangle was, since they were either blocking the diagram while showing me, or were unsure of where the triangle was that they’d “seen” before (personal observations, December, 2001). In Daniel’s case specifically, his focus and concentration level was difficult to maintain for him. He was visibly tired at the end of the test, and taking into consideration his additional perceptual difficulties, I have tried to come up with an alternative method of testing which would alleviate some of the struggle for him and others like him in the future. Using a laminated test with a wipe off pen may, in fact, be an answer.

Another aspect of the final interview that would have helped to gather further information for ascertaining field dependence would be to generate a group of words that
had smaller, easily identifiable words within their structure, and test the children’s ability to find those words.

One of the health related problems that both Daniel and Lee share is that both suffer from allergies and asthma. The methodology in several papers on colored overlay research with reading disabilities specifically ruled out asthmatic children, or those suffering and taking medication for allergies. Gole, et al. (1989) sites the systemic medication was an effectual cause of cerebral malfunctioning in young learners. While Gole et al. (1989) study was conducted with older children (aged nine to twelve years of age), the reasons for excluding the asthmatic subjects remains the same: that, while children are treated with specific chemically based asthma medicines may experience periods of hypoxia during attacks, it is also contended that the medicines may affect cognition and higher cerebral functioning. This theory was further substantiated at that time (1987) with research concerning dyslexia, immune disorders, allergies and left-handedness, showing a preliminary familial connection to each of these disorders (Pennington, et al., 1987). Since that time, breakthroughs in pharmaceutical research have resulted in chemicals that assist asthmatics without interfering with cognitive functioning (personal communication, January 2002); however, the general malaise of the child suffering from allergies and asthmatics should be noted (Gole et al., 1989).

As with Daniel and Lee, times occur when, even with the help of medication, hearing is impaired due to blockages in the ear, sniffles are interrupting class work, and fevers, sinus infections, and complications of bronchitis, can leave a healthy child listless and unable to focus. It is, however, unlikely that in today’s schooling, one can contribute
medication as a primary cognitive dis-functioning attribute (personal communication, January 2002).

**Conclusions**

The relationship of field dependence-independence to learning disabilities has long been studied. Recent studies by Huang and Chao (2000) indicate that gender is less of a consideration that was once thought with regard to field dependence. After administering the Group Embedded Figures Test (Witkin, et al., 1971) to a group of high school students, there was a higher incidence rate of learning disabled students that were field dependent than were field independent, without consideration to gender. While the learning disabilities were not qualified in this paper, one can draw from the methodology that, through comprehensive assessment, a myriad of learning disabilities were represented in this study. It is not clear what percentage of the participants were specifically labeled as reading disabled, but because reading disabilities represent approximately 50% of all learning disabilities (Spafford & Grosser 1996), a good portion of these participants could have been reading disabled.

Findings in a paper by Paramo and Tinajero (1990) indicate that field independent children perform better in school overall. In this preliminary study, all subjects within an academic environment are weighted equally, and are considered together in an comprehensive assessment of differences between field-dependent and independent learners. “We believe that the disadvantage of the field-dependent children in this context could be removed if adults were aware of their field dependence and modified their behavior towards them accordingly” (Paramo & Tinajero, 1990). This interpretation of the outcomes reveal that, if the cognitive characteristic of field
dependence/independence is stated with regard to the children’s learning, modified instruction could offer those children success in their learning endeavors.

Another conclusion drawn from this study is that the students’ attitudes towards instructional interventions such as the overlays were influenced by the teacher’s attitudes toward the tool, as well as their general approach to teaching. In particular, one teacher specifically recognized that characteristically, field dependency is no more a disability than a left-handed child learning to write (JW, personal communication, January 15, 2002). While the approach to learning to write is different, the outcome is the same. And, while teachers often need to “think outside the box” in order to accommodate learners who may need extra help in understanding the approach to writing as a left handed person, most teachers find this accommodation an integral part of teaching; after all, left-handed children occupy a larger percentage of the classroom today than 30 years ago (Pennington, et al., 1987). Following this type of thinking, field dependent children are merely “a different type of left handed learner” and by accommodating this learner with modified instructional methods, the outcome for all students can be equal. Paramo and Tinajero support this theory, and the importance of modified instruction in the educational environment. Moreover, modified instruction allow all types of learners an opportunity to gain knowledge of the context, but by varying the type and method of instruction, reinforce strong learning. Cognitively, this is the most effective method to promote learning, and the most assured way to incorporate new information with previously learned information (Ormrod, 1999). Automaticity of basic skills is the goal with which many teachers, especially in early learning grades (such as first, second, and third classrooms) place their goals, hoping that, through automaticity of basic skills,
further skills can be built upon. It is not only that automatic responses of basic skills be practiced until little conscious attention is required, but also that the kind of practice offered stimulates cognitive development of the skill (Driscoll, 2000).

In the second grade classroom where a foam clock was introduced to Cherie, a child that could not seem to comprehend the busily decorated “Judy Clock,” the opportunity for her to be part of the process of putting the clock together, physically being aware of where the numbers went back into the clock base with relationship to the other numbers, to the hands of the clock, and as part of the whole concept of the clock, allowed her some personal, tangible, relationship with the clock that made this modified instruction work for her (personal observations, February 20, 2002). Taking this one step farther, then, is the ability to understand that if children with field dependence characteristics can, with alternative tools, gain an understanding of a process, without inordinate changes in method of instruction or instruction time, it seems like good instruction to offer several opportunities in various presentations of the same idea, in the hopes that all children will benefit from this instruction.

I have watched the children in three grades while learning to read, children with acknowledged reading disabilities and a strong desire to learn to read. Reading Recovery programs offered some assistance, but for each of these children, the program did not offer a strong enough accommodation to get the students back on level and keep them there. Title I programs offered similar assistance, and the children used the learned strategies from this program also, but with similar outcomes at the program’s discontinuation. In both of these programs, similar techniques are used with the child: that of, Reading Recovery techniques (Clay, 1979), guided reading techniques (Cooper,
2000); word breaking and making (also found in Reading Recovery techniques); and other subtle derivations of these techniques, both with icons and with words. The difficulty I continually observed was that for these children, in varying degrees, they were unable to successfully break apart words into recognizable “chunks” as they were told to do. The word **SHOT** didn’t offer them an easily seen word **HOT** within it. Just as they could not disembed a shape from an image with ease, I watched as these children tried unsuccessfully to disembed part of a word from the whole word repeatedly (multiple observations, October 2001-February 2002). They worked diligently, however, knowing that this was the strategy they were asked to employ, on more than one occasion. For some children, covering part of the word with a finger or paper (in effect, losing that “part” of the word) yielded some success; however, the comprehension of the word (as well as the sentence with which it was placed) was often at risk. It was a workable solution, but not a widely successful one.

Node-link displays, which include graphic organizers, concept maps, and knowledge maps, are becoming more prevalent in educational settings to proffer additional information on the traditional text and teaching information. The research conducted by Chmielewski et al. (1998) indicated that well created node-link display models aided field-dependent learners alternative methods of gaining the information that traditional teaching methods offer, but that they were better able to assimilate the data, and outperformed on assessment tests when placed aside field-independent learners with the same contextual tools. It was also found that very detailed instructions along with well constructed color-coded illustrations indicating specific directions of a task enabled field dependent learners to achieve higher levels of success with that task (Dwyer &
Moore, 1997). By using these instructional modifications, good instruction can be offered to many types of learners, without inordinate changes in method of instruction or outcomes of learning.

The field dependence characteristic of young children is a valuable piece of information for teachers of these learners, especially if traditional methods of teaching are not yielding strong results. As with the second grade classroom teacher, because she was aware of the field dependent level of some of the children in her classroom, she had additional information with which to specialize her instruction for these children. Modified instruction that helps to bolster the knowledge, skills, and attitudes of all children in the classroom is good instruction, ultimately.

Finally, the role that self-efficacy and attitude played in this research was significant. The classrooms in which these students learned and the enthusiasm with which the teachers addressed and promoted learning was consistently high. Bandura (1993) indicates that all personal goals are influenced by a self-appraisal of capabilities, and that stronger the perceived self-efficacy, the higher the goal challenges people set for themselves, and the higher degree of effort is placed in completing those goals successfully. For teachers, the goals are easily set and attained: good quality teaching with a commitment to offer each learner success within the classroom, regardless of the methodology. By making this commitment and striving to attain it, the children in the classroom gain equally as do the teachers. For students, however, to have such a sense of self-efficacy as I observed, is often much more indicative of successful learners that find no struggle in learning. These students have been placed in several remedial classroom situations (Reading Recovery, Title I, in some instances, special education) and are very
aware of the remedial nature of the classrooms, yet their desire to learn affords them the confidence to assume they will succeed and move on, and the remedial aspects of the classroom are negated. In all of these children, the confidence they displayed in their tasks far outweighed the frustration and the minor setbacks they may have encountered while learning to read. Even when traditional methods were implemented and were unsuccessful in producing the desired results (again, Reading Recovery, Title I), the students returned to books, “looking for adventure,” enchanted with “stories of far away places,” and eager to find “new things to learn about everyday!” (LS, personal communication, February 25, 2002; DS, personal communication, February 27, 2002; CS, personal communication, February 28, 2002). They did not begin the slide into frustration, nor did they shut down in the learning environment, two things that are often causal to poor learning.

In observing these children, it became apparent that their quality of learning and the level of self-efficacy that they carried in themselves and their peers was directly related to the value the teachers had placed on each of the students’ learning abilities. Bandura, et al. (1996) furthers that some children regard ability as an acquirable skill that can be increased by gaining new knowledges and competencies. This is known as a functional-learning goal. Because they seek challenges to promote new skills, they also regard errors as a natural progression to success. They are not only unshakable in their learning practices, but view mistakes as learning opportunities. It is these children that also judge their capabilities more in terms of personal improvement than in comparative achievements to others. Without a doubt, the children who participated in this study approach all learning in this manner, and it is that resolute determination that gives them
the “edge.” They know they will learn to read, it is just a matter of what instructional tools they may need to get there, and what avenue best accommodate their learning style. In a world of competition and fostering of ill will, these children have gained a huge and necessary asset in their difficulties of learning to read: the attitude to take each new experience as a learning experience, and gain whatever comes from it, as necessary for further learning.

One last point to ponder, then, when considering self-efficacy in students and teachers: Does the efficacy that each teacher promotes in the learning environment assist learners to be more positive about their individual growth? Or, alternatively, is it the sense of self-efficacy the students maintain that “raises the bar” for them, and allow for the promotion of unrestricted learning that the teachers promote in successful learning environments?

Further Research

Further research concerning reading disabilities and field dependence levels may result in an understanding of the need for modified instruction in teaching strategies, especially for field dependent learners. Both qualitative and quantitative data would be helpful in assessing levels of dependence, the type of alternate teaching tools that might be useful and whether a colored overlay might be a practical tool to these learners in any way.

Cognitive style with regard to learning and education has been researched in a number of ways: from Gardner’s (1993) Theory of Multiple Intelligences to Goleman’s theory of (1995) Emotional Intelligences, the cognitive strengths and contrasts of learning styles have become hotly debated territory. Witkin (1971) touches on these attributes
within the *Manual* (Witkin, et al. 1971) as well as in at least one earlier paper (1965).

The level of field dependence is an important instructional variable for any age learner, and with that information, instruction can be adapted in such a way as to involve all styles of learners, and increase understanding of the instruction for all learners. It would be interesting to research field dependence with both Gardner’s and Goleman’s theories in an attempt to understand the similarities and the differences between these cognitive styles, and the many intelligences that are becoming apparent in today’s literature.

This study was created to be a four-month long qualitative observation into the use of colored overlays for children that are challenged with reading disabilities, and have tested as being field dependent. The opportunity to revisit these students in years to come is a very feasible option that would allow continued data, both qualitative and quantitative, to be gained. This would give researchers a further understanding of the viability of alternative forms of instruction, and how, when used in early classroom practices, can alter the learning of students considered field dependent. Longitudinal studies are not common within the research area of field dependence, nor in the use of colored overlays. In both of these research arenas, the data could be quite valuable for strengthening the argument to modify instructional methods and media in order to give the learners the highest possible results in learning the new information.

I enjoyed working with these children immensely; I think additional time spent observing them would yield a more diversified range of information about their cognitive styles of learning, their amazing propensity for accommodation and their overwhelming desire to learn to read.
Glossary of Terms

*Accelerated Reader Program:* Computer generated instructional program used to guide leveled reading assessment; this program assesses the reading of each child on leveled books within the program; without 90-100% success on the assessment, the child does not advance to the next level of reading.

*Binocular Occlusion:* The occurrence when images projected by two eyes are meshed to create an image, but one image is “overshot” from the other, causing blurred images.

*Breakthrough to Literacy:* A computer modulated program to motivate young early reading strategies.


*CEFT:* Children’s Embedded Figures Test, created by Witkin, et al. (1971).

*Congenital:* Congenital issues cover a broad spectrum of incidents, including both innate and genetic issues. Used more broadly than either of these terms, however, congenital deals with those incidents that happen while the child is still in the womb.

*Constitutional:* Constitutional issues are the final category of the etiology section. In this, all incidences external to the womb are taken into consideration when diagnosing learning and developmental disorders.

*DRA Test:* Developmental Research Assessment: a leveled passages test used for assessment of comprehension for grades 3-5.

*Depth Perception:* the ability to view the depth at which something is away from you, the thickness, or other; developed by two images coming together to form one inside the visual processing center. Without two images, depth perception cannot be gauged (Spafford & Grosser, 1996).

*Dyslexia:* It is a specific language-based disorder of constitutional origin characterized by difficulties in single word decoding usually reflecting insufficient phonological processing abilities.

*Field dependence:* Field dependence is the lack of ability to extract individual words, pictures, or symbols from the larger subset of a page, or visual representation at hand (Huang & Chao, 2000).

*Figure/Ground Brightness:* The stark contrast between page color and text color, often resulting in headaches, blurred vision.
**GEFT**: Group Embedded Figures Test, created by Witkin, et al. (1971).

**Genetic basis**: Genetic issues with regard to dyslexia are strongly debated issues. However, as with other learning disabilities, many can be traced to genetic elements.

**Guided reading**: Two types of guided reading, observational and interaction. In observation guided reading, the teacher introduces the text to the children, then observes and coaches while the child uses their own strategies to read; in interactive guided reading, the teacher gives guidance, directions, and assessment through asking questions concerning pieces of reading as it is read through (Cooper, 2000).

**Iconic memory**: Iconic memory, also known as visual sensory memory, is recognized in the process of reading by a three-step process: 1) the registration in visual sensory (iconic) memory of images of words scanned, 2) the analysis in short-term memory of the meaning of the words and sentences, and 3) the storage of the memory in long-term memory (Riding & Pugh, 1977).

**Innate basis**: Innate disabilities are those founded in the gestational period of development, such as a chromosomal or genetic aberration.

**Kinesthesia and the Kinesthetic Method**: A multi-sensory method for learning sight words, using senses of touch, sight and hearing to assist students in learning new words.

**Leveled reading**: Levels of books used with Accelerated Reader, a computer companion program for assessment of reading comprehension in elementary school grades.

**Morpheme**: Two types of morphemes: bound morphemes and free morphemes. A bound morpheme must be attached to another morpheme in order to carry meaning. A free morpheme can stand alone, as a word.

**Nvivo**: Qualitative software useful in synthesizing qualitative information, especially in interviewing processes.

**PALs test**: Phonological Awareness Literacy Screening; a state mandated test offered from K-3; developed by the University of Virginia and adopted state wide.

**Phoneme**: The smallest unit of speech sound in language (Cooper, 2000).

**Phonemic Awareness**: The awareness that spoken words are made up of speech sounds or phonemes (Cooper, 2000).

**Reading Recovery Program**: Program developed by Marie Clay (1979) as an early intervention program to aid young learners with problems in reading, before they become larger problems. Based on a seven-step process that includes initiation of new information, alternative method of delivering information, practice and feedback, and once again, introducing new information, built upon the last information gained.
**Running Records:** A procedure for analyzing a student’s reading, similar to miscue analysis (Clay, 1979).

**Scotopic Sensitivity Disorder:** A disorder named by Helen Irlen, very similar to descriptions of dyslexic characteristics; this, however, is most often caused by an inability to view bright lights/bright surfaces.

**STAR Test:** Standardized Test of Assessment in Reading. An individualized computerized assessment program that grade levels 3-5 use to help classroom teachers assess comprehension and level of reading for each student.

**Tactile learner:** A learner that requires three-dimensional tools to thoroughly understand the technique, process, or concept.

**Title I Program:** State subsidized program offering early intervention for children needing additional reading and writing skills development.

**Vision Impairment:** An inability to see clearly, due to incorrect visual alignment, binocular occlusion, etc. Most often, aided by lenses.

**Visual Acuity:** The accuracy and clarity with which an image is created in the visual center and processed.

**Visual sensory memory:** Also known as Iconic memory, is recognized in the process of reading by a three-step process: 1) the registration in visual sensory (iconic) memory of images of words scanned, 2) the analysis in short-term memory of the meaning of the words and sentences, and 3) the storage of the memory in long-term memory (Riding & Pugh, 1977).

**Zone of proximal development:** A range in which a child can perform a task only with the help of a more experienced individual (Vygotsky, 1978).
Acronyms of school participants (interview participants)

BM - Betty Mottle, Third Grade Classroom Teacher
CG - Colette Genty, Special Education Resource Teacher
CG1 - Chip George, School Psychologist, Montgomery County Schools
CH - Cherie H, 2nd grade student
CS - Catie S, 1st grade student
DC - Donna Cotton, Principal
DD - Dixie Daniel s, Reading Specialist Aide
DR - Daniel R, 2nd grade student
JW - Joan Walsh, Second Grade Classroom Teacher
JL - Jean Land, Third Grade Classroom Teacher
LE - Lance Elmer, Fourth Grade Classroom Teacher
LS - Lee S., 3rd grade student
MJ - Millie Jems, County Social Worker
MW - Melanie Whitman, First Grade Classroom Teacher
VT - Vanessa Taylor, Title I Program Resource Teacher
References


*Dissertation Abstracts International, 57*, (07A).


Bandura, A. (personal communication to group of researchers, Spring Semester, 2001).


LeCluyse, K. B. (1993). The efficacy of colored overlay intervention with reading
disability, attention disorder and visual discomfort. (Doctoral dissertation,
McRae, L. S. E., & Young, J. D. (1990). Field independence and the FIRO-B.
Perceptual and Motor Skills, 70, 493-494.
students (Scotopic Sensitivity, Irlen syndrome) (Doctoral dissertation, Colorado
Meares, O. (1980). Figure/ground, brightness contrast, and reading disabilities. Visible
Language, 14(1), 13-29.
California State University, Long Beach, 1985). Masters Abstract International,
24, (2).
Moore, D. M. (1985). Effects of field dependence-independence on size and type of
level of field dependence. Perceptual and Motor Skills, 72, 611-616.
Virginia Polytechnic Institute and State University.


Appendix A

Institutional Review Board Consent

County School Board Consent
Note: Due to confidentiality of the participants and the school system where the research was conducted, the Institutional Review Board Consent Form and the County School Board Consent forms have been deleted.
Appendix B

Consent forms for

Students, Teachers, Parents, Administrators
Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech.
Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Four students from [redacted] Elementary School 1st grade Title I reading class will be the subjects of observation, interaction, and interview.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

Name of Child

__________________________
Signature of Parent or Guardian            __________
Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher  540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty 540.231.5587
Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech.
Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Four students from [redacted] Elementary School 2nd grade Title I reading class will be the subjects of observation, interaction, and interview.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

________________________
Name of Child

__________________________            __________
Signature of Parent or Guardian             Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher  540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty 540.231.5587

Informed Consent Form for Third Grade Students
Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech. Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Four students from [Name] Elementary School 3rd grade Title I reading class will be the subjects of observation, interaction, and interview.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

________________________
Name of Child

__________________________            __________
Signature of Parent or Guardian             Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher   540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty 540.231.5587
Informed Consent Form for Fourth Grade Students

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants of Investigative Projects

Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech.
Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Two students from [Redacted] Elementary School 4th grade class will be the subjects of one assessment and evaluation. This assessment is being done on these students because of their sibling is involved in the formal study being conducted, and familial connectivity of reading problems and field dependence is questioned.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

________________________
Name of Child

__________________________            __________
Signature of Parent or Guardian             Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher  540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty 540.231.5587
Informed Consent Form for Instructors

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants of Investigative Projects

Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech.
Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Four students from [Redacted] Elementary School 1st grade Title I reading class will be the subjects of observation, interaction, and interview.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

________________________      __________
Signature of Instructor                  Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher  540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty  540.231.5587
Title of Project: Qualitative analysis of the use of colored overlays with children experiencing reading disability and field dependency.

Investigators: Lucinda Willis, Doctoral Student, Department of Curriculum and Instruction, Virginia Tech. Barbara Lockee, Chairperson, Doctoral Dissertation Committee, Virginia Tech.

The Purpose of this Study

The purpose of this study is to examine the use of colored overlays as a teaching tool for children with reading difficulties that also exhibit field dependence. Four students from [Redacted] Elementary School 1st grade Title I reading class will be the subjects of observation, interaction, and interview.

Procedures

The student participants will be observed for a period of three months, initially with no interaction with the researcher. The reading specialist will be observed as well at this time. Following this, interaction with the children while being taught with the colored overlays will occur with direction from the specialist. When completed, an interview will be set up with the children, as well as the specialist, which will enable the researcher to offer open ended questions and gain stronger insight into the use, implementation of the colored overlay techniques, attitudes and feelings about the process. These interviews will last no longer than 30 minutes for the students, and no more than one hour with the specialist, which will be held at the specialist’s scheduled convenience.

Risks

There are no foreseeable physical or emotional risks to any of the participants in this study.

Benefits of this Project

By participating in this study, the participants will be contributing to a body of knowledge that may serve to inform other reading professionals, both inside and outside the county school system. It is expected that the data from this study will provide insight into the process of use of colored overlay templates, as well as the attitudes and attributes about the overlays to the subjects and to the instructors that use them.

Extent of Anonymity and Confidentiality

Only the researcher will know the identity of the participants. Each transcribed observation and interview will be coded chronologically, and a pseudonym will be used when referring to the participants.

Compensation

The participants will not receive any form of compensation for their participation in the study.
Freedom to Withdraw

Participation in this study is strictly voluntary; therefore, the participant is free to withdraw from this study at any time. The participant is also free not to respond to any questions asked during the interview, or during interaction with the class.

Approval of Research

This research project has been approved by the Institutional Review Board for Research Involving Human Subjects, and has the approval and endorsement by my Doctoral Committee at Virginia Tech.

Subject's Responsibilities

If the participant voluntarily agrees to participate in this study, it will be asked that this person participate in semi-structured interviews at his/her convenience. An ongoing, series of informal conversations will also be honored that will share some of the experiences and interactions related of the specialist to the students. The adult participants are asked to contact the researcher or the researcher's supervising faculty member if a problem or concern arises during any stage of the research process.

Participant's Permission

I have read and understand the Informed Consent requirement and the conditions of this research project. I have had all my questions answered, and hereby acknowledge the above information and give my consent voluntarily for participation in this project.

If I decide to participate in this project, I fully understand that I may withdraw at any time without penalty. I agree to accept and adhere to all the rules and responsibilities of this research project as outlined in this consent form.

________________________      __________
Signature of Administrator           Date Signed

________________
Telephone Number

Should you have any questions about this research project, you should contact:

Lucinda Willis, Investigator/Researcher  540.381.9089
Barbara Lockee, Ph.D./Committee Chairperson and Supervising Faculty 540.231.5587
Several of the first grade reading classes (Title I) have been selected as a place of observation and interview to better learn about the use of colored overlays in reading instruction with young children. This research is being conducted in partial fulfillment of a doctoral dissertation in the College of Human Resources and Education at Virginia Tech, Blacksburg, Virginia. Dr. Barbara Lockee is chairperson of this doctoral dissertation committee.

I, Lucinda Willis, will conduct the research and observation myself. I am a graduate student in the College of Human Resources and Education, and I will be glad to answer any questions you or the parents of the students might have about the evaluation. My brief Biosketch is also attached.

For part of the study, I will observe four children being taught reading with the use of colored overlays. Observations will take place over a period of time of three months, with visits in the classroom occurring two to three times a week, at the instructor’s discretion.

After consent forms have been signed by school and parents, I will interact with the students personally, and ask a series of interview questions which will help to pinpoint the aid (or lack thereof) of the colored overlays for the children studied.

I greatly appreciate being permitted to conduct this research in your school. Your signature below indicates that you have read this consent form in its entirety and that you voluntarily agree to participate.

NAME: _____________________________________________________________

ADDRESS: _________________________________________________________

SIGNATURE: _________________________________________________________

PHONE: ________________________ DATE: ____________________________
Appendix C

Interview Guides for

Students, Teachers, Administration
Interview Questions – Children

I’ve been observing all the wonderful things you’ve been reading for the last few months, and how well you are reading in Ms. Taylor’s class. You know I’m doing some research at Virginia Tech, and now I’d like to ask you a few questions, okay?

1. What color are your eyes?

2. Which hand do you like to write with?

3. Tell me about reading, when you like to do it, where you like to sit, do you like to read with others? Can you tell me what some of your favorite kinds of things to read might be?

4. What is your favorite, all time, best book you’ve ever read? Did you have help reading this book? Think you will ever read it again? What made it your favorite, all time, best book?

5. Let’s talk about words and letters for just a minute. What do you like best about learning words? Is there a favorite exercise you do with your class, or with the reading teacher that you particularly like?

6. Tell me about words -- are they fun to make and sound out? Why or why not? Do you like finding words inside of words, and finding the mystery words in Ms. Dickerson’s class?

7. What is your favorite subject in school? What makes that your favorite subject?

8. Do you like to write about the stories you read when you are finished?

9. Do you like to draw pictures about the stories you read when you are finished?

10. Do you like the Computer work you do when you are finished a book? (3rd grade only)

11. When you look at a book, how do words normally look to you on a page in a book? Are they slanted? Uphill or down? Do they wiggle or fade?

12. I’ve noticed you use your finger to help you keep place when you’re reading. What does that do? Does a using strip of paper help to guide you?

13. What happens if you don’t use your finger or strips under the words? [Prompt for missing lines or words]

14. Tell me about using an overlay. What happens?
15. When you place one of the overlays on a page, what happens to the words?

16. How do the sentences look with the colored overlay?

17. Does the overlay change how you read? If so, how?

18. Why did you pick the color overlay that you chose? [Track through color choices, why the change in color? Better? Worse? How do your eyes feel with each color? Can you use a different overlay if the one you like isn’t available? Does that still help?]

19. How do your eyes feel when you read a page of a book without an overlay? And when you use one?

20. When you look at “b’s” and “d’s”, what happens? Can you read this line of letters for me? [Magnetic letters as help aids] [Prompt with terms such as clearer, fuzzier, lined up straight, jumbled?]

21. Can you draw these pictures for me on this paper? What are these symbols? Do you remember learning these? What do they mean?

22. Tell me about reading for a long period of time - Is it easier or harder to read with the overlay? Can you explain that answer to me? Do you get tired from reading a lot at one time with or without the overlay? How long do you like to spend reading? [Describe time allotment in children’s terms]

23. If you had a chance to choose to read with the overlay or without for the rest of the year, which would you choose? Why?

24. What subjects do you use the colored overlay in? Why? Would you use them for other subjects if you could?

25. Do you use a colored overlay at home? If not, would you if you could?

26. What do you think other kids in your class think of the overlays?

27. Tell me about how the other kids that use the overlays? Do you think there are some kids in your class that would use one if they were available?

28. Can you think of two things about reading that you’d like to tell me that we didn’t talk about here?
Interview Questions – Teacher

1. How long have you been a teacher? In what grades?

2. What are your qualifications?

3. Briefly explain to me the techniques used to assess a student’s reading abilities in 1st, 2nd, 3rd grades.

4. The students that I have observed have a range of reading challenges; what are some of the primary steps taken to combat these reading problems? At what grade level do these steps begin in earnest?

5. What are some of the techniques that these students have used in the past to learn to read effectively?

6. I’ve tested each of the children in this study for field-dependency, a cognitive characteristic that offers researchers an understanding of how a person perceives images; some people are not able to disembed parts from a whole, within a picture, or even a word from a sentence or line, and it is these students that are field dependent. The test results indicate that all of the children in this study are field dependent. What, if anything, do these test results indicate to you? How might this information effect instructional decisions made? In what ways?

7. I have learned that each of the children I am studying have also been through a program called “reading recovery” and with each student, the program didn’t help their reading problems. Can you explain briefly the foundation of reading recovery techniques, and speculate as to why these children didn’t gain from this program?

8. I am interested in learning how you and your colleagues learned about colored overlays. Upon learning about them, did this technique sound as if it may have a place in your school? Why?

9. How long have you been using colored overlays?

10. When you started working with the colored overlays, what was the initial reaction by the children?

11. How has the novelty of the colored overlays worn off for the children? Do you think they are still reading “color” and not “through color”?

12. What are some of the changes that you have noticed with the children using colored overlays?
13. Where do you see the colored overlays being best used with regard to curriculum? Why?

14. Tell me about the children that the overlays don’t help. Why do you think this might be so? [Concrete examples, please].

15. How do you explain how the overlay is working for these children? Can you elaborate?

16. In your opinion, what are the factors in deciding whether a child may find colored overlays helpful?

17. What colors do the children with reading difficulties predominantly choose?

18. Have you noticed a pattern in color-to-difficulty, meaning do you see a pattern in children with visual problems choosing a certain color of overlay, as opposed to a child suspected of having organizer-building problems choosing a different colored overlay?

19. Tell me about the overlays being used consistently in reading for these children; do you think these are something that the child must use for a period of time in order to benefit from them, or have you seen immediate responses with their use?

20. What are some of the changes you’ve seen in prolonged use of the overlays?

21. Tell me about some of the changes you hope to see with continued use of the overlays?

22. Where will you go from here with the children that are using the colored overlays?

23. Tell me about using overlays in the 1st, 2nd, 3rd grade classroom?

24. What instructional advantages have resulted in using overlays?

25. What instructional disadvantages have resulted in using overlays?

26. What challenges were posed by using colored overlays in the classroom? Please include logistical, instructional, and sociological. Did you see any signs of peer pressure coming into play within the classroom?

27. Tell me about the students’ perceptions and reaction to the colored overlays in the classroom?

28. Are the colored overlays made available for all curricula in your classroom? How is that done?
29. Describe any interactions with the parents concerning the overlays. Did you provide information to the parents about the colored overlays? Have you received any feedback from parents about use (or the desire to have them) at home?

30. Is there anything else you’d like to share with me regarding the children and their individual reading histories? Please elaborate.
Daniel specific questions: [Joan Walsh]

1. What is Daniel’s general reading ability?

2. What do you think is happening with Daniel - perceptually, cognitively?

3. How do you think he sees things differently, in spite of his 20/20 vision?

4. Has Daniel exhibited any signs of hesitancy in using colored overlay for any reason? Can you speculate what those reasons may be?

5. What are some of Daniel’s coping mechanisms in place to avoid work that is uncomfortable for him? What kinds of work does he avoid most?

6. Does Daniel acknowledge that he can read better with an overlay? What do you think?

7. How do you think the colored overlays would work if extended to Daniel’s math work, there may be a difference in the way he perceives the symbols in math?

8. Throughout my observations, I’ve noticed Daniel has a wonderful appetite for books and wants to please with his reading, in spite of the challenges reading provides him. Do you see this continuing throughout the year? Or has it diminished in some ways since the first of the year?

9. Can you explain to me the assessment tests (STAR, PALs) briefly with regard to Daniel- from the beginning of the year to the present, what has occurred?

10. Will the overlays be made available to the children through breaks and in the summer months?
Catie specific questions: [Melanie Whitman]

1. What do you think is happening with Catie - perceptually, cognitively?

2. How do you think she sees things differently? You mentioned she could read upside down perfectly, AND transpose letters and even numbers with accuracy. Research suggests this is not uncommon for persons that see things backwards. What is your perception of this?

3. What other coping mechanisms does Catie use when things become a challenge to learn?

4. How often does Catie use the colored overlay for reading? When is the most often? Do you think it helps her?

5. Tell me about Catie’s acknowledgement of the colored overlay; does she have a self-confident attitude when reading through the colored overlay? What do you think?

6. Throughout my observations, I’ve noticed Catie has a wonderful appetite for books, in spite of the challenges reading provides her. Do you see this continuing throughout the year? Or has it diminished in some ways since the first of the year?

7. Can you explain to me the assessment tests (STAR, PALs) briefly with regard to Catie- from the beginning of the year to the present, what has occurred?
Lee specific questions: [Jean Land]

1. What do you think is happening with Lee - perceptually, cognitively?

2. How do you think he sees things differently or processes things differently? Ms. McDonald indicated that without visual organizers, Lee has a hard time “grasping ideas” in math, particularly - that he needs to physically be part of the example. Can you elaborate on that?

3. In reading, you’ve mentioned that Lee shies away from any challenges, not willing to push ahead on the leveled reading that he’s done in the classroom. Also, the computer assessment on comprehension of the story indicates that he’s “getting it” but not in the highest fashion. Can you elaborate on that also?

4. Tell me about the coping mechanisms that Lee use when things become a challenge to learn.

5. Does Lee use the colored overlay for reading most of the time? Do you think it helps him? How so?

6. Does Lee acknowledge that he can read better with an overlay? What do you think?

7. Do you feel that peer pressure may have caused him to balk at using the overlay for a period of time? I noticed he was not willing to use it for a while, and then began asking for it again. Any thoughts on that?

8. Throughout my observations, I’ve noticed Lee has a wonderful appetite for books, in spite of the challenges reading provides him. How do you see this continuing throughout the year?

9. Lee particularly loves animal stories. How does this type of story motivate him to try more challenging work?

10. Tell me about the assessment tests (STAR, PALs) with regard to Lee- from the beginning of the year to the present, what has occurred?
Cherie specific questions: [Joan Walsh]

1. Tell me about what you think is happening with Cherie- perceptually, cognitively?

2. Do you think she sees things differently? How so?

3. Tell me about the coping mechanisms that Cherie uses when things become a challenge to learn.

4. Tell me how frequently Cherie uses the colored overlay for reading in your classroom. Do you think it helps her?

5. Does Cherie acknowledge that she can read better with an overlay?

6. Throughout my observations, I’ve noticed Cherie has a wonderful appetite for books, in spite of the challenges reading provides her. How do you see this continuing throughout the year?

7. Tell me about her continued Title I support? In your opinion, why does she need it?

8. Explain to me the assessment tests (STAR, PALs) briefly with regard to Cherie-from the beginning of the year to the present, what has occurred?

9. Tell me about Cherie’s progress, if any, which may be due to the colored overlays? What do you think is the influencing factor in her progress -- is she ready to read now developmentally?
Interview Questions – Special Education Resource Teacher

1. How long have you been a reading specialist?

2. What are your qualifications?

3. Briefly explain to me the techniques used to assess a student’s reading abilities.

4. The students that I have observed have a great range of reading challenges; can you tell me a little about that?

5. What are some of the techniques that you and the teachers here have used with these students in the past to learn to read effectively?

6. What is the primary goal of your work with Catie?

7. What is the primary goal of your work with Daniel?

8. What do you hope to find by giving Landon the full educational testing series? What do you suspect?

9. The children I have tested with the Children’s Embedded Figures Test (Witkin, et al, 1971) have been shown to be field dependent in varying degrees. Does their field dependence explain anything to you in terms of their reading/learning difficulties?

10. Can you explain the reasons a child would be placed in a Title I reading program? Can you explain the difference between Title I and Reading Recovery in terms of why a child is given one type of support or the other?

11. To further the last statement, can you help me understand why the children that are getting Title I help were (collectively) unaided by the Reading Recovery Program previously offered them?

12. Physiological attributes are also something you work with in these children; can you explain to me the tracking exercises you are doing with Daniel? Are they helping? Are there other things that you think may help?

13. Are there any physiological attributes of the other children that stand out as perhaps a reason that they may be having difficulties?

14. Have you used a colored overlay with Catie? Daniel?

15. When you started working with the colored overlays, what was the initial reaction by the children?
16. What are some of the changes that you have noticed with the children using colored overlays, if any at all?

17. Students exhibiting certain characteristics might be helped more with the colored overlay than other students. Where do you see the colored overlays being best used with regard to curricula? For what type of student?

18. Self-confidence is a large factor in a child’s ability to learn just about anything; praise is a constant reward in the work that I’ve observed here with the children in varying classrooms; have you seen confidence build in any of the children by using the colored overlays? In your opinion, is it a false sense of confidence?

19. Do you have children that the overlays don’t help? Please offer concrete examples.

20. How do you explain how the overlay is working for these children? Can you elaborate?

21. What colors do the children with learning difficulties predominantly choose?

22. Have you noticed a pattern in color-to-difficulty?

23. Do you think these overlays are something that the child must use for a period of time in order to benefit from them or have you seen immediate responses with their use?

24. What are some of the educational changes you’ve seen in prolonged use of the overlays?

25. What are some of the changes you hope to see with continued use of the overlays?
Interview Questions – Reading Specialist

1. How long have you been a reading specialist?

2. What are your qualifications?

3. Briefly explain to me the techniques used to assess a student’s reading abilities.

4. The students that I have observed have a range of reading challenges; what are some of the primary steps taken to combat these reading problems? At what grade level do these steps begin in earnest? Why at this level?

5. What are some of the techniques that these students have used in the past to learn to read effectively?

6. I have tested each of the children in this study for field-dependency, a cognitive characteristic that offers researchers an understanding of how a person perceives images; some people are not able to disembed parts from a whole, within a picture, or even a word from a sentence or line, and it is these students that are field dependent. The test results indicate that the all of the children in this study are field dependent. What, if anything, do these test results indicate to you? How might this information effect instructional decisions made? In what ways?

7. I’ve learned that each of the children I’m studying have also been through a program called “reading recovery” and with each student, the program didn’t help their reading problems. Can you explain briefly the foundation of reading recovery techniques, and speculate as to why these children didn’t gain from this program?

8. I am interested in learning how your colleagues and you learned about colored overlays. Upon learning about them, did this technique sound as if it may have a place in your school? Why?

9. How do you use the colored overlays with the children you are working with?

10. What differences, if any, do you see in the children’s reading, comprehension, confidence, and self-efficacy, in general?

11. When you started working with the colored overlays, what was the initial reaction by the children?

12. Do these reactions to the overlay give you enough cause to continue use?

13. It’s been 3 months, roughly, that the colored overlays have been available to the children. Has the novelty of their use worn off? Do you think they are still reading “color” and not “through color?”
14. What colors do the children with reading difficulties predominantly choose?

15. Have you noticed a pattern in color-to-difficulty, meaning do you see a pattern in children with visual problems choosing a certain color of overlay, as opposed to a child suspected of having organizer-building problems choosing a different colored overlay?

16. Tell me about the overlay used with reading “strips” (used as a guide to follow along word by word) and how they may work in conjunction with the colored overlays.

17. Tell me about the overlays being used consistently in reading for these children; do you think these are something that the child must use for a period of time in order to benefit from them or have you seen immediate responses with their use?

18. What are some of the changes you’ve seen in prolonged use of the overlays in the child’s reading?

19. What are some of the educational changes that you have noticed with the children using colored overlays?

20. Where do you see the colored overlays being best used with regard to curriculum? Why?

21. Tell me about the children that the overlays don’t help. Could you give me concrete examples, and perhaps speculate on why this is so?

22. How do you explain how the overlay is working for these children? Can you elaborate?

23. Will these colored overlays be made available to those children using them during school breaks/summer breaks if they desire to have them? How will you decide on the administration of this?

24. Tell me about the changes, if any, in the children’s attitude towards reading? Learning? Describe any changes you notice in their self-efficacy.

25. Have you seen a change in comprehension with these students? Can you elaborate?

26. Tell me about some of the changes you hope to see with continued use of the overlays.

27. Where will you go from here with the children that are using the colored overlays?
28. I haven’t given you a chance to speak about each child’s situation individually; is there anything you’d like to add about Lee? Cherie? Catie? Daniel?

29. Is there anything else you’d like to share with me regarding the children that are part of this study and their reading histories? Please elaborate.
Interview Questions – Administration

1. How long have you been with the School?

2. What are your qualifications?

3. Briefly explain to me the techniques used to assess a student’s reading abilities in this school; how do the techniques vary with grade level and ability?

4. The students whom I have observed have a range of reading challenges; what are some of the primary steps taken to combat these reading problems? At what grade level do these steps begin in earnest?

5. What are some of the techniques that this school has used in the past to help to teach reading effectively?

6. How do you stay informed about student progress in classes, and particularly reading classes? What are the mechanisms and feedbacks you offer to the teachers as well as the parents on the progress of each student?

7. I’m interested in learning how your colleagues and you learned about colored overlays. Upon learning about them, did this technique sound as if it may have a place in your school? Why?

8. What are some of the changes that your colleagues and you have noticed with the children using colored overlays?

9. Where do you see the colored overlays being best used with regard to curriculum? Why?

10. Tell me about the children that the overlays don’t help. Could you give me concrete examples?

11. Do you think these overlays are something that the child must use for a period of time in order to benefit from them? Please explain your response.

12. Will these colored overlays be made available to those children using them during school breaks/summer breaks if they desire to have them? How will you decide on the administration of this?

13. What are some of the changes you’ve seen in prolonged use of the overlays?

14. What are some of the changes you hope to see with continued use of the overlays?

15. Do you see changes in the children’s attitude towards reading? Learning? Describe any changes you notice in their self-efficacy?
16. I have tested each of the children in this study for field-dependency, a cognitive characteristic that offers researchers an understanding of how a person perceives images; some people are not able to *disembed* parts from a whole, within a picture, or even a word from a sentence or line, and it is these students that are *field dependent*. What do these test results indicate to you? How might this information effect instructional decisions made? In what ways?

17. I have learned that each of the children I am studying have also been through a program called “reading recovery” and with each student, the program did not help their reading problems. Can you explain briefly the foundation of reading recovery techniques, and speculate as to why these children did not gain from this program?

18. Is there anything else you would like to share with me regarding the children that are part of this study and their reading histories? Please elaborate.

19. Is there anything else you’d like to add to this interview?
Appendix D

Puzzle Pieces

Hink Pink

Cause and Effect
A: Puzzle pieces placed together incorrectly; the way each of the four children placed the pieces.

B: Puzzle pieces as they should be placed together, correctly; notice the seam of the two pieces meet to create a solid outer line of the turtle shape.
Hink Pink: used in Title I reading groups to help teach familiarity of sound, word structure and alliteration.
<table>
<thead>
<tr>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sister wanted a dog</td>
<td>Mom said no</td>
</tr>
<tr>
<td>Dog got in the way</td>
<td>Tied up the dog</td>
</tr>
<tr>
<td>Put dog outside</td>
<td>Dog barked</td>
</tr>
<tr>
<td>Dogs fought</td>
<td>Walked dogs separately</td>
</tr>
</tbody>
</table>

BOOK: Kerry’s Double

_Cause and Effect:_ The children in Title I classrooms explained causes and effects of the story plot for _Kerry’s Double_. This was an extremely difficult process to understand and develop for most of the students, especially (noted in personal observations) that field dependent children had a difficult time taking the “story line” apart (personal observations, January 16, 2002).
Appendix E

Children’s Embedded Figures Test

Test Cards P1-P2
P1-P2: Children’s Embedded Figures Test Cards, Series P1-P2. Triangle is embedded within each picture.