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THE IMPACT OF SPEECH-LANGUAGE PATHOLOGIST SERVICE DELIVERY  
MODELS FOR CONCEPT IMAGERY FORMATION INSTRUCTION ON  
SECOND GRADE STUDENTS' LANGUAGE ACHIEVEMENT OUTCOMES

By

Jennifer L. Allen

A DISSERTATION

Presented to the Faculty of

The Graduate College of the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Omaha, Nebraska

November 2008

Supervisory Committee

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University of Nebraska at Omaha, 2008

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ABSTRACT

Implementing effective strategies to meet the learning needs of an increasingly diverse student population, while balancing the demands of increasing caseloads, has become a challenge for Speech-Language Pathologists. The Visualizing & Verbalizing Program was implemented in this study as a way to incorporate concept imaging techniques. During the 2007-2008 school year, second grade students participated: 18 in the coteaching service delivery model, and 16 in the consultative. Classroom teachers and the Speech-Language Pathologists were trained and collaborated in the intervention and the service delivery models. Student achievement was measured with the Listening Comprehension Test-2 and the Twelve Structure Word Visualizing and Verbalizing Instruction checklist, and was analyzed using two-way analyses of variance for time (pretest-posttest) and delivery model. Overall findings indicate that the Visualizing and Verbalizing Program was effective in increasing students' concept imaging and listening comprehension, and the type of service delivery utilized did not affect growth of language achievement. With strong intervention techniques and effective collaborative service delivery models put into place, students reap the rewards.

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## CHAPTER 1

### Introduction

Finding effective teaching strategies to meet the variety of learning needs for an increasingly diverse student population has become a challenge for special education teachers and general educators. Speech-Language Pathologists (SLPs) can offer a variety of service delivery options for intervention of language-based concerns in the general education classroom. Ensuring that evidence-based practice is offered through research-based learning strategies is a primary concern for SLPs when balancing the demands of increasing caseloads and diverse needs of classrooms.

SLPs have many skills to share in a general education setting. They possess the training and expertise to provide a language focus, have an appreciation and awareness of individual differences in learning, and provide skills in task analysis (Edgar & Rosa-Lugo, 2007; Secord & Wiig, 1991). One of the most important skills of an SLP is language focus. SLPs have been trained to evaluate and instruct in the area of language development and therefore have a specialized view of all learning (Wadle, 1991).

In 1986, Madeleine Will laid a foundation to challenge the efficacy of the traditional service delivery model of pull-out therapy. She began a movement to put special education students back into the regular classroom. This offered general and special educators the opportunity to work together and teach all children to read, speak, think and write. Will's report to the Office of Special Education contributed to the Regular Education Initiative (REI) (Will, 1986).

SLPs have become integral participants in the REI. Since then, the traditional pull-out model of service delivery has gradually been replaced by a co-teaching/consultative model in our schools around the country (Ehren & Ehren, 2004). Both the co-teaching and consultative service delivery models are collaborative service delivery models. Collaborative service delivery models offer SLPs and teachers the opportunity to plan, discuss, assess and implement ideas that benefit the student in the classroom. SLPs who work within such a model serve as an integral member of an educational team that includes general and special educators. The responsibility of each member may vary, but the primary objective is to meet each student's needs within the general classroom (Ferguson, 1991).

#### *Importance of the Study*

Recent trends of SLP caseloads indicate an increased responsibility in the scope of practice for the profession (Annett, 2003). It is becoming increasingly difficult to meet the variety of educational needs of a diverse student population with increasing numbers of students and with limited time to deliver services (Saunders, 2007). As caseload numbers and job responsibilities increase, the attrition and job satisfaction of the public school SLP is adversely affected. Large caseloads constrain the service delivery options that SLPs can provide to students with disabilities. Despite the Individuals with Disabilities Education Act (IDEA, 1997) focus on collaboration and consultation, most intervention services continue to be delivered through a pullout model, primarily with groups rather than individuals (ASHA, 2002).

Changes are available in the way service is delivered to children learning language in order to access curriculum effectively and efficiently. For classroom-based interventions to be optimally successful, they depend on collaboration and agreement between the professionals involved in their delivery (Beck & Dennis, 1997; Ehren & Ehren, 2004). The variety of language and learning needs in school offer opportunities for collaboration in the classroom. Students come to educators with varying levels of ability to understand and accurately recall spoken and written language. Farber and Klein (1999) recognize that although there is not one perfect service delivery model, the public school SLP should become involved in improving the language competencies of students so that all children have a greater opportunity to succeed with the curriculum. Research shows that early language disruptions are predictive of and are principal determinants of later academic difficulty (Bashir, 1989).

Taking into account that all children benefit from research-based intervention techniques and that language is intertwined across all content areas, the expertise of the SLP must be appropriately utilized. When schools combine the experience and expertise of the SLP and the classroom teacher to implement meaningful instruction, students have additional opportunities to improve language outcomes. It is critical to empower every student with learning strategies that can be carried over into the variety of learning opportunities throughout the student's entire day.

Administrators are working to embrace the knowledge of their staff and support ways to nurture a collaborative relationship among them. Encouraging

and supporting the school SLP to contribute to language development in the classroom increases the likelihood of overall understanding and expression of students in our schools (Secord & Wiig, 1991). This encourages a proactive approach to learning language skills and can serve as preventative maintenance for further verifications into special education. It is also imperative to work to utilize the education workforce in a more meaningful and effective manner. Increased attrition rates and less job satisfaction of SLPs continue to plague our schools (Edgar & Rosa-Lugo, 2007).

### *Context and Rationale of the Study*

The manner in which special educators, including SLPs, deliver special education services is constantly evolving. Federal guidelines such as the Reauthorization of Individuals with Disabilities Act (IDEA, 1997), push the framework of inclusive practices. Students have the right to a general education, and the option of least restrictive environment can not be thought of as a privilege. The rationale for access to general education is to empower students to overcome their disabilities by equipping them with coping and compensatory mechanisms whenever possible (Fordham, 2001), yet the American Speech-Language Hearing Association (ASHA) reports that large caseloads constrain the service delivery options for SLPs (ASHA, 2002).

The researching school district is considered an urban school district that holds high expectations for all teachers and students. Practices are expected to be put into place that uphold these expectations for all students.

In order to explore service delivery models that target language development strategies that benefit special education students and general education students, the Visualizing & Verbalizing Program (V/V) was implemented in two second grade classrooms. V/V is a research-based technique that reinforces concept imagery and improves comprehension (Lindamood, Bell, & Lindamood, 1997). Both classroom teachers were trained in the V/V program. The intervention was initiated by the school district and was completed by May, 2008. This study examined how student language achievement outcomes from a naturally formed sample of second grade students were affected when using appropriate concept imagery strategies that are directly received from a speech-language pathologist led V/V instruction (SLP-Led) compared to instruction that is speech-language facilitated V/V instruction (SLP-Facilitated). The SLP-Led service delivery model is co-teaching with the SLP and the teacher in the classroom. The SLP-Facilitated service delivery model is consultative and information based between the SLP and classroom teacher outside of the classroom.

This research measured growth in language achievement from the norm-referenced Listening Comprehension Test-2 (LCT-2). A pretest-posttest analysis took place from a checklist which measures understanding of the twelve structure words from the V/V program. This checklist is called the Twelve Structure Word Visualizing and Verbalizing Instruction (TSWVVI) checklist. From a study perspective the SLP-Led and SLP-Facilitated created a natural pretest-posttest

opportunity in which a school's service delivery model of the V/V program was measured and analyzed.

### *Purpose Statement*

The purpose of this study was to analyze how student language outcomes were affected when using appropriate concept imagery strategies taught directly by the speech-language pathologist (SLP-Led) or taught by the classroom teacher with SLP information and training (SLP-Facilitated). The Visualizing and Verbalizing (V/V) program was implemented as a way to incorporate concept imaging techniques to increase language outcomes for second grade students.

### *Research Questions*

The following research questions were drawn from the literature and used to guide the study:

*Research question #1:* Is there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for:

- (a) main idea
- (b) details
- (c) reasoning
- (d) vocabulary
- (e) understanding messages and
- (f) total test battery?

*Research question #2:* Is there a difference between student success on language achievement outcomes as determined by the Twelve Structure Word Visualizing and Verbalizing Instruction (TSWVVI) checklist pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest?

### *Definition of Terms*

*Caseload.* A caseload is the total number of students who qualify for speech-language services. The term caseload typically refers to the number of student with individual education plans (IEPs) that school-based SLPs serve through direct and/or indirect service delivery options (ASHA, 2002).

*Collaboration.* Collaboration is described as a style for direct interaction between at least two co-equal parties voluntarily engaged in shared decision making as they work toward a common goal (Cook & Friend, 1989). Collaboration has also been defined as an advanced way of working with people, where together they agree to achieve long term, often complex, goals (Stephens, 1986).

*Concept imagery.* Concept imagery is the ability to make pictures in the mind in order to increase comprehension through visualization techniques. Students who utilize concept imagery techniques have strong reading comprehension, strong oral language comprehension, strong verbal skills and strong thinking skills (Paivio, 1979).

*Consultation.* Consultation is a voluntary process in which one professional assists another to address a problem concerning a third party (Cook & Friend, 1989)

*Evidenced-Based Practice (EBP).* EBP is the term that describes the process clinical professionals go through as they consult various types of information to answer a clinical question. The goal of EBP is the integration of clinical expertise, best current evidence, and client values to provide high-quality services reflecting the interests, values, needs, and choices of individuals that are served (ASHA, 2008).

*Inclusion.* Inclusion is the concept of placing special education students into the regular classroom where general and special educators can work together to teach children to read, speak, think , and write (Will, 1986).

*Least Restrictive Environment.* The least restrictive environment is where a student with a verified disability can be served in the regular classroom setting to the maximum extent possible. The further away from a regular classroom, the more restrictive the placement is said to be (Fordham, 2001).

*Listening Comprehension Test-2 (LCT-2).* The LCT-2 is a standardized test that examines how children use listening skills in the classroom to help them transfer what they learn in daily lessons. This test includes subtests that measure the following classroom listening comprehension behaviors: summarizing and sequencing information, participating in class discussions, following directions, understanding the main idea of a story or discussion, attending to the details of a

message, understanding language concept, problem-solving, predicting and listening for meaning (Bowers, Huisingh, & LoGiudice, 2006).

*Speech-Language Pathologist (SLP)*. The SLP is a trained educational professional who is qualified to assess, diagnose, and offer intervention for disorders in the area of voice, fluency, articulation and language. An SLP is a resource in the school setting who collaborates with other educators and is qualified to offer learning strategies to enhance generalization of skills into all content areas (Edgar & Rosa-Lugo, 2007).

*Speech-Language Pathologist Facilitated Service Delivery Mode (SLP-Facilitated)*. The SLP facilitated service delivery model is a service delivery option to offer intervention and learning strategies through consultation with the classroom teacher. The SLP does not give direct language instruction in the classroom with this service delivery model. This is also known as information-based or consultative based intervention (Ferguson, 1991).

*Speech-Language Pathologist Led Service Delivery Model (SLP-Led)*. The SLP led service delivery model is a service delivery option to offer intervention and learning strategies in the classroom with the classroom teacher. The SLP is involved with direct language instruction in the classroom with this service delivery model. This is also known as inclusion, co-teaching or collaboration (Ferguson, 1991).

*Standard Score*. A standard score is the translation of a raw score into a statistical score that describes the raw score's distance from the mean.

*Twelve Structure Word Visualizing and Verbalizing Instruction Checklist (TSWVVI)*. This checklist measures the understanding of the structure words that are part of the V/V program. The twelve structure words are: what, size, color, number, shape, where, time, background, movement, mood, perspective and sound.

*Visualizing and Verbalizing Concept Imagery Program (V/V)*. The V/V program is a research-based instructional program designed to enhance concept imagery from language that is read or heard. The program is intended to target language comprehension, reasoning for critical thinking and expressive language skills (Bell, 1986).

*Workload*. Workload refers to all activities that are required and performed by school-based SLPs. ASHA guidelines divide the school-based SLP's workload into four activity clusters: direct services to students; indirect activities that support students in the least restrictive environment and the general education curriculum; indirect services that support students' education programs; and activities that support compliance with federal, state, and local mandates (Annett, 2003).

### *Assumptions*

This study has many strong features. The V/V instruction was provided to the second grade teachers by the SLP in a 2-day training. It consisted of sessions that were 3 hours each and included hands-on learning with students. Both second grade teachers and the SLP were knowledgeable in the V/V program. The SLP was available to answer questions prior to and after

classroom sessions. Six weeks of 30-minute V/V sessions were scheduled throughout the school year. Participating teachers received ongoing support from the SLP through observations and reflective conversations throughout the school year.

It is assumed that students who are taught the concept imagery techniques will improve overall listening and reading comprehension in second grade. It is also assumed that students who actively have opportunities to practice these concept imagery strategies will remember details more easily and be able to recall information more accurately. The researcher had ethical access to the study interventions and student achievement data.

#### *Delimitations and Limitations of the Study*

Limits to this study include the number of second grade students and teachers. This study can not be generalized and interpreted beyond the study group.

This study was delimited to the second grade students of a Midwestern elementary school during the fall of 2007 and the spring of 2008. The samples from this study were limited to two second grade classes at one elementary school.

#### *Significance of the Study*

Research, policy, and practice have the potential to be affected by this study. It is of particular interest to SLPs, classroom teachers, administrators, students, parents and researchers.

*Contribution to research.* Limited research is available to draw conclusions about the language and achievement outcomes on students who received mental imagery instruction from an SLP-Led services delivery model compared to an SLP-Facilitated service delivery model. This study measures the outcomes of the SLP-Led and the SLP-Facilitated service delivery model. Results of this study may contribute to the theoretical literature of service delivery options for SLPs and effective strategies to be utilized for language comprehension instruction.

*Contribution to practice.* The results of this study may assist SLPs in determining how to offer a preventative model for language instruction along with supporting the decision to use a classroom-based service delivery model. This may assist in managing increasing caseloads and workloads. Empowering the classroom teacher with visual imagery strategies that benefit all students will also take place.

The importance of collaboration improves the quality of education services and breaks down unproductive practices between staff. Collaboration supports the practice of solving problems in multiple ways. It helps educators focus on the issue at hand by evaluating learning barriers in the classroom and choosing appropriate functional intervention goals. Collaboration between the SLP and the classroom teacher helps to consider the extent to which the student's language and learning abilities will impact teaching and learning in the classroom (Secord & Wiig, 1991). SLPs and teachers need shared vision, shared knowledge base and shared responsibility. This shared vision of collaboration can be viewed as a consultative model or a co-teaching model. Consultative collaboration is

information-based between the SLP and teacher outside of the classroom. Co-teaching collaboration is with the SLP and teacher working together in the classroom and outside of the classroom. Continued research on collaboration will support federal mandates to consider the least restrictive environment, establish the context for achieving educationally relevant outcomes for students, and demonstrate that the SLP is an important member of the educational team (Ehren & Ehren, 2004).

*Contribution to policy.* This study will impact local level service delivery options. SLPs and administrators could decide to offer implementation of a collaborative approach for concept imagery language techniques to enhance student achievement for all students district-wide.

#### *Outline of the Study*

The literature review that is relevant to this study is available in Chapter 2. The research design, methodology, and procedures that were used to collect and analyze the data of this study are available in Chapter 3. Results of the study are detailed in Chapter 4, and discussed in Chapter 5.

## CHAPTER 2

### Review of the Literature

#### *Collaborative Language Intervention*

Every student is our responsibility. Every student can learn. Every student has strengths that can be built upon. A sense of competence must be fostered in all students (Secord & Wiig, 1991). These are essential convictions that all educators should share. Secord and Wiig (1991) have contributed to a paradigm shift for increased collaborative language intervention that breaks down barriers for successful service delivery models for SLPs.

This literature review examined the evolution of the SLP role and evidence-based collaborative practices utilizing intervention models. Whether the intervention is consultative or co-teaching, SLP practices are capable of supporting classroom teachers in a variety of ways. Consultative intervention and co-teaching intervention are collaborative service delivery models. Intervention practices that respond to student difficulties and needs, focus on academic success, are a product of long-term thinking, allow professionals a shared educational role, are delivered in a student-centered approach, and embrace total quality thinking will facilitate the need to impact a variety of learners in our classrooms.

Collaboration has been defined as an advanced way of working with people, where together they agree to achieve long term, often complex, goals (Stephens, 1986). Cook and Friend (1989) describe collaboration as a style for direct interaction between at least two co-equal parties voluntarily engaged in

shared decision making as they work toward a common goal. Collectively, team decisions are often superior to those derived by any one individual (Abelson & Woodman, 1983).

In an effort to maintain quality of services and utilizing our resources most effectively, collaboration can be considered as a viable option for service delivery in our schools. This will require a paradigm shift, a constancy of purpose, an emphasis on quality and long-term thinking (Secord & Wiig, 1991).

### *Contrasting Perspectives on Service Delivery Models*

SLPs and researchers have been known to give different perspectives on how speech-language services should be offered in schools. Traditional service delivery models offer a more clinical approach to direct intervention and specific goals can be improved upon. However, taking into consideration the increasing caseload numbers and variety of the student population, SLPs are working to reevaluate how they utilize their skills and support opportunities for generalization into the classroom (Throneburg, Calvert, Sturm, & Paramboukas, 2000).

Collaboration between teachers and SLPs support inclusive opportunities for all students. Classroom teachers have to be prepared to work with all students.

Efforts are being made to establish partnerships between SLPs and classroom teachers whose common goal is to enhance language achievement outcomes.

When the SLP enters the classroom to teach with the classroom teacher, students do not need to be removed from important content that is being taught. Research on a collaborative model shows that when language enhancement strategies are integrated into classroom instruction, the problems with

generalization of skills from the context of therapy are lessened (Culatta & Horn, 1982; Mulac & Tomlinson, 1977). Because intervention occurs within the classroom, the teacher has ongoing opportunities to observe the interaction, developing a model of what therapy looks like and how to respond to the student. It allows for regular contacts between the teacher and the SLP so that both parties remain better informed concerning the problems and progress exhibited by the child (Damico, 1987; Mahoney & Weller, 1980; Miller & Sabatino, 1978).

Creaghead (1999) supports the idea that if services to children are to be provided in the most efficient and efficacious manner, then treatment methods must be compared against each other and against the absence of treatment. This study analyzes an option to service delivery that is not as traditional and clinical in nature.

Supporting the learning needs of a diverse student population means that research-based programs must be available to all students. This research analyzes service delivery options that can be available to increase oral and written comprehension in our classrooms in an effort to support high expectations for all learners. The advantages that a collaborative model offers compared to a traditional pull-out model offers support not only to the language impaired student, but the student's peers, the classroom teacher, and the SLP.

### *Speech-Language Pathologists' Roles in the Classroom*

The traditional role of the SLP has been connected with the SLP taking a student out of the classroom to provide intervention by teaching strategies that are supposed to support the identified communication impairment. This is known

as the pullout service delivery model. The student is taken out of the classroom environment and opportunities for application of strategies in the classroom is limited (Throneburg et al., 2000).

Historically, speech-language interventions often used pull-out models featuring individual or small group treatment. Since 1975, however, changes in federal law, as well as general philosophies towards the education and treatment of children with disabilities has motivated SLPs to consider more inclusive approaches to intervention (Ehren & Ehren, 2004).

The American Speech-Language Hearing Association (ASHA) reports that large caseloads constrain the service delivery options the SLP provides student with disabilities. Despite IDEA's focus on collaboration and consultation, most intervention services continue to be delivered through a pullout model, primarily with groups rather than individuals (ASHA, 2002). Changes in the way special education services are delivered to children with communication disorders are taking place in schools across the country. In order for successful collaboration to take place between SLPs and public school staff/administration, it is essential that the role of the SLP in the public school setting is clearly articulated (Edgar & Rosa-Lugo, 2007).

Ehren and Ehren (2004) state that SLPs should try to reinvent speech-language services in the schools. Traditional schedules and methods should be replaced by an array of services that capitalizes on the benefits of the educational setting.

A student's schedule is complex and varied, but it always should relate to classroom time. Confinement to one room for SLP services does not lend itself to learning in a generalized setting. Charles Van Riper (1963), the founding leader in speech-language pathology, believed that speech therapists should find an opportunity for service in the natural setting so that a transfer of new skills can be incorporated into the child's daily life at school.

Collaborative services provide opportunities to communicate, provide a variety of communication opportunities and partners, avoids changes in a student's day that can disrupt learning and more closely resembles real life (Ehren & Ehren, 2004). No Child Left Behind (NCLB) (2002) mandates that services should offer a continuing and increasing link with general curriculum. Utilizing the collaborative service delivery model is an option that offers access to regular curriculum which increases accountability and academic outcomes.

Meeting the language and achievement needs of a wide variety of diverse learners has increasingly become a challenge for speech-language pathologists (SLPs) and general educators. The introduction of the Regular Education Initiative (REI) (Will, 1986) has challenged special educators in the public schools to deliver more services in the regular classroom. This has had quite an impact on how speech and language services are delivered to students in our schools. A collaborative classroom based approach has shifted to a primary focus for service delivery options for school-based SLPs. This is a shift from the traditional pull-out intervention model that many educators are comfortable with. Suggested advantages of collaboration include increasing SLPs' knowledge about

curriculum, increasing teachers' strategies for children with communication difficulties, improving generalization of skills to classroom curriculum, and serving a larger population including "at risk" children who do not qualify for speech or language services (Block, 1995; Cirrin & Penner, 1995; Ebert & Prelock, 1994; Miller, 1989; Nelson, 1989).

Theoretical literature has stated that collaboration may be beneficial not only to speech or language-impaired students, but to all students who participate in the experience (Simon, 1987). Findings from Throneburg et al. (2000) showed that general education students who were not verified for speech or language services reported the collaborative and classroom-based models increased vocabulary skills to a significantly greater degree than receiving only regular instruction from the classroom teacher.

Farber and Klein (1999) evaluated the effects of collaborative intervention in 12 kindergarten and first grade classes and indicated that children who participated in the collaborative language enrichment program demonstrated significantly higher abilities in understanding vocabulary and cognitive-linguistic concepts, as well as increased writing skills, when compared to control classes who received regular curricular instruction from the classroom teachers only.

The 1997 Amendments to the Individuals with Disabilities Education Act contains revised provisions that focus on functional IEP goals to support the student's progress in the general curriculum (IDEA Amendments, 1997). Today, the focus in the public school system is shifting to functional outcomes (IDEA Amendments, 1997). Utilizing an appropriate collaborative model in which the

SLP and classroom teacher plan and collect data together may prove to be an effective way to measure more meaningful and functional goals.

### *Implications of Speech-Language Pathologist Shortages*

The history of the profession of speech-language pathology has evolved from the clinical nature of speech medicine in a clinical setting, to the educational setting of the realm of “communication disorders”. Therapies that once focused on speech and motor training at the turn of the century in the 1900s, eventually moved to meaningful therapies that fit into the context of everyday life. From 1975 to the present, rather than implementing therapies that are clinical in nature, services have been given in classrooms, homes and community settings (Duchan & Black, 2001). Communication is part of the educational setting in the areas of speech, grammar, semantics, pragmatics, literacy, and voice. The educational SLP is a valuable resource in addressing the assessment and diagnosis of areas of concern with communication in our schools (Duchan, 1984).

In 2002, the U.S. Office of Special Education Programs conducted a study of personnel needs in special education. Respondents reported 11,148 job openings for SLPs in school settings for the 1999-2000 academic year (Office of Special Education Programs, 2002). Fiscal constraints and the increased workload in public schools have made it more challenging to provide effective services to children with communication impairments (Edgar & Rosa-Lugo, 2007). This means that school districts should work to think outside of the box in order to utilize their SLPs in the most effective and efficient manner possible.

During the past decade, many changes have occurred in the discipline of speech-language pathology that have resulted in increased demands on SLPs. Technological advancements in areas such as augmentative and alternative communication, cochlear implants, voice, and dysphagia, coupled with additional administrative responsibilities, legal mandates requiring more paperwork, and interdisciplinary meetings, have increased the workplace demands of SLPs (Blood, Ridenour & Thomas, 2002). With earlier identification of children with communication disabilities, the role of SLP in literacy and increased recognition of the needs of children with multiple disabilities have resulted in large and oversized caseloads, greater time demands, and additional workload responsibilities for SLPs (ASHA, 2000; Blood et al., 2002). These reasons contribute the fact that SLPs are especially vulnerable to job burnout and job dissatisfaction.

An adequate number of SLPs are needed to serve the growing number of diverse students in the public school setting. School districts across the country are struggling to staff SLPs to meet the needs of caseloads. In the fall of 2007, the research district had a shortage of 12.5 SLPs (Saunders, 2007). Students are getting services in a variety of ways. The use of speech-language technicians and language resource teachers have helped fill the gap for students to receive services.

The implication of these shortages means that SLPs are working to find effective ways to manage caseloads and utilize time management. Despite IDEA's focus on collaboration and consultation, most intervention services

continue to be delivered through a pullout model, primarily with groups rather than individuals (ASHA, 2002). The collaborative service delivery model is an option to offer an opportunity to empower classroom teachers and reach multiple students with effective language and learning strategies that impact student achievement and generalization of skills in the classroom.

When the SLP and classroom teacher work as a team, there are more opportunities to implement concept imagery strategies that benefit the student. The teacher is more aware of those aspects of language that are difficult for the child, and is more able to reinforce this language within her own teaching or to modify her language appropriately when interacting with her students (Norris, 1989). A collaborative service delivery model, whether consultative based (SLP-Facilitated) or co-teaching based (SLP-Led), is an option to give students the opportunity to receive extended language training over extended periods of time. Offering this service delivery option plays a role in preventing identification of further speech-language impairments.

### *Visualizing and Verbalizing*

A result of the emphasis on reforming reading and language intervention perspectives has seen resurgence in the Visualizing and Verbalizing (V/V) program (Lindamood & Lindamood, 1997). In 2000, the National Reading Panel published its review of scientifically based reading research found to support reading instruction. Mental imagery, a key component of the V/V program, was identified as having “reliable effects on improving memory for text” (National

Reading Panel, 2000, p. 18) especially when used to recall individual sentences or paragraphs.

The V/V program is a research-based technique that is intended to reinforce concept imagery and improve comprehension. Visualization (imagery) activates one critical aspect of cognition and verbalization (semantic coding) the other aspect of cognition. The program is based on twelve “structure words” that support descriptive details of information given in classroom content. This program is shown to closely align with Dr. Allen Paivio’s Dual Coding Theory (DCT) which identifies two modes for processing information, imagery and language, in which individuals who utilize both simultaneously have better comprehension and use of cognitive processes (Paivio, 1986).

V/V was created by Nanci Bell of Lindamood-Bell Learning Processes (1997). It is one of three reading programs developed and supported by Lindamood-Bell Learning Processes: the other two are Lindamood Phonemic Sequencing Program and Seeing Stars for symbol imagery. The V/V program was designed for use in a variety of settings. It can be utilized in whole class instruction, small group or one-on-one instruction.

The V/V program provides specific steps to develop concept imagery. It helps to create the ability to image a gestalt (whole). This program applies concept imagery to reading comprehension, oral language comprehension, following directions, higher order thinking skills, expressive language and writing. It is used as a listening strategy to assist in creating pictures in the mind.

Best practice indicates that children become better listeners when they have a purpose for listening (Betjemann & Keenan, 2003). Students should be taught how to listen for main points and supporting details of expository text and narrative structure.

V/V relies on teacher directed questions to assist students in forming images. Twelve structure words (what, size, color, number, shape, where, time, background, movement, mood, perspective, and sound) are used to provide a framework from which to create images and also elicit language to discuss what was imaged.

Initially, the teacher shows the student a simple line drawing and elicits a description of the drawing in the context of the twelve structure words. The teacher confirms what the student says at each point and models the imaging process by replaying the complete image the student's words create in the mind. The teacher then takes a turn using language to verbally describe a simple drawing to the student as the student creates the gestalt image in his or her mind. The level of difficulty increases as one moves through the program, from pictures to words, sentences to paragraphs. New skills in this program build upon previously learned skills; therefore it is necessary to teach each skill to the level of mastery (Bell, 1986).

A study of the V/V program (Lindamood et al., 1997) was conducted in a school in Long Beach, California with 2 classrooms of fourth graders. One class served as the control group and the other group received approximately 26 small group training sessions over a three month period.

Although the students instructed with the V/V program experienced improvement in reading comprehension on the Gray Oral Reading Test (GORT-III) that was significantly greater than that experienced by students in the control classroom, this study suffered from a confounding variable between teacher and program effects. Since only one teacher taught the V/V students, differences in outcomes between groups may have been due to simple teacher differences, rather than instructional program differences.

Utilizing concept imagery techniques will work to enable the student to read material and comprehend it more than just recall. The student will learn techniques to generalize to the main idea, infer, conclude and evaluate from imaged gestalts.

### *Dual Coding Theory*

Albert Einstein (1921) said, "If I can't picture it, I can't understand it." Research indicates that many good readers make "movies" in their heads as they read it. Students who struggle with reading comprehension do not use this strategy as a means of understanding text that has been read.

Dual coding theory states that both visual and verbal information are processed differently and along distinct channels with the human mind creating separate representations for information processed in each channel (Paivio, 1986). In order for cognitive functioning to be effective, both imagined and verbal codes for representing information are used to organize incoming information into knowledge that can be stored and retrieved accurately for subsequent use.

Paivio (1986) explained that human behavior and experiences are explained as a dynamic associative process that operates on a network of modalities, specific verbal and nonverbal representations. Imagery and verbal associative process play a major role with representation and comprehension of knowledge, learning and memory, effective instruction, motivation, test anxiety and learning motor skills (Sadoski, 1985).

Poor comprehenders may show a particular benefit from imagery training because it enables – or forces – them, to integrate the information contained in a text in a way that they would not normally do (Oakhill & Yuill, 1991). For example, the use of imagery training may provide poor comprehenders with an alternative route for integration of passage material by using an additional but non-phonological strategy (Center, Freeman, Robertson, & Outhred, 1999).

In order to tap into the meaning of what we read, we must try to understand how our brain is receiving the information in the first place. Our senses are what give us the information we receive. Sensory processing is important in critical thinking. Incoming information becomes consciously processed and integrated with language and imagery for the cognitive benefit of what Paivio (1986) called dual coding.

Dual Coding Theory (DCT) describes the issue of developing the sensory base needed to integrate imagery and language in harmony. Cognition is proportional to the degree to which images and language are integrated (Paivio, 1986). In order to develop either side of the sensory processing coin – parts or wholes – the sensory input of imagery triggers language and language

strengthens the imagery. The reciprocal relationship between language and imagery lays the foundation of what Visualizing and Verbalizing (V/V) is all about.

A critical and direct relationship to DCT is embedded in the V/V program. Paivio (1979) states that the most general assumption in DCT is that there are two classes of phenomena handled by separate subsystems, one specialized for the representation and processing of information concerning nonverbal objects and events (imagery), the other specialized for dealing with language. V/V integrates the two systems of language and imagery, resulting in the imaged gestalt for overall comprehension.

#### *Feuerstein's Theory of Cognitive Modifiability*

Feuerstein supports the concept of mediated learning through problem solving experiences (Feuerstein, Rand, Hoffman, & Miller, 1980). His challenge to teachers is to be mediators who intervene between the learner and the stimulus and between the learner and the response, to assist students to be more effective learners. Mediated intervention during problem solving experiences engage students in discovery learning that results in independence, self-correction, and enjoyment of learning.

Mediators' questions direct students to discover this sensory input, in other words, the students learn to perceive. It is a poor assumption that because sensory information is available to students, it is being processed. Pribram (1971) states that we cannot think about something of which we are not consciously aware, and we cannot be aware of something not perceived sufficiently at the sensory level to come to consciousness. It is the intention of the

V/V program to bring sensory information to a conscious level to be solidified and integrated with language in a dual coding support system.

The focus is intensive Socratic questioning that brings language and symbol imagery into conscious integration until that processing and integration become automatic (Bell, 1986). Utilizing the V/V program as a specific process that engages at the sensory level to stimulate concept imagery, a processing base emerges that enables significant gains in spoken and/or written language competence for learners.

#### *The Effect of Imagery on Comprehension*

Aristotle (348 B.C.) wrote, "It is impossible even to think without a mental picture." Research shows us that imagery can serve as a comprehension strategy, as a mental page for memory storage, retrieval, and as a repository of deeper meaning that unitize text information (Sadoski, 1985). For many, the imaged gestalt (complex, organized whole) is not easily processed. Many times the parts of facts, details, names and dates are processed but not the entire concept. The reason that we ask our students to read and think is to gain more than bits and pieces. We want them to get meaning, to comprehend, to interpret and to reason. The gestalt (whole) is a prerequisite to interpretation and reasoning. The gestalt is the entity from which identification of the main idea, inferring, predicting, evaluating can be processed. Duke and Pearson (2002), showed that school age readers instructed to image while reading, recalled more and made significantly more predictive inferences about story events.

Gestalt is a primary factor basic to the process involved in oral and written language comprehension, language expression and critical thinking. Many students have weakness in creating mental images resulting in poor reading comprehension, low oral language comprehension, weak verbal skills and poor critical thinking.

Duke and Pearson (2002) discuss various comprehension strategies that assist in developing conscientious readers. One of these techniques is teaching visual representations of text. This research supports the notion that a picture is worth a thousand words. Teachers work to help children develop the metacognitive skill of visual imagery as a strategy for improving comprehension. The point is made that text is verbal, abstract, and eminently forgettable; by contrast, the visual flowchart is visual, concrete, and arguably more memorable.

Many times, educators assume that imagery processing develops without instruction in learners. We now know that students may have weak gestalt imagery with a range of severity and symptoms. Bell (1986) confirms that some of these symptoms of weak imagery that result in poor reading comprehension include rereading material numerous times to understand it, difficulty bringing words together to form imaged gestalts, difficulty understanding cause-effect, may not grasp main idea or inferences from spoken or written language, asking and re-asking questions that have already been answered, poor logical thinking and problem solving and showing difficulty expressing themselves easily and fluently. As a result, these symptoms could eventually turn into behavior and academic problems.

Instructional practices for developing comprehension have been known to have students read material and answer questions for main idea, inference, conclusion, prediction and evaluation. This practice may *test* comprehension but does not *teach* comprehension. Students without the ability to automatically image in which parts are visualized and brought together to develop a whole (gestalt) will have a reading comprehension dysfunction that cannot be corrected by just reading more material and answering questions.

Utilizing the SLP to *teach* these strategies in a classroom setting offers opportunities to empower general educators as well as students. These skills can then be applied to various content areas as well as functional outcomes for our students for a lifetime.

## CHAPTER 3

### Methodology

The purpose of this study was to analyze how student language outcomes are affected when using appropriate concept imagery strategies taught directly by the speech-language pathologist (SLP-Led) or taught by the classroom teacher with SLP information and training (SLP-Facilitated). The Visualizing and Verbalizing (V/V) program was implemented as a way to incorporate concept imaging techniques to increase language outcomes for second grade students.

#### *Research Questions*

The following research questions were drawn from the literature and used to guide the study:

*Research question #1:* Is there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for:

- (a) main idea
- (b) details
- (c) reasoning
- (d) vocabulary
- (e) understanding messages and
- (f) total test battery?

*Research question #2:* Is there a difference between student success on language achievement outcomes as determined by the Twelve Structure Word

Visualizing and Verbalizing Instruction (TSWVVI) checklist pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest?

### *Participants*

The number of students was 34. The naturally formed sample of students ( $n = 18$ ) for the SLP-Led model was selected from a second grade class in a public school magnet school program, and a naturally formed sample of students ( $n = 16$ ) for the SLP-facilitated model was selected from the other second grade classroom with the research school. The gender of participants was congruent with the enrollment patterns for second graders in the school, where females represent 50% and males represent 50% of the student population. The age range of the study participants was 7 years to 9 years. All participants completed the first grade at the end of the 2006-2007 school year.

The racial and ethnic origin ratio was congruent with enrollment patterns in the participating school district with 44% White, not Hispanic; 32% Black, not Hispanic; 21% Hispanic; 1.5% Asian/Pacific Islanders; and 1.5% American India/Alaskan Native. The students attend the magnet school based on neighborhood residency along with a lottery of selected students from feeder schools.

Participants from the elementary school chosen were selected from the two second grade classes of 34 students total. A sample was selected from the magnet school with class one class participating in the SLP-Led model and the other class receiving an SLP-Facilitated model with the classroom teacher giving

instruction based on information-based support from the SLP. Target accrual for this study was 34 total students, ( $n = 18$ ) from the SLP led group and ( $n = 16$ ) from the SLP facilitated group. No individual identifiers were attached to the achievement data. Archival data for achievement information was collected retrospectively.

#### *Data Collection Procedures*

Retrospective data was collected by the study's researcher who collected information from the pretest and posttest results from the LCT-2 and the TSWVI. The participant data was coded and names were not included. The study's researcher, the school principal, and the University Dissertation Supervisor were the only people who viewed the individual identifying information. No identifying information was included in any written descriptions of the study.

#### *Description of Procedures*

This 2-group pretest-posttest comparative survey study utilized a naturally formed sample of second grade students who received speech-language pathologist led V/V instruction (SLP-Led) and a naturally formed sample of second grade students who received speech-language pathologist facilitated V/V instruction (SLP-Facilitated). The intervention was initiated by the school district and was completed by May, 2008. All data was collected retrospectively. All student achievement dependent measures for both second grade classrooms were measured for Listening Comprehension Test (LCT-2) standard scores for main idea, details, reasoning, vocabulary, understanding messages, and total

test battery. Student achievement was also used by analyzing the Twelve Structure Word Visualizing and Verbalizing Instruction (TSWVVI) checklist.

### *Research Design*

The two-group pretest-posttest comparative survey study design is displayed in the following notation:

Group 1  $X_1$   $O_1$   $X_2$   $O_2$

Group 2  $X_1$   $O_1$   $X_3$   $O_2$

Group 1 = naturally formed second grade group ( $n = 18$ )

Group 2 = naturally formed second grade group ( $n = 16$ )

$X_1$  = second grade teachers completed a two day summer training session of the V/V Program including a lab with children for hands-on learning and school year information-based support

$X_2$  = speech-language pathologist led V/V instruction (SLP-Led) and co-teaching with classroom teacher with information-based support and teacher follow-through

$X_3$  = speech-language pathologist facilitated V/V instruction (SLP-Facilitated) with information-based support and teacher follow-through

$O_1$  = pretest second grade Listening Comprehension as measured by the (1) Listening Comprehension Test-2 (LCT-2): (a) main idea, (b) details, (c) reasoning, (d) vocabulary, (e) understanding messages, and (f) total test battery and (2) the twelve structure words as measured by the Twelve Structure Words Visualizing and Verbalizing (TSWVVI) checklist rubric.

O<sub>2</sub> = posttest 2nd-grade Listening Comprehension as measured by the (1) Listening Comprehension Test-2 (LCT-2): (a) main idea, (b) details, (c) reasoning, (d) vocabulary, and (e) understanding messages, and (f) total test battery and (2) the twelve structure words as measured by the Twelve Structure Words Visualizing and Verbalizing (TSWVVI) checklist rubric.

Participants comprised a naturally formed sample in both second grade classrooms. Overall composite language achievement scores of second graders were measured to compare with naturally formed peer groups.

### *Instruments*

#### *The Listening Comprehension Test 2*

The Listening Comprehension Test-2 (LCT-2) is a diagnostic test intended to assess listening comprehension for elementary students ages 6-0 through 11-11 (Bowers et al., 2006). The LCT-2 offers standardized data for the following five subtests of main idea, details, reasoning, vocabulary and understanding messages. The first four subtests have 15 items and the last subtest has 16 items, for a total of 76 items. All responses are given verbally to questions that are from spoken questions from the examiner.

Bowers et al. (2006) report that the five subtests measure the students' ability to pay careful attention to what they hear, listen with a purpose in mind, remember what they hear well enough to think about it, avoid being impulsive in giving answers, and express answers verbally.

*Reliability.* The LCT-2 manual (Bowers, et al., 2006) reported reliability was established by both the use of test-retest and internal consistency methods.

Average internal consistency estimates of reliability using Kuder-Richardson 20 (KR20) reliability coefficients were .67 for main idea, .67 for details, .67 for reasoning, .72 for vocabulary, and .71 for understanding messages. These are acceptable levels of reliability for all subtests (Bowers, et al., 2006). The inter-rater reliability that measures agreement in scoring the test was a mean value of 93%, which is a very favorable percentage.

*Validity.* The LCT-2 shows validity to the extent that it assesses all the important or accepted listening comprehension and language skills that are developmentally present at ages within the test domain, and it adequately represents the skills or abilities that are needed in the listening comprehension and language areas being assessed (Bowers, et al., 2006). The empirical validity of the LCT-2 shows that the test is highly satisfactory for differentiating subjects with language concerns from subjects developing normally.

*Twelve Structure Word Visualizing and Verbalizing Instruction (TSWVVI) Checklist*

The TSWVVI Checklist is a criterion measure that assesses the ability of the student to describe the key concept imagery structure words: what, size, color, number, shape, where, time, background, movement, mood, perspective and sound. A short passage is read to the student, and the student must supply accurate information that relates to each structure word, with a checklist score of 0 to 12. Students are determined to be beginning (0-3), progressing (4-6), proficient (7-9), or advanced (10-12). The TSWVVI checklist was administered before the SLP-Led and SLP-Facilitated intervention, and again as a posttest to

measure mastery of the intervention for both study groups. This checklist gives the researcher information that relates to mastery of concepts that support concept imagery for listening tasks. Mastery of this checklist supports evidence that the students have the necessary skills to apply visualizing and verbalizing strategies.

### *Data Analysis*

#### *Variables*

The training and overall understanding of the V/V program was given to the participants that implemented the program to both second grade classrooms. The two second grade teachers received in-service from the SLP in a two day training that was three hours each accompanied by a lab that included hands-on learning with students. Both teachers and the SLP were proficient in implementing the V/V program.

One second grade classroom received instruction of the V/V program from an SLP led model that includes team teaching from the SLP and the second grade classroom teacher. This intervention model included a documented feedback loop that includes e-mails and preset teacher planning and reflection time for a comprehensive co-teaching model.

The other second grade classroom received instruction of the V/V program from an SLP facilitative model that included teaching from the second grade classroom teacher with the opportunity to receive informal input from the SLP. This intervention model also included a documented feedback loop that

includes e-mails or consultation to voice concerns, observations and other relevant information about intervention progression.

The SLP and the second grade teachers scheduled 6 separate 1-week sessions over the time period of 6 months to implement the V/V program. Each session was 30 minutes. Each level of the V/V program increased with each week session. Students began with concept imagery techniques from the V/V program beginning with pictures, then words, then single sentences, then multiple sentences, then paragraphs, and finally multiple paragraphs. Students were expected to utilize concept imagery techniques at all levels. The SLP-Led service delivery model was implemented with the SLP co-teaching with the classroom teacher. Lesson plans and feedback were completed with the SLP and classroom teacher together. The SLP-Facilitated service delivery model was implemented with the classroom teacher implementing the V/V program in the classroom after consultation, feedback and planning with the SLP.

### *Dependent Measures*

Two overarching dependent variables were evaluated for this study, 1) listening comprehension, and 2) mastery of structure word outcomes. All student language achievement dependent measures for the second grade classrooms were measured through use of the LCT-2 in the areas of a) main idea, b) details, c) reasoning, d) vocabulary, e) understanding messages, and f) total test battery. The final dependent measure included results from the TSWVVI checklist that compiles data on the mastery of the structure words which include a) what, b)

size, c) color, d) number, e) shape, f) where, g) time, h) background, i) movement, j) mood, k) perspective, and l) sound.

The LCT-2 and TWSVVI were administered individually to each student before implementation of the V/V program began in the SLP-Led and SLP-Facilitated service delivery models. Upon completion of the sessions SLP-Led and SLP-Facilitated instruction, posttesting took place. Posttesting included administration of the LCT-2 and the TSWVVI.

### *Analysis*

Data were analyzed using two-way analyses of variance (ANOVA). Independent variables included the within-subjects factor with two levels of pretest and posttest of the LCT-2 and the TSWVVI. Independent variables between-subjects factor took place within the SLP-Led and SLP-Facilitated levels. ANOVA is a parametric test of significance used to determine whether a significant difference exists between two or more means at a selected probability level. This determines if the differences among the means represent true, significant differences or chance differences due to sampling error (Gay, Mills & Airasian, 2006). A 2X2 ANOVA was selected as it is efficient and keeps the error rate under control (Gay, et al., 2006). Because of the small sample size, the significance level was .05.

## CHAPTER 4

### Results

The purpose of this study was to analyze how student language outcomes were affected when using appropriate concept imagery strategies taught directly by the speech-language pathologist (SLP-Led) or taught by the classroom teacher with SLP information and training (SLP-Facilitated). The Visualizing and Verbalizing (V/V) program was implemented as a way to incorporate concept imaging techniques to increase language outcomes for second grade students. The number of students who participated in the study was 34.

#### *Research Question 1*

##### *Research Question 1 – Main Idea*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for main idea?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 40.049, p < .0005, d = 0.73$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 0.007, p = .934$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 3.206, p = .083$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 80.85, SD = 5.14$ ) to the posttest ( $M = 84.53, SD = 4.92$ ), regardless of service delivery group. The means

and standard deviations of the Main Idea Domain are displayed in Table 1. The ANOVA for Main Idea is displayed in Table 2.

#### *Research Question 1 – Details*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for details?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 85.153, p < .0005, d = 0.99$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 3.206, p = .083$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 2.522, p = .122$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 76.82, SD = 5.40$ ) to the posttest ( $M = 82.00, SD = 5.06$ ), regardless of service delivery group. Table 3 summarizes the means and standard deviations of the Details Domain. The ANOVA for Details is displayed in Table 4.

#### *Research Question 1 – Reasoning*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for reasoning?

Table 1

*Descriptive Statistics for Main Idea on the Listening Comprehension Test-2*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	79.50	4.74	83.22	4.19
Group 2 SLP-Fac ( <i>n</i> = 16)	82.38	5.27	86.00	5.38
Total	80.85	5.14	84.53	4.92

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Table 2

*ANOVA for Time and Groups for the Main Idea Domain of the Listening*

*Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
<b>Between Subjects</b>					
Group	1	135.334	3.206	.08	ns
Error	32	42.209			
<b>Within Subjects</b>					
Main Idea	1	226.628	40.050	<.0005	0.73
Main Idea*Group	1	0.040	0.007	.934	ns
Error	32	5.709			

*ns* = not significant.

Table 3

*Descriptive Statistics for Details on the Listening Comprehension Test-2*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	75.11	4.82	81.22	4.65
Group 2 SLP-Fac ( <i>n</i> = 16)	78.75	5.50	82.88	5.51
<hr/>				
Total	76.82	5.40	82.00	5.06

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Table 4

*ANOVA for Time and Groups for the Details Domain of the Listening*

*Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
<b>Between Subjects</b>					
Group	1	118.596	2.522	.122	<i>ns</i>
Error	32	47.027			
<b>Within Subjects</b>					
Details	1	443.766	85.153	<.0005	0.99
Details*Group	1	16.707	3.206	.083	<i>ns</i>
Error	32	5.211			

*ns* = not significant.

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 120.923, p < .0005, d = 1.50$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 0.616, p = .438$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 0.210, p = .650$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 78.12, SD = 3.76$ ) to the posttest ( $M = 84.47, SD = 4.72$ ), regardless of service delivery group. Table 5 summarizes the means and standard deviations of the Reasoning Domain. The ANOVA for Reasoning is displayed in Table 6.

#### *Research Question 1 – Vocabulary*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for vocabulary?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 51.379, p < .0005, d = 1.36$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 3.687, p = .064$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 0.795, p = .379$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 83.44, SD = 2.83$ ) to the

Table 5

*Descriptive Statistics for Reasoning on the Listening Comprehension Test-2*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	77.61	2.68	84.39	4.15
Group 2 SLP-Fac ( <i>n</i> = 16)	78.69	4.71	84.56	5.43
<hr/>				
Total	78.12	3.76	84.47	4.72

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Table 6

*ANOVA for Time and Groups for the Reasoning Domain of the Listening*

*Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
<b>Between Subjects</b>					
Group	1	6.618	0.210	.650	<i>ns</i>
Error	32	31.578			
<b>Within Subjects</b>					
Reasoning	1	678.040	120.923	<.0005	1.50
Reasoning*Group	1	3.452	0.616	.438	<i>ns</i>
Error	32	5.607			

*ns* = not significant.

posttest ( $M = 88.47$ ,  $SD = 4.59$ ), regardless of service delivery group. The means  
The ANOVA for Vocabulary is displayed in Table 8.

### *Research Question 1 – Understanding Messages*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for understanding messages?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 63.470$ ,  $p < .0005$ ,  $d = 1.07$ . There was an interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 11.703$ ,  $p = .002$ ,  $d = 1.07$ . Finally, there was significant main effect for group (service delivery model),  $F(1, 32) = 17.172$ ,  $p < .0005$ ,  $d = 1.07$ .

To follow up the significant interaction for Understanding Messages, the simple main effects test for Group 1 for time indicated that there was a statistically significant difference between the pretest ( $M = 81.39$ ,  $SD = 2.77$ ) and the posttest ( $M = 88.31$ ,  $SD = 3.89$ )  $F(1, 32) = 68.893$ ,  $p < 0.005$ ,  $d = 1.97$ . For Group 2 and time there was also a statistically significant difference between the pretest ( $M = 88.31$ ,  $SD = 3.89$ ) and the posttest ( $M = 91.06$ ,  $SD = 4.39$ )  $F(1, 32) = 9.759$ ,  $p = .004$ ,  $d = 0.59$ . Unlike the other domains in the LCT-2, in Understanding Messages Group 1 had a significantly lower pretest ( $M = 81.39$ ,  $SD = 2.77$ ) than Group 2 ( $M = 88.31$ ,  $SD = 3.89$ )  $F(1, 32) = 36.735$ ,  $p < 0.005$ ,  $d$

Table 7

*Descriptive Statistics for Vocabulary on the Listening Comprehension Test-2*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	83.28	2.61	89.56	4.37
Group 2 SLP-Fac ( <i>n</i> = 16)	83.63	3.14	87.25	4.65
<hr/>				
Total	83.44	2.83	88.47	4.59

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Table 8

*ANOVA for Time and Groups for the Vocabulary Domain of the Listening*

*Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
<b>Between Subjects</b>					
Group	1	16.243	0.795	.379	<i>ns</i>
Error	32	20.441			
<b>Within Subjects</b>					
Vocabulary	1	415.334	51.379	<.0005	1.36
Vocabulary*Group	1	29.805	3.687	.064	<i>ns</i>
Error	32	8.084			

*ns* = not significant.

= 2.07. There was no significant difference between Group 1 ( $M = 88.28$ ,  $SD = 4.20$ ) and Group 2 ( $M = 91.06$ ,  $SD = 4.39$ ) on the posttest  $F(1, 32) = 3.571$ ,  $p = .068$ . Table 9 summarizes the means and standard deviations of the Understanding Meaning Domain. The ANOVA for Understanding Messages is displayed in Table 10.

#### *Research Question 1 – Total Test Battery*

Was there a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test–2 (LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest for total test battery?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 170.040$ ,  $p < .0005$ ,  $d = 1.31$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 2.403$ ,  $p = .131$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 3.568$ ,  $p = .068$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 78.32$ ,  $SD = 4.15$ ) to the posttest ( $M = 83.82$ ,  $SD = 4.28$ ), regardless of service delivery group. Table 11 summarizes the means and standard deviations of the Total Battery. The ANOVA for Total Battery is displayed in Table 12.

#### *Research Question 2*

Was here a difference between student success on language achievement outcomes as determined by the Listening Comprehension Test-2

Table 9

*Descriptive Statistics for Understanding Messages on the Listening**Comprehension Test-2*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	81.39	2.77	88.28	4.20
Group 2 SLP-Fac ( <i>n</i> = 16)	88.31	3.89	91.06	4.39
<hr/>				
Total	84.65	4.80	89.59	4.45

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Table 10

*ANOVA for Time and Groups for the Understanding Messages Domain of the Listening Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
Between Subjects					
Group	1	399.184	17.172	<.0005	
Error	32	23.246			
Within Subjects					
Understanding Meaning	1	393.493	63.470	<.0005	
Understanding Meaning*Group	1	72.552	11.703	.002	
Error	32	6.200			
Pairwise Comparisons					
Time*Group 1 (SLP-Led)			68.893	<.0005	1.98
Time* Group 2 (SPP-Fac)			9.759	.004	0.59
Group*Pretests			36.735	<.0005	2.07
Group*Posttests			3.571	.068	<i>ns</i>

*ns* = not significant.

Table 11

*Total Test Battery of the Listening Comprehension Test-2 for Second Grade**Students*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	76.83	3.37	82.94	3.99
Group 2 SLP-Fac ( <i>n</i> = 16)	80.00	4.40	84.81	4.51
<hr/>				
Total	78.32	4.15	83.82	4.28
<hr/>				

Table 12

*ANOVA for Time and Groups for the Total Battery of the Listening*

*Comprehension Test-2*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
Between Subjects					
Group	1	107.358	3.568	.068	<i>ns</i>
Error	32	30.087			
Within Subjects					
Total Battery	1	505.378	170.040	<.0005	0.73
Total Battery*Group	1	7.142	2.403	.131	<i>ns</i>
Error	32	2.972			

*ns* = not significant

(LCT-2) standard scores pretest-posttest and between service delivery models (SLP-Led and SLP-Facilitated) posttest-posttest as determined by the Twelve Structure Word Visualizing and Verbalizing Instruction (TSWVVI) checklist?

There was a statistically significant main effect for time (pretest/posttest),  $F(1, 32) = 230.654, p < .0005, d = 3.58$ . There was no significant interaction between time (pretest/posttest) and service delivery group,  $F(1, 32) = 0.019, p = .891$ . There was no significant main effect for group (service delivery model),  $F(1, 32) = 0.001, p = .975$ .

The statistically significant main effect for time indicated that second graders significantly improved from the pretest ( $M = 5.97, SD = 2.14$ ) to the posttest ( $M = 11.29, SD = .836$ ), regardless of service delivery group. Table 13 summarizes the means and standard deviations of the TSWVVI. The ANOVA for the TSWVVI is displayed in Table 14.

### *Summary*

In summary, the results showed that there was significant improvement in time from the pretest to posttest results of the LCT-2 and the TSWVVI checklist. There was not a significant difference between the service delivery model groups, except for the pretest of understanding messages. All posttests indicated no significance in service delivery model. These results indicate that the Visualizing & Verbalizing Program (V/V) was effective in improving language achievement outcomes for second grade students for concept imaging and listening comprehension. Overall findings indicated that the type of service delivery utilized did not affect growth of language achievement outcomes.

Table 13

*Descriptive Statistics for Twelve Structure Word Visualizing & Verbalizing**Instruction Checklist*


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	Pretest		Posttest	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 SLP-Led ( <i>n</i> = 18)	6.00	2.22	11.28	.895
Group 2 SLP-Fac ( <i>n</i> = 16)	5.94	2.11	11.31	.793
Total	5.97	2.13	11.29	.836

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Table 14

*ANOVA for Time and Groups for the Twelve Structure Word Visualizing & Verbalizing Instruction Checklist*

Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	<i>d</i>
<b>Between Subjects</b>					
Group	1	0.003	0.001	.975	<i>ns</i>
Error	32	3.353			
<b>Within Subjects</b>					
TWVVI	1	480.682	230.654	<.0005	3.58
TWVVI*Group	1	0.040	0.019	.891	<i>ns</i>
Error	32	2.084			

*ns* = not significant.

## CHAPTER 5

### Conclusions and Discussion

Finding effective teaching strategies to meet the variety of learning needs for an increasingly diverse student population has become a challenge for special education teachers and general educators. Speech-Language Pathologists (SLPs) can offer a variety of service delivery options for intervention of language-based concerns in the general education classroom (Farber & Klein, 1999). Ensuring that evidence-based practice is offered through research-based learning strategies is a primary concern for SLPs when balancing the demands of increasing caseloads and diverse needs of classrooms.

The current authorization of the Individuals with Disabilities Act sends a strong message that the instruction for students with a variety of learning needs is changing and must continue to change. Even now, student's Individual Education Programs (IEPs) must include a clear justification for any time spent away from general education. This means educators must encompass strategies to relate instructional content to other learning, to identify and hold the most important aspects of it, and to remember it. Strategies for facilitating instructional accommodations include consultation, preparation of adaptations by special educators, and co-teaching (Friend, 1996).

Educators must work to foster opportunities for professionals to work together in inclusive environments. This increases the likelihood that students who are not verified with a learning disability do not have to fail in school before receiving additional support. Other collaborative initiatives related to inclusive

practices can foster a culture that is accepting of all students and respectful of the contributions each adult has to offer (Dieker, 2007). This study demonstrates the benefit of collaboration, whether consultative or co-teaching in nature, and how this service delivery approach contributes to improvement in language achievement outcomes.

The purpose of this study was to analyze how student language outcomes were affected when using appropriate concept imagery strategies taught directly by the speech-language pathologist (SLP-Led) or taught by the classroom teacher with SLP information and training (SLP-Facilitated). The Visualizing and Verbalizing (V/V) program was implemented as a way to incorporate concept imaging techniques to increase language outcomes for second grade students. The participants in the study were from 2 second grade classrooms; 18 students participated in the SLP-Led service delivery model and 16 students participated in the SLP-Facilitated service delivery model.

Both second grade classroom teachers and the Speech-Language Pathologist that participated in the study were proficient in the V/V program. The 2 second grade teachers received in-service from the SLP in a 2 day training, accompanied by a lab that included hands-on learning with students. Both teachers and the SLP were proficient in implementing the V/V program.

One second grade classroom received instruction of the V/V program from an SLP led model that includes team teaching from the SLP and the second grade classroom teacher. This intervention model included a documented feedback loop that includes e-mails and preset teacher planning and reflection

time for a comprehensive co-teaching model. The other second grade classroom received instruction of the V/V program from an SLP facilitative model that included teaching from the second grade classroom teacher with the opportunity to receive informal input from the SLP. This intervention model also included a documented feedback loop that includes e-mails or consultation to voice concerns, observations and other relevant information about intervention progression.

The SLP and the second grade teachers scheduled 6 sessions over the time period of 6 months to implement the V/V program. Each session was 30 minutes. The level of the V/V program increased with each week session. Students began with concept imagery techniques from the V/V program beginning with pictures, then words, then single sentences, then multiple sentences, then paragraphs, and finally multiple paragraphs. Students were expected to utilize concept imagery techniques at all levels. The SLP-Led service delivery model was implemented with the SLP co-teaching with the classroom teacher. Lesson plans and feedback were completed with the SLP and classroom teacher together. The SLP-Facilitated service delivery model was implemented with the classroom teacher implementing the V/V program in the classroom after consultation, feedback and planning with the SLP.

### *Conclusions*

#### *Twelve Structure Word Visualizing and Verbalizing Checklist*

The TSWVVI checklist measured the ability to describe the key concept imagery structure words: what, size, color, number, shape, where, time,

background, movement, mood, perspective and sound. Mastery of structure words means that students can give an accurate nonlinguistic representation in their minds. The more they combine linguistic information and nonlinguistic representations, the better they are able to think about and recall our knowledge (Marzano, 2001).

Posttest results on the Twelve Structure Word Visualizing and Verbalizing (TSWVVI) checklist showed statistically significant growth with a large effect size in the mastery level of the structure words used to increase concept imagery ( $F(1, 32) = 230.654, p < .0005, d = 3.58$ ). Second grade students significantly improved from the pretest ( $M = 5.97, SD = 2.14$ ) to the posttest ( $M = 11.29, SD = .836$ ), regardless of service delivery group. The pretest mean was determined to be in the Progressing range, while the posttest mean fell within the Advanced range on the TSWVVI rubric.

Pretest scores showed the range of knowledge of structure words to be from 2 (Beginning) to 10 (Advanced). Posttest scores showed know the range of knowledge of structure words to be from 10 to 12 (Advanced). Students did not appear to have mastery of the more abstract concepts such as movement, mood, and perspective during the pretest. Posttest results indicated that there was an understanding of the more abstract concepts of movement, mood and perspective. Direct instruction and opportunity to apply skills did enhance students' skills to apply structure words with words, sentences, and paragraphs. Knowledge of structure words were part of the V/V program and helped students to understand and retain what was taught.

### *Listening Comprehension Test-2*

Comprehending while listening is a large part of learning in the classroom and is one of the primary means of interacting with one another. Proficiency in listening comprehension enhances students' ability to improve language skills by receiving, attending to, interpreting and responding to verbal messages in school.

The Listening Comprehension Test-2 (LCT-2) measures the listening comprehension of elementary students ages 6-0 through 11-11 (Bowers et al., 2006). Total LCT-2 total test battery results indicated that second graders significantly improved from the pretest ( $M = 78.32$ ,  $SD = 4.15$ ) to the posttest ( $M = 83.82$ ,  $SD = 4.28$ ), regardless of service delivery group. Results for time were statistically significant with a moderate effect size ( $F(1, 32) = 170.040$ ,  $p < .0005$ ,  $d = 0.73$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 83.82 for the posttest total battery is congruent with a percentile rank of 13, a stanine score of 3, and an achievement qualitative description of the upper stanine of the Below Average range.

Instruction in the V/V program was an effective intervention to contribute to the growth in language achievement for main idea. Results for time were statistically significant with a moderate effect size ( $F(1, 32) = 40.050$ ,  $p < .0005$ ,  $d = .073$ ) from pretest ( $M = 80.85$ ,  $SD = 5.14$ ) to posttest ( $M = 84.53$ ,  $SD = 4.92$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 84.53 for the posttest main idea is congruent with a percentile rank of 16, a stanine score of 3, and an

achievement qualitative description of the upper stanine of the Below Average range. During students' school lives, they are expected to give the main idea of lectures, stories, math problems and other content area topics. Knowing the main idea means that the "big picture" is understood, which increases the likelihood of success with prediction and problem solving skills (Bowers et al., 2006). Effective teachers stress the importance of higher mental processes, such as problem-solving techniques (Stronge, 2002). These skills enable students to relate their learning to real-life situations and incorporate concepts into their long-term memory.

Instruction in the V/V program was also an effective intervention to contribute to the growth in language achievement for details. Results for time were statistically significant with a large effect size ( $F(1, 32) = 85.153, p < .0005, d = 0.93$ ) from pretest ( $M = 76.82, SD = 5.40$ ) to posttest ( $M = 82.00, SD = 5.06$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 82 for the posttest details is congruent with a percentile rank of 12, a stanine Score of 3, and an achievement qualitative description of the upper stanine of the Below Average range. Listening for details is essential for children to be able to differentiate between important details and unimportant information. Many types of literature may have information that is not related to the gestalt of the story (Bowers, et al., 2006). Proficient readers use images to immerse themselves in rich detail as they read. The detail gives depth and dimension to the reading, engaging the

reader more deeply, making the text more memorable (Keene & Zimmermann, 1997).

As an intervention to contribute to the growth in language achievement for reasoning, the V/V program was effective. Results for time were statistically significant with a large effect size ( $F(1, 32) = 120.923, p < .0005, d = 1.50$ ) from pretest ( $M = 78.12, SD = 3.76$ ) to posttest ( $M = 84.47, SD = 4.72$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 84.47 for the posttest reasoning is congruent with a percentile rank of 16, a stanine score of 3, and an achievement qualitative description of the upper stanine of the Below Average range. Having the ability to reason enhances the ability to show thoughts beyond mere perception. Reasoning includes thinking skills such as making inferences, exploring beliefs and values, comparing and contrasting, making decisions and drawing conclusions (Bowers, et al., 2006). Improving reasoning skills has great potential for producing dramatic effects on student achievement (Marzano, 2001).

Instruction in the V/V program was also statistically significant with a large effect size ( $F(1, 32) = 51.379, p < .0005, d = 1.36$ ) as an intervention to contribute to the growth in language achievement for vocabulary from pretest ( $M = 83.44, SD = 2.83$ ) to posttest ( $M = 88.47, SD = 4.59$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 88.47 for the posttest vocabulary is congruent with a percentile rank of 21, a stanine score of 4, and an achievement

qualitative description of the lower stanine of the Average range. Having deficits in vocabulary skills can affect reading, communicating and learning (Marzano, 2001). If students do not know vocabulary words, then they will not understand what they hear.

Finally, instruction in the V/V program was an effective intervention to contribute to the growth in language achievement for understanding messages from pretest ( $M = 84.65$ ,  $SD = 4.80$ ) to posttest ( $M = 89.59$ ,  $SD = 4.45$ ). Comparing students' standard scores with derived achievement scores puts their performance in perspective. A mean standard score of 89.59 for the posttest understanding messages is congruent with a percentile rank of 25, a stanine score of 4, and an achievement qualitative description of the lower stanine of the Average range.

Unlike the other domains in the LCT-2, Group 1 had a significantly lower pretest ( $M = 81.39$ ,  $SD = 2.77$ ) than Group 2 ( $M = 88.31$ ,  $SD = 3.89$ )  $F(1, 32) = 36.735$ ,  $p < .0005$ ,  $d = 2.07$ ) with a large effect size. Strong instruction in the V/V intervention techniques narrowed the gap between SLP-Led and SLP-Facilitated groups while both increased in language achievement and listening skills. There was no significant difference between Group 1 ( $M = 88.28$ ,  $SD = 4.20$ ) and Group 2 ( $M = 91.06$ ,  $SD = 4.39$ ) on the posttest  $F(1, 32) = 3.571$ ,  $p = .068$ .

Having the ability to understand messages means that students can filter through detailed and lengthy instructions in order to comprehend the intent of a speaker's message. Students must know how to differentiate between information that is irrelevant or not. In order to make decisions about points that

are important to a summary and those that are not, students must analyze the information in depth. Marzano (2001), supports the idea that if students can understand messages, then they can mentally sift through and synthesize information.

Overall, results show that the study was successful in supporting students' ability to pay careful attention to what they hear, listen with a purpose in mind, remember what they hear well enough to think about it, avoid being impulsive in giving answers, and express answers verbally. It is very encouraging to have data that supports the use of concept imagery techniques as effective instructional strategies that enhance student achievement for students. Given that student growth occurred whether in the SLP-Led or SLP-Facilitated model, both models are available for effective collaboration.

The students' language achievement skills did show significant improvement from pretest to posttest. However, posttest results show that there is still more work to do done. The content and complexity of what students will learn may evolve from year to year, but the need for advanced skills in visual imagery will continue to exist. From this study it could be considered possible that this intervention could improve expressive and receptive language skills in other content areas and across grade levels. These results show that supporting research-based instruction in conjunction with collaboration between the SLP and the classroom teacher is successful. With strong intervention techniques and strong collaborative service delivery models (SLP-Led and SLP-Facilitated) put

into place, students reap the rewards. Truly, all of us are in each other's "backyards".

### *Discussion*

#### *Visualizing and Verbalizing Program (V/V)*

Results from this study indicate that the Visualizing and Verbalizing Program is effective in increasing second grade students' listening comprehension. Best practice indicates that children become better listeners when they have a purpose for listening (Betjemann & Keenan, 2003). In the study, students were taught how to listen for main points and supporting details of expository text and narrative structure.

Once a student is able to decode the words off of the page, they should have the ability to visualize and verbalize content accurately, which leads to proficiency in higher order thinking skills. Improving the ability to utilize concept imagery techniques is good practice for all students. When readers create mental images, they engage with text in ways that make it personal and memorable to them alone. Anchored in prior knowledge, images come from emotions and all five senses, enhancing understanding and immersing the reader in rich detail (Keene & Zimmermann, 1997).

The V/V program is reinforced concept imagery and improved comprehension. Visualization (imagery) activates one critical aspect of cognition and verbalization (semantic coding) the other aspect of cognition. This program assisted second graders in processing information, imagery and language to

simultaneously have better comprehension and use of cognitive processes (Paivio, 1986).

Utilizing concept imagery techniques worked to enable the student to read material and comprehend it on a level more than just recall. The students learned techniques to generalize to the main idea, infer, conclude and evaluate from imaged gestalts. It was encouraging and motivating to hear students say that they were excited when “making movies in their head” as they were reading at home or in the classroom after implementation of the V/V program took place.

The results of this research also underline the extreme importance for students to use mental images when reading. Proficient readers understand how creating images enhances their own comprehension (Keene & Zimmerman, 1997). Increasing the likelihood that student understand what they are reading means enjoyment in accomplishment and learning is definitely more likely to occur.

#### *SLP and Classroom Teacher Collaboration*

Along with implementing an effective concept imagery intervention for students, this study had implications for educators themselves. It demonstrated that collaboration works when combined with professional development undertaken by knowledgeable staff utilizing research-based techniques. Effective teachers are constantly searching for group instructional strategies that are as effective as one-on-one tutoring. Teachers who successfully employ a range of strategies reach more students because they tap into more learning styles and student interests. They also use different strategies to ensure that concepts are

well understood (Stronge, 2002). Shellard and Protheroe (2000), state that students of teachers who received training in working with a broad range of students, including culturally diverse students, gifted students, and students with special needs, perform (on average) more than one full grade level above their peers.

More specifically, collaboration between the SLP and the classroom teacher improves the ability to improvise while teaching to meet the learning needs of all students. While there are different perspectives on how speech-language services should be offered in schools, (Creaghead, 1999; Secord & Wiig, 1991), this study offers support to recommend that collaborative and inclusive service delivery is effective in increasing language achievement. Speech-Language Pathologists (SLPs) should continue to move toward a paradigm shift of reevaluating how they utilize their skills and support opportunities for generalization into the classroom (Throneburg et al., 2000). By offering consultation and expertise with specific imagery enhancing techniques in conjunction with the classroom teachers, the SLP was able to make strategies more meaningful in a classroom setting.

In order to maintain quality of services and utilizing resources most effectively, collaboration is a viable option for service delivery in our schools (Secord & Wiig, 1991). For classroom-based interventions to be optimally successful, they depend on collaboration and agreement between the professionals in their delivery (Beck & Dennis, 1997). The effective teacher

engages in dialogue with students, colleagues, parents, and administrators and consistently demonstrates respect, accessibility, and expertise (Stronge, 2002).

SLPs are being urged to provide educationally relevant therapy, which includes therapy that impacts curriculum acquisition (American Speech-Language-Hearing Association Ad Hoc Committee on the Roles and Responsibilities of the School-Based Speech-Language Pathologist, 1999). When SLPs and classroom teachers work to collaborate, each gain skills that demonstrate how strategies can be applied to other curricular area (Miller, 2002).

Collaboration works, but there is no one right way to collaborate, as both consultative and co-teaching models may be successful. When deciding which approach to apply to the classroom, the SLP, teacher, and administration should consider the readiness and willingness of all parties involved to perform the task of collaboration (Hersey, Blanchard & Natemeyer, 1979). The more professional development opportunities are given to staff to enhance teaching techniques and to support ideas of collaboration, the more likely that all staff will be comfortable with utilizing research-based techniques.

It is the responsibility of teachers, support staff and administration to seek out viable options for quality instruction. Collaboration between professionals is a teaching practice that must become common in all educational settings. DuFour & Eaker (1988), give strong reinforcement that the most promising strategy for sustained, substantive school improvement is developing the ability of school personnel to function as professional learning communities. These professional learning communities most definitely include teachers and resources, such as

SLPs, in each public school to build relationships that result in school improvement.

Collaboration means that students are not pulled out of the classroom for services. It means that all students in the classroom will benefit from quality, research-based learning techniques. Decreasing the fragmenting of student schedules while increasing the chance to apply learning strategies is one of the main benefits of collaboration. Ehren (2000) reminds us that changes in the Individuals with Disabilities Education Act (IDEA) of 1997 reinforced the notion that the general education classroom is the least restrictive environment for most students. For many SLPs, this should mean providing therapy to students in their classrooms instead of pulling them out to a therapy room (Wilcox, Kouri, & Caswell, 1991). The content and processes of *language* remain the same regardless of who might be involved in the teaching or learning (Ehren, 2000).

#### *Recommendations for Further Research*

One area that deserves further study is how collaborative service delivery models are impacted by caseload sizes. By targeting early elementary classrooms with research-based learning strategies that prove to be effective, along with utilizing collaboration, future verifications for the increasing caseload sizes that speech-language pathologists find themselves faced with will be affected.

It is also important for future research to look at whether or not concept imagery techniques continue to support language achievement growth for students, and whether expanded instruction continues to increase outcomes in

reading comprehension. The curriculum and academic expectations of the classroom will continue to grow in complexity and challenges. How will students continue to use the skills that were taught to them and generalize those skills into all content areas throughout their academic careers?

Further research on visualization, with larger groups of students and teachers, is recommended. The effect of early concept imagery instruction on listening and reading deserves study. The effect of continued efforts to utilize imagery techniques on a consistent basis in order to ensure proficiency of independent learning skills may help students reach higher levels of language achievement.

### *Summary*

The purpose of this study was to analyze how student language outcomes were affected when using appropriate concept imagery strategies taught directly by the SLP-Led service delivery model or taught by the classroom teacher with the SLP-Facilitated service delivery model. The results indicated an inclusive service delivery model, whether consultative or collaborative in nature, can be an effective model for increasing student language achievement.

SLPs should work to maintain a therapeutic focus that encompasses the integrity of research-based programs while sharing the responsibility for student success (Ehren, 2000). There are great benefits for supporting language skills in the classroom. The classroom setting offers a natural environment that has meaning and multiple opportunities for language growth. Working with teachers, means that facilitation of language needs goes further than just one isolated

lesson. Collaborative service delivery models empower teachers and SLPs to capitalize on language needs of the classroom by modifying instruction and offering increased opportunities for feedback. The teachers that were involved in this study stated that using the V/V program and working in a collaborative manner with the SLP will change the way that they teach their classes in the future.

Students reported that they preferred to use the concept imagery techniques when they were reading in other content areas. They enthusiastically reported that they like to “make movies in their head” when they read. Marzano (2007) gives strong evidence that students who continue to use strong visual instruction over verbal instruction were able to recall information more accurately one year after completion of a learning unit.

SLPs must ask themselves what their true reason is for being in the classroom. It should be to increase language and communication skills. This will assist students in being successful learners. Both teachers and SLPs want classroom success for their students. Although there is a place in schools for traditional therapy, the language needs of students necessitate collaboration in the classroom (Farber & Klein, 1999). Given the current shortage of certified SLPs, it is essential that the role of the SLP in the public school setting is clearly articulated for successful collaboration to take place between SLPs and public school staff/administration (ASHA, 2002; Edgar & Rosa-Lugo, 2007). Offering a collaborative partnership between educators means that all teachers, SLPs and students involved get the opportunity to succeed. When doors are opened to the

classroom for all available resources, young minds get the opportunity reach their potential and truly learn.

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APPENDIX A

School District Letter Authorizing Research

Letter is on file and available upon request.

APPENDIX B

Institutional Review Board for the Protection of Human Subjects Approval Letter

Letter is on file and available upon request.