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The Impact of Online Professional Development on the Assessment Efficacy of Novice Itinerant Teachers of Students with Multiple Disabilities Including Visual Impairments

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by

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Abstract

The primary question for this dissertation was: Does online professional development increase novice itinerant Teachers of Students with Visual Impairments' (TVI) efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? The literature suggested novice TVIs might experience low efficacy when implementing strategies unique to their job after leaving teacher-training programs. Working in an itinerant position can intensify perceptions of low efficacy. One area of low efficacy was conducting and reporting on the assessment of learning and literacy media (ALLM).

Using a quasi-experimental pre/post-design, data were collected from pre/post-intervention knowledge questionnaires about the assessment process and pre/post-intervention written ALLM reports. Eleven participants with 1-5 years of experience as TVIs were divided into control and intervention groups. Four online modules were delivered to the intervention group. The data were analyzed using two dependent and two independent sample *t* tests. The results indicated the change scores between the control groups pre- and post-submissions did not improve. The change scores between the intervention groups pre- and post-submissions did significantly improve after participation in the online modules. The change scores overall between the intervention and control groups' pre/post submissions were statistically significant. The intervention group completed an acceptability rating scale regarding the feasibility of the modules and the results had an average score of 3.5 (4 = strongly agree). The primary limitation of this

study was the small sample size and, therefore, did not allow for generalization. Recommendations were: the development of specific skill based online professional development for TVIs and more opportunities for veteran TVI support for novice TVIs.

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CHAPTER 1

PROBLEM STATEMENT

Introduction

Students with visual impairments are considered a low incidence disability population. A low incidence disability is typically defined as a disability that occurs in 1% or less of a school's total population of students with disabilities. According to Lueck, Erin, Corn, and Sacks (2011), visual impairment commonly co-occurs with other disabilities and students with multiple disabilities including visual impairment represent more than 50% of the total number of students with visual impairments (Alper, 2000). Students with multiple disabilities including visual impairment have vision loss and present a range of concomitant characteristics including: limited verbal skills, behavioral issues, cognitive impairments, and physical disabilities. These students may also be medically fragile, have recurrent seizures, and require medications that can influence engagement and alertness throughout the educational day. The presence of multiple disabilities complicates assessment processes for teachers of students with visual impairments (TVI). These teachers must complete specialized assessments of their students with visual impairments including those students with multiple disabilities, and the assessments are considered best practices or many times required. One such assessment is determining the most appropriate learning and literacy media for students with multiple disabilities including visual impairments.

Families, classroom teachers, and specialists often make the assumption that literacy instruction may not be appropriate or successful for students with the complex educational needs such as those with this combination of multiple disabilities (Koppenhaver, Hendrix, & Williams, 2007; Wormsley, 2004. Novice TVIs may often overlook or feel unsure about conducting comprehensive assessments of learning and literacy media (ALLM) and the importance of providing appropriate, individually tailored literacy instruction for students with multiple disabilities including visual impairments. The complexity of multiple disabilities contributes to the limited number of ALLM's being completed. As a consequence, these students are at risk for being underserved, and miss opportunities to learn and participate (McKenzie, 2009). Research suggested that this comprehensive, accurate specialized assessment is necessary for students with multiple disabilities to receive the best access to appropriate educational materials and instructional strategies (Lueck et al., 2011). Conducting the assessment, determining the best learning and literacy media, and using that data for educational programming has been linked to increases in the independence levels and communication skills of students with this combination of multiple disabilities (Wormsley, 2004).

For novice itinerant TVIs, completing an appropriate ALLM and writing accurate and meaningful recommendations can be challenging and intimidating (Heller, D'Andrea, & Forney, 1998). In order to provide quality assessments, TVIs need to have strong interpretive and critical thinking skills and a strong sense of teacher efficacy, which is briefly defined as the sense of competence teachers' have toward their teaching practice (Fives & Buehl, 2010; Stewart, Allen, & Bai, 2011; Tschannen-Moran, & Hoy, 2001).

Pairing the complexity of conducting this specialized assessment with the limited experience of novice TVIs provided further evidence for professional development targeted on conducting the ALLM for students with multiple disabilities including visual impairments. This research study examined the impact of an online professional development intervention to improve novice itinerant TVIs' assessment efficacy when conducting a comprehensive ALLM for students with multiple disabilities including visual impairments. The professional development was provided online for the convenience of the novice TVI participants. The online professional development presented learning activities, introduced a variety of ALLM protocols, and included practice on interpreting assessment data. The desired outcome for the novice itinerant TVIs was to build more effective assessment skills, which included writing a useful report based on the assessment data with meaningful, appropriate recommendations. A meaningful, appropriate recommendation is one that aligns with the information gleaned from the assessment data.

Background

Historical Background for Appropriate Assessment of Students with Multiple Disabilities Including Visual Impairments

The Individuals with Disabilities Education Act (IDEA) in 1997 made it mandatory that all students with a disability have access to an appropriate education and the chance to participate in the general education curriculum and assessments (Baker, Spooner, Ahlgrim-Delzell, Flowers, & Browder, 2010). The No Child Left Behind Act of 2001 (NCLB, 2002) further emphasized reading and academic instruction for all students including those with multiple disabilities. Conducting assessments and student

observations generate and guide crucial information for writing appropriate goals for students' Individualized Education Plans (IEPs). For students meeting the definition of legal blindness (20/200) including those with additional disabilities, braille instruction is the legal default instructional and literacy medium unless an assessment asserts otherwise. The 2004 Individuals with Disabilities Education Improvement Act (IDEIA) has a subsection on assessments of learning media that states:

> In the case of a child who is blind or visually impaired, provide instruction in braille and the use of braille unless the IEP Team determines, after an evaluation of the child's reading and writing skills, needs, and appropriate reading and writing media (including an evaluation of the child's future needs for instruction in braille or the use of braille), that braille is not appropriate for the child. (Section 614 (3)(B)(iii))

An ALLM aids in the decision as to what the more appropriate learning media is for a given student. In essence, this assessment guides the IEP team's decision of the use of print, braille, assistive technology, or other forms of presenting and communicating educational information.

Concerns about the lack of instruction of braille. In addition to federal educational law, the emphasis on determining the most efficient learning medium originated in the historical debate between print and braille instruction for students with visual impairments (Castellano, 2013; Ianuzzi, 1996). Literature from consumer and advocacy groups for persons with visual impairments argued that a lack of braille instruction provided to school age students with visual impairments had contributed to the illiteracy and joblessness among adults with visual impairments (Hehir, 2002). The National Federation for the Blind advocated for braille instruction for all students with visual impairments including those with low vision regardless of these students' abilities

to effectively read and write using visual strategies, optical, and/or electronic devices (National Federation of the Blind Jernigan Institute, 2009). Ianuzzi (1996) claimed that TVIs seemed to prefer teaching print instead of braille because of beliefs that braille is too difficult to teach and learn. Ianuzzi also speculated that the preference of print over braille was perhaps from the inadequate preparation of TVIs. For students with multiple disabilities including visual impairments the determination of the most appropriate learning and literacy media expands into a much larger discussion, which includes determining the applicability of alternative methods of accessing educational experiences and goes beyond the determination of print vs. braille. One result of the discussion surrounding the most appropriate learning and literacy media for students with visual impairments was the development of more structured and specialized assessment tools (Caton, 1994).

Assessment efficacy and the novice itinerant TVI. While this study looked at one element of professional efficacy related to assessing student literacy needs, it was grounded in the broader literature of teacher efficacy. For the purpose of this research study, assessment efficacy was more specifically defined as the competence level that teachers hold about their capability to complete assessments and bring about positive growth with their students (Hoy & Spero, 2005; Ruble, Usher, & McGrew, 2011). The efficacy of novice teachers is profoundly influenced by their experiences during student teaching and the induction phase (Mulholland & Wallace, 2001; Tschannen-Moran, Woolfolk-Hoy, & Hoy, 1998). For many special education teachers, experiences that lead to mastery level teaching skills are gained from the interactions with available teacher

mentors, supervisors, colleagues in the same field of expertise, and professional development opportunities. However, unlike most teachers who have opportunities to share ideas in the staff lunchroom and engage in weekly professional meetings with colleagues in the same school, novice itinerant TVIs have minimal opportunities for relevant professional development and are often isolated from knowledgeable veteran teachers (Griffin-Shirley et al., 2004; Seitz, 1994). The *Oxford English Dictionary* (Duckett, 2006) has defined a veteran as "a person who has had long experience in a particular field" (p. 853). For the purposes of this study a veteran teacher is defined as a teacher or TVI with at least 8 years of experience (Edwards, 2003; Teitelbaum, 2008). As a low incidence disability category, many times the only opportunities for many novice itinerant TVIs to access colleagues or veteran TVIs may be through long distance communication, a professional listserv, or attendance at a yearly discipline-specific conference.

Some novice teachers leave the university feeling the need to demonstrate overall mastery of the strategies and knowledge gained through the teacher training experience. Pogrund and Cowan (2013) found a connection between the overwhelming challenges faced by novice TVIs' limited access to professional development and these teachers' low sense teacher efficacy. A common new teacher position for a novice TVI is an itinerant position. Itinerant teaching, a service delivery model that requires teachers to travel to the students rather than working in a single classroom, is a frequently used mode of service delivery (Correa-Torres & Johnson Howell, 2004). The novice TVI is often the only professional providing vision services in an area, and looked upon as the only

"vision expert" for a school district, town, or county (Bowen & Ferrell, 2005; Correa-Torres & Johnson Howell, 2004; Pogrund & Cowan, 2013). This role of "expert" can be intimidating and overwhelming for the novice itinerant TVI and negatively impact their sense of teacher efficacy.

The assessment and programming for students with multiple disabilities including visual impairment are further complicated when a novice TVI works in the more isolating itinerant position. Isolation may further limit the development of novice itinerant TVIs' efficacy. These novice teachers' itinerant caseloads may include students that range in ages from newborn to young adult and who live across a large geographic area. Managing such a vastly different caseload of students may be intimidating for even seasoned veteran TVIs. Teaching in an itinerant model requires collaboration and coordination between a caseload of students, teachers, and related service professionals (e.g., physical, occupational, speech and language therapists)—all while traveling between multiple settings and distances.

ALLM for students with multiple disabilities including visual impairments. Conducting this specialized assessment for all students on a TVI's caseload is a required and significant part of the teacher's job. However, assessing students with multiple disabilities including visual impairments requires skills different from those used for assessing students with visual impairments alone. The combined interaction of disabilities for students makes conducting this specialized assessment more complex (Bruce, Luckner, & Ferrell, 2018; Heller et al., 1998). One example is that additional disabilities can be physical, which impacts a student's ability to access the academic

environment. For students with head, neck, and trunk control difficulties maintaining body balance takes a great amount of energy leaving less energy for visual learning and attending to educational tasks. Disabilities may also be cognitive, which impacts a student's ability to process and build on skills.

For students with multiple disabilities the more disabilities involved the narrower the range of available media useful for presenting educational activities (McCall & McLinden, 2001). Browder, Lee, and Mims (2011) endorsed the reasons students with additional disabilities encounter poor literacy interventions: limited research on how to teach literacy to this population, lack of targeted professional development, and teachers' difficulty preparing appropriate assessments and interpreting students' responses. When conducting this assessment, a TVI may need to choose and use alternative methods to what may be the typical activities. For example, the itinerant teacher may be interpreting the direction of an eye gaze as an answer to a question or conducting multiple observations to determine which is most useful for presenting educational material (i.e., print, picture, auditory, or tactile). In addition to the difficulties cited by Browder et al. is the challenge of reciprocal communication between teachers and students. Reciprocal communication is the two-way communication between people. Reciprocal communication issues contribute to the complexity of creating appropriate interventions and interpreting students' responses. For this reason, communication is often linked to the discussion of learning and literacy media.

The ability to communicate with others is essential to being able to participate in the world and literacy is crucial to interacting with others. Assessing the most appropriate

learning and literacy media is critical to determining the varied methods or technologies that may improve communication and increase students' functioning and independence (Browder, Wood, Thompson, & Ribuffo, 2014; Parker & Pogrund, 2009; Trief, Cascella, & Bruce, 2013). The goal of literacy instruction for students with multiple disabilities is to enhance communication and increase their participation in the world around them, therefore, enhancing quality of life (Erickson, 2017; Ruppar, Dymond, & Gaffney, 2011). McKenzie (2007) quoted Langley "literacy is communication, especially when the concepts and issues are applied to students with visual impairments and additional disabilities. In this respect, then, literacy is the most basic foundation for all learning" (p. 597).

Although, literacy instruction is traditionally associated with reading and writing, the definition of literacy and learning media for this research study was expanded and included a variety of expressive and receptive strategies. For example, Browder, Gibbs, Ahlgrim-Delzell, Courtade, Mraz, and Flowers as cited in Zebehazy (2015) defined literacy as "a conceptual model of literacy for students . . . that focuses on increasing independence as a reader and improving quality of life through shared literature" (p. 260). Durando's (2008) article defined literacy broadly as "the ability to use words" (p. 40), implying that students with a broad range of mental and physical abilities can and should be considered for literacy instruction. Expanding the definition of literacy to include a broad range of expressive and receptive activities not only provides equity for students with multiple disabilities but also allows educators to see them as actively interpreting their world. Viewing the development of literacy in this way includes

students with all abilities and validates their status as literate people. For this research study, the focus was on the assessment of the most appropriate media for students with multiple disabilities including visual impairments at the emergent or beginning stages of learning and literacy. Students at the emergent or beginning stages of learning and literacy (as defined in Definitions of Key Concepts) are showing behaviors that demonstrate interest in or an understanding of the concepts of literacy (Erickson, 2017).

Providing students with the most appropriate learning and literacy media, whatever that may look like, gives them a way to communicate with the world around them and demonstrate comprehension and the acquisition of knowledge. For a student with multiple disabilities including visual impairments, a literate response when shown a picture and asked a question about health, feelings, activity, or hunger could be demonstrated by pointing, nodding, or blinking. Another example of these students' participation in learning and literacy tasks would be having them demonstrate an understanding of math concepts by touching a card with the correct answer to an equation question; or watching for a consistent smile for "yes" or a frown for "no" on the student's face when asked yes/no questions.

Statement of the Research Problem

The goal of the research was to measure the effectiveness of an online targeted four module intervention focused on completing an ALLM for students with multiple disabilities including visual impairment and the impact on the quality of ALLMs and the reporting of results. With that data, the researcher examined whether or not the online targeted professional development had a positive effect on the assessment efficacy of

these novice itinerant TVIs. While this research did not propose to look at every factor that related to teacher efficacy, it did take into account the effect of online targeted use and reports of the specialized assessment.

For the purposes of this dissertation, TVIs were defined as teachers who have successfully completed a professional preparation program in the theory, strategies, curriculum, and technology specific to students with visual impairments and blindness. Appropriate participants were first through third year novice itinerant TVIs with no prior teaching experience. The primary research question for this study was: Does online professional development increase novice itinerant TVIs' efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? The secondary research questions were: (a) Does online professional development increase novice itinerant TVIs' knowledge of best practices for conducting an ALLM for students with multiple disabilities including visual impairments, (b) Does online professional development improve the quality of the assessment for learning and literacy reports written by novice itinerant TVIs, and (c) Does participation in an online targeted professional development result in participants' positive perceptions of the value of the intervention to self and to other TVIs?

Educational Significance of the Research Problem

Novice itinerant TVIs face challenges of isolation and complex responsibilities, all with limited access to veteran TVIs and limited opportunities for professional development. It can be intimidating for novice itinerant TVIs to assume responsibility for assessing students, representing students' learning strategies through the IEP, and making

data-driven critical decisions regarding students' best learning and literacy media. Griffin-Shirley et al. (2004) provided a succinct argument for this research study by saying, "Although universities have the initial responsibility for delivering a basic level of knowledge and skill, practicing teachers need opportunities for professional development that allow continued growth as a specialist in visual impairment" (p. 17). When the specialized responsibilities of an itinerant TVI are coupled with the increased challenges of assessing students with visual impairments and multiple disabilities, novice itinerant TVIs can experience limited confidence. The reasons stated above exposed a need to investigate the impact of online targeted professional development on the novice teachers' ability to conduct accurate assessments and on their sense of assessment efficacy. This study responded to the call for professional development for novice TVIs by creating modules that delivered online targeted professional development with the intent of probing the relationship between professional development and efficacy.

Overview of Research Methodology

According to IDEA of 1997, the 2004 IDEIA, and the "free and appropriate public education" section, school districts must provide instruction using scientifically-based research methods (Yell, Shriner, & Katsiyannis, 2006). This study used a pre- and post-test design to determine whether an intervention presented as targeted professional development on the ALLM to novice itinerant TVIs would increase their assessment efficacy. The intervention was an extension of previously learned information and focused on the specific needs of students with multiple disabilities including visual impairments, and provided hands-on practice delivered by a veteran TVI. The data

collection procedures included pre- and post-knowledge questionnaires, pre- and post-intervention ALLM reports, and an acceptability rating scale. The methodology for the research study is discussed in greater detail in Chapter 3.

Summary

The researcher's working assumption was that novice itinerant TVIs needed opportunities for professional development that were specific to their students and the field of visual impairment. The literature indicated that factors negatively impacting novice TVIs included: limited opportunities for teacher training, the increase of students identified with disabilities, and the limited accessibility of veteran TVIs. The need to develop strategies that provide relevant support to novice TVIs is crucial to increase novice itinerant TVIs' assessment efficacy and promote professional growth, specifically related to administering the ALLM to students with visual and other disabilities. Providing additional training for novice itinerant TVIs is important if students are going to receive accurate assessments that increase opportunities to access the educational curriculum. By demonstrating that online targeted professional development positively impacted the novice itinerant TVIs' practice and efficacy, a case may be made for more access to discipline specific professional development. Results from the research study provided relevant information for professional preparation programs, leaders in the field of education of students with visual impairments, mentors of novice TVIs, and novice itinerant TVIs.

Definitions of Key Concepts

ALLM (Assessment of Learning and Literacy Media): A systematic method of collecting information about a student's learning environment and most efficient instructional materials and methods (Koenig & Holbrook, 1995)

Beginning and Emerging Literacy: Beginning literacy is defined as students who are demonstrating an understanding of concepts of literacy such as: associating pictures with experiences, listening to stories, understanding that letters, words, understanding routines, identifying objects, and that speech have meaning. Emergent literacy is defined as students who are demonstrating reading and writing behaviors that precede typical reading and writing instruction (Erickson, 2017).

Deaf-blind: Refers to children with varying degrees of vision and hearing losses. The combination of losses limits auditory and visual access to information, creating challenges for education and communication (Miles, 2005).

Itinerant service delivery model: Correa-Torres and Johnson Howell (2004) provide this comprehensive definition of itinerant teaching, "a professional who travels from school to school, providing individual instruction and special materials to students and offering consultation services to regular classroom teachers and other school personnel" (p. 258).

Learning media: This concept includes more than just print, braille, or print and braille combined, and encompasses the use of auditory and other tactual media such as pictures, objects, and technology.

Literacy media: The media options used to provide educational information to students includes print, braille, or print and braille combined, and encompasses pictures, object symbols, auditory and other electronic media.

Low-incidence disabilities: Is a disability that occurs in .5 or 1% of the school's population of the all students with a disability.

Primary sensory channel: The sensory channel—tactile, visual, auditory, gustatory, olfactory, vestibular, and proprioceptive—most frequently used by the student to gain information and to participate in activities.

Sensory channels form: An assessment tool used to determine students with visual impairments including those with additional disabilities preferred sensory channel or channels (visual, tactual, auditory) for obtaining environmental or instruction information.

Targeted professional development: Professional development for a specific population of teachers focused on topics that are unique to that population's field of expertise.

Teacher efficacy: The beliefs, behaviors, and judgments that teachers hold about their capability to bring about the desired instructional outcomes for students (Ruble et al., 2011).

TVI (Teacher of Students with Visual Impairments): A teacher who has completed the coursework required to be certified as a Teacher of Students with Visual Impairments.

Veteran teacher: A teacher who has had long experience in a particular field (Duckett, 2006, p. 853). A veteran teacher has also been reported as a teacher with 8 or more, 10 or more, 25, or 35 years of experience.

CHAPTER 2

LITERATURE REVIEW

Introduction

The literature for this research study collectively suggested that addressing the concerns and challenging realities faced by novice teachers early in their career may increase teacher efficacy (Billingsley, Carlson, & Klein, 2004; Griffin-Shirley et al., 2004; Veenman, 1984; Whitaker, 2001). This research study sought to determine if the teacher efficacy of novice itinerant TVIs was positively impacted by targeted professional development presented online. To that end, the researcher conducted four online learning modules presented to the designated intervention group. Next, using a pre/post-test design on the material in the learning modules, the change in teacher efficacy was examined. The topic for the online professional development was information and strategies for completing an ALLM for students with multiple disabilities including visual impairment. Ross and Bruce (2007) whose study looked at "the potential of professional development as a stimulus for enhancing teacher beliefs about their ability to bring about student learning" (p. 50) further supported the use of the professional development model in this study.

The next section provides the theoretical framework of this research study followed by sections that focused on five key areas. These areas included: (a) efficacy, (b) the unique challenges of novice itinerant teachers, (c) the need for and impact of targeted professional development, (d) the ALLM for students with multiple disabilities

including visual impairments, and (e) the implementation of a quasi-experimental design. Sources consulted in the literature review included Education Resources Information Center, Education Research Complete, Academic Search Premier, and journals specific to low incidence disabilities (i.e., deaf and hard of hearing, early childhood special education, and visual impairments). The next section specifies a theoretical framework, which provided the perspective guiding the creation of the professional development, the intervention materials, and provided a lens from which to move forward into the methodology in Chapter 3.

Theoretical Framework

Thomas F. Gilbert's Theory of Human Performance (Cicerone, Sassaman, & Swinney, 2005; Gilbert, 1978; Sommers, 2003), which focused on the outcome of behaviors, was appropriate to the research question and sub-questions focus on examining the relationship between additional training through professional development, teacher efficacy, and the quality of ALLM reports. Gilbert's theory "focused strongly on the outcomes or consequences of behavior rather than on the behavior itself" (Mager, 1978, p. 19). Gilbert's Theory of Human Performance is based on the analysis of deficiencies of knowledge and execution that impact job performance (Cicerone et al., 2005). Following the identification of the deficiencies specific training is designed and provided to remediate and improve job performance. Gilbert's theory was the guiding framework for this research study.

The professional development intervention developed for this study focused on the specific ALLM conducted by TVIs and one that is critical to providing the most

appropriate educational experiences for students with multiple disabilities including visual impairments. Following the tenets of Gilbert's theory, the study participants submitted pre-intervention ALLM reports and after the professional development, the participants completed post-intervention ALLM reports (Cicerone et al., 2005). Conducting the ALLM is a professional responsibility of every TVI. Silberman and Sacks (2007) in their position paper to the Division of Visual Impairments, Council of Exceptional Children stated,

> Assessment and evaluation and educational and instructional strategies are the primary responsibility of professionals in the field of education of students with visual impairments, especially teachers, to assess and enhance the functional vision skills in all students with multiple disabilities regardless of the severity or multiplicity of impairments. (p. 2)

Specifically noted in Silberman and Sacks position paper was a list of skills that TVIs needed to demonstrate competence in and they are summed of as, "the ability to conduct and interpret functional vision assessments and learning media assessments for students with visual and multiple disabilities" (p. 2).

The ALLM is taught in personnel preparation programs for TVIs but opportunities to practice the assessment are few. For the purposes of the study, the deficiency of knowledge (Gilbert's theory of human performance) was due to the lack of experience and authentic practice of the ALLM and the deficiency of execution (Gilbert's theory of human performance) was the quality of the ALLM written report (Cicerone et al., 2005). The deficiencies and the remediation of these deficiencies were determined through the pre- and post-intervention knowledge questionnaire and pre- and post-ALLM reports. This research study employed Gilbert's five steps for determining the focus of the intervention and designing and scaffolding the information in the intervention

modules (Cicerone et al., 2005). Gilbert's theory can be summarized as five steps to progressive learning:

1. Why the skill has to be learned,
2. Teach prerequisites,
3. Teach what is needed to perform the skill,
4. Teach the skills to mastery,
5. Provide practice and application of the learned skill (Mager, 1978).

The information for the online modules was scaffolded in incremental steps starting with a general review of the ALLM process and then progressed to the more complex intricacies of conducting the ALLM for students with multiple disabilities including visual impairments. The online modules built on novice itinerant TVIs' prior knowledge through guided practice with video clips of students with multiple disabilities including visual impairment and served as the targeted training to remediate deficiencies as discussed in Gilbert's theory of human performance (Cicerone et al., 2005). Evaluation and comparison of the scores from the pre- and post-intervention knowledge questionnaires and pre- and post-intervention ALLM written reports were used to determine changes in instructional and participant efficacy (Thurlings, Vermeulen, Bastiaens, & Stijnen, 2013). The scores demonstrated how well the participants processed the learned information and applied their critical analysis skills.

Gilbert's Theory of Human Performance is grounded in post-positivism (Cicerone et al., 2005; Gilbert, 1978). The quasi-experimental design was used in this study and is commonly used by post-positivist researchers because it centers on finding a causal

relationship while attempting to control the effects of any extraneous variables as much as possible (Mertens, 2010; Ravitch & Riggan, 2012). This researcher initially looked at the appropriateness of the behaviorist and cognitivist theoretical frameworks (Thurlings et al., 2013; van Merrienboer & de Bruin, 2014). However, Gilbert's Theory of Human Performance had a more overarching focus on the performance improvement outcomes once a topic of need is determined and training on the topic of need is completed.

Review of the Research

Significance of Teacher Efficacy

The term teacher efficacy is defined as the beliefs, behaviors, and competence level that teachers hold about their capability to bring about the desired instructional outcomes for students (Hoy & Spero, 2005; Ruble et al., 2011; Tschannen-Moran & Hoy, 2001; Tschannen-Moran et al., 1998). An example of the impact of low teacher efficacy is when teachers believe students can learn but do not think they, as teachers, have the capability to teach the skills to students (Allinder, 1994). Novice itinerant TVIs' sense of competence and confidence may be negatively influenced when they face the reality and challenges of identifying and practicing strategies to meet the needs of individual students with multiple disabilities including visual impairments (Dignan, 2015). The negative influence may be a stronger factor when novice TVIs are working with the students with multiple disabilities population with very disparate learning needs and in an environment where minimal support is available.

Efficacy research focusing on education and, specifically, teacher efficacy found that efficacy beliefs are related to teachers' actions and the outcomes achieved

(Tschannen-Moran et al., 1998). The literature on teacher efficacy strongly agreed with a connection between the amount of professional development and the support available for novice teachers, and these teachers' degree of teacher efficacy (Beach, 2017; Billingsley, Griffin, Smith, Kamman, & Israel, 2009; Dignan, 2015; Seitz, 1994; Skaalvik & Skaalvik, 2011; T. M. Smith & Ingersoll, 2004; White & Mason, 2006). Fantilli and McDougall (2009) argued the point: "there is a need for research on the effects of mentoring and induction programs on new teachers' experience . . . . there is a need to know the effect of these programs on new teachers' sense of efficacy" (p. 815). A study by LoCasale-Crouch, Davis, Weins, and Pianta (2012) examined the effect of an induction program that "involved a consultative process with a mentor that provided regular feedback to novice teachers" (p. 304). LoCasale-Crouch et al. found that the impact of providing support during the novice years corresponded with positive outcomes for novice teachers. The above literature referenced influenced the researcher's decision to conduct this specific research and target novice itinerant TVIs (Billingsley et al., 2009; Dignan, 2015; Fantilli & McDougall, 2009; LoCasale-Crouch et al., 2012; Seitz, 1994; Skaalvik & Skaalvik, 2011; T. M. Smith & Ingersoll, 2004; White & Mason, 2006).

In 2012, Hartmann conducted a study focused on the low-incidence field of deaf-blindness that found a connection between teachers' feelings of self-efficacy and their effectiveness as teachers of students with deaf-blindness. Hartmann's study used the Teacher Efficacy in Deaf-blindness Scale with 87 teachers of students with deaf-blindness. The purpose of the study was to "define a construct of teacher self-efficacy to

support students with deaf-blindness, create an instrument that was specifically designed to measure this construct, and test its psychometric properties" (p. 730). This study was conducted in the field of deaf-blindness, but the researcher hypothesized there would be similar findings if applied to novice itinerant TVIs. This study operated on the similar premise by hypothesizing that increasing teacher skill level would result in increased sense of efficacy. This strand of literature influenced the researcher's decision to conduct research on the effect of professional development on the assessment efficacy of novice itinerant TVIs.

Two additional studies examined issues related to a specific skill level of TVIs. While both of these studies focused on the absence of specific skills and offered strategies to remediate them, they did not specifically examine the overarching issue of assessment efficacy related to students with multiple disabilities including visual impairments. The first of these two studies conducted a survey with 165 TVIs in Texas asking for "their perceptions of their knowledge of assistive technology" (Zhou, Parker, Smith, & Griffin-Shirley, 2011, p. 197). Zhou et al. (2011) sought to determine where TVIs had gaps in their knowledge about assistive technology and then proposed the next step, which was to promote professional development to close the identified gaps. Findings from the survey indicated that out of 165 TVIs, 57.5% lacked efficacy in teaching assistive technology and felt their level of knowledge was significantly lower than what they thought it should be. These results suggested that such deficits in efficacy are widespread across the field.

The second study conducted by Rosenblum and Amato (2004) involved online surveys with 262 TVIs to investigate teacher-perceived efficacy in using the Nemeth code (a specific braille code used in mathematics and science) for mathematics instruction with students who have visual impairments. The results were similar to the previously discussed study by Zhou et al. (2011) in which TVIs expressed a lack of confidence and efficacy with a unique skill area pertinent to their students. In Rosenblum and Amato, TVIs expressed limited confidence in using the Nemeth math code with their students with visual impairment and desired more training to gain a higher level of confidence and competence. Both of these studies utilized surveys and the results indicated a lower perceived efficacy from TVIs on the topics of assistive technology and using the Nemeth math code. Both of the above studies examined efficacy based on teachers' perceptions. While neither of these studies were conducted specifically with novice itinerant TVIs and both studies suggested more professional development was needed they did not introduce an intervention. This research study examined efficacy through the online professional development utilizing an intervention with pre- and post-intervention assessments as evidence of change. The research reviewed here suggested that opportunities to practice teaching skills through professional development, such as the curriculum in this research study, are critical during the novice teaching years and may increase novice teachers' efficacy.

Unique Challenges Facing Novice Itinerant TVIs

Shortage of trained TVIs. Teacher shortages have been documented in all areas of special education across the United States. While it was not the intent of this research

study to go into depth on issues related to shortages of TVIs, a brief discussion of overall special education teacher shortages provided context for the need to nurture novice TVIs during the early years of teaching. During the past 15 years, special education teacher shortages were predicted to worsen due to the increase of students identified with disabilities and the retirement of veteran special education teachers (Connelly & Graham, 2009; Ludlow, Conner, & Schechter, 2005). Summer, Leigh, and Arnold (2006) included the field of visual impairments as a specific discipline within special education with a critical shortage of teachers.

Two trends emerged from the literature, as contributors to the predicted shortage of special education teachers and TVIs (Ludlow et al., 2005; Summer et al., 2006). These trends were (a) teacher training institutions prepared .86 teachers for every open special education teaching position as compared to two teachers for every open general education teaching position (Ludlow et al., 2005), and (b) personnel preparation programs for TVIs in the United States have decreased from 42 in 1987 to the current number of 28. It is not a far stretch to speculate that a critical nationwide shortage of TVIs diminishes the ability to provide students with multiple disabilities including visual impairments appropriate and individualized education services and affects the quality of instruction (Summer et al., 2006). Of the literature reviewed (Berry, Petrin, Gravelle, & Farmer, 2011; Billingsley et al., 2009; Carlson, Brauen, Klein, Schroll, & Willig, 2002; Piwowar, Thiel, & Ophardt, 2013; Sindelar, Brownell, & Billingsley, 2010) many reinforced the idea that providing support and targeted professional development may benefit and help sustain

novice special education teachers as they leave personnel preparation programs and enter the special education teaching field.

Itinerant teaching. An itinerant TVI travels to students' schools and provides specialized instruction, resources, and classroom, teacher, and family support. For novice TVIs, the first itinerant teaching assignment may be overwhelming because they may end up being the only professional trained in the field of visual impairments in a large geographic area. The role of itinerant TVIs is unique and complex. Itinerant TVIs need an extensive knowledge base and range of teaching abilities because a typical caseload may include students with visual impairments including those with multiple disabilities from birth through young adulthood (Kluwin, Morris, & Clifford, 2004; Pogrund & Wibbenmeyer, 2008; Seitz, 1994; Swenson, 1995; Williams & Warren, 2007; Williams, Martin, & Hess, 2010). Pogrund and Wibbenmeyer (2008) described the significance of the TVI's role as follows:

> TVIs have highly specialized expertise and are often the only professionals in their local education agencies who are knowledgeable about the impact of vision loss on learning. Administrators, classroom teachers, family members, evaluation personnel, and other related service professionals rely on these teachers to understand visual impairment and to make necessary modifications for particular students. (p. 9)

Seitz (1994) gave examples of the challenges faced by itinerant TVIs, asserting that, "travel schedules prevent them from "'putting down roots,' 'having any real home base,' and not 'developing meaningful relationships with colleagues, administrators, and members of the community'" (p. 302). While many general and special education teachers can address the feelings of isolation, and the need for collaboration though traditional structures of school communities and mentors (Beach, 2017; Berry et al.,

2011; Billingsley et al., 2004; Moir, 1999), novice itinerant TVIs are often without these support (Carlson et al., 2002).

Limited access to veteran TVIs. There exists a standard premise in the field of education that the opportunity to engage with veteran teachers strengthens novice teachers' skills and sense of efficacy. Therefore, it follows that access to veteran TVIs increases the opportunities to discuss the assessment needs of students with multiple disabilities including visual impairments, to ask questions, and to observe experienced professionals. However, access to veteran TVIs is difficult because of limited numbers and availability. Veteran TVIs often have their own caseload to manage and have limited time to offer beneficial support to the novice TVI. Along with traveling and working in multiple settings, novice itinerant TVIs have difficulty accessing targeted professional development (Williams et al., 2010). Providing flexible opportunities to access veteran TVIs and reinforce skills pertinent to the work of TVIs through online professional development may be one way to provide an anchor of support for novice itinerant TVIs.

The Theory to Practice Gap

In this low incidence field of educating students with visual impairments, applying theory to practice may be slow and frustrating for novice itinerant TVIs as they may be expected to perform as veteran teachers in their first teaching assignment with minimal veteran teacher support (Mercer, Koenig, & Holbrook, 1996). Mercer et al. (1996) held the opinion that "the minimum requirements for teacher certification should be weighted heavily in the direction of practical, as opposed to theoretical instruction" (p. 460). Berry et al. (2011) and Piwowar et al. (2013) expressed the idea that the fusion of

theory, content knowledge, and practical knowledge may be accomplished through appropriate professional development. Scheeler (2007) asserted that the skills taught in the university setting may not be maintained over time or generalized to real world settings, and that "teachers cannot generalize skills they have not adequately learned" (p. 146). An article by Rostan (2009) suggested that participation in professional development offered novice teachers opportunities to practice teaching skills and to apply the theoretical knowledge learned during the teacher preparation programs, thus helping bridge the theory-to-practice gap. Billingsley et al. (2009) conducted a significant review of special education induction literature, in this review a new special education teacher articulated a powerful affirmation of the need for professional development saying, "I felt like I had learned most of the stuff in college, but all of it didn't quite stick. It was stuff that I knew I had learned, but I didn't remember or know exactly how to apply it in my particular situation" (p. 7). Griffin-Shirley et al. (2004) reinforced the need for professional development for TVIs in order to bridge this gap from theory to practice by stating, "Although universities have the initial responsibility for delivering a basic level of knowledge and skill, practicing teachers [TVIs] need opportunities for professional development that allow continued growth as a specialist in visual impairment" (p. 17). Building on the need for professional development articulated in the literature, this research study employed online professional development as one way to bridge the theory-to-practice gap during the novice teaching years (Gunter & Reeves, 2017).

Online Professional Development

There were an increased number of studies related to online professional development for teachers in the past decade (Billingsley et al., 2009; Trust, 2016). This current study used strategies from the most recent research on effective online delivery of professional development (Beach, 2017; Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009; Kudenko, Ratcliffe, Redmore, & Aldridge, 2011; Vrasidas & Zembylas, 2004; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Online delivery provided access for novice itinerant TVIs in more isolated areas and was therefore, the best method to meet the needs and varied locations of the participants in this study (Beach, 2017; Berry et al., 2011; Desimone, Porter, Garet, Yoon, & Birman, 2002; Fishman et al., 2013; Redmond, 2015; Vrasidas & Zembylas, 2004). With no travel time or costs involved, the online professional development was affordable and accessible at any time of the day. This study used the online method for delivering the demographic survey, pre/post-intervention knowledge questionnaire, the intervention modules, and the acceptability rating scale (see Appendix H).

Targeted professional development was defined in this study as a professional development series focused on a topic that was unique to a teaching discipline (i.e., visual impairments, multiple disabilities) and was presented to a specific group of teachers. School- or district-sponsored professional development activities are often too general to be applicable to the unique challenges and skill development of the novice itinerant TVI's job. This study began with the assumption that novice TVIs would benefit from online professional development that addressed particular job skills. Gunter and Reeves

(2017) report stated “effective teacher professional development occurs when the topic is authentic, integrated, subject-specific, and consistent” (p. 1307). Reinforcing this assumption was the literature that supported professional development specific to novice special education teachers’ specialty area as being the most useful during the beginning years (Beach, 2017; Billingsley et al., 2009; Carlson et al., 2002; Sindelar et al., 2010). Billingsley et al. (2009) emphasized the need for targeted professional development and stated: “these experiences (i.e., content specific to their field of teaching) were perceived as more helpful than generic efforts aimed at professional development of all beginning teachers” (p. 28). The special education teachers in a study by Berry et al. (2011) claimed: “their participation in relevant professional development resulted in reduced levels of stress, increased levels of competency and teacher effectiveness” (p. 4). In Chametzky (2014) it was reported that “engagement in professional development increases when the material is relevant and personally meaningful” (p. 817). It followed, then, that targeted (specific to the field of visual impairments) professional development would be most useful for TVIs as opposed to more general professional development discussions presented to special education teachers as a whole.

The Assessment for Learning and Literacy for Students with Multiple Disabilities Including Visual Impairments

Background. The decision to use an ALLM as the focus for the online professional development was based on the requirements of IDEA of 1997, the debate between braille and print, and the training needs of novice itinerant TVIs when assessing students with multiple disabilities. In 1997, IDEA mandated that all students with a disability have access to an appropriate education and the opportunity to participate in the

general education curriculum and assessments (Baker et al., 2010). The NCLB further emphasized reading and academic instruction for all students including those with multiple disabilities. The 2004 IDEIA included a subsection on ALLM that stated:

> In the case of a child who is blind or visually impaired, provide instruction in braille and the use of braille unless the IEP Team determines, after an evaluation of the child's reading and writing skills, needs, and appropriate reading and writing media (including an evaluation of the child's future needs for instruction in braille or the use of braille), that braille is not appropriate for the child. (Section 614 (3)(B)(iii))

This subsection meant that for students with visual impairments (and qualified as legally blind), including those with additional disabilities, braille instruction was the legal default instructional and literacy medium unless an assessment conducted by a certified TVI argued otherwise. The ALLM assists in identifying the most appropriate learning media and provides documentation for the IEP team's decision to use of print, braille, assistive technology, or other learning or literacy media when presenting and communicating educational information.

In addition to the federal special education regulations IDEA, IDEIA, and NCLB, there was a longstanding debate between the advocates for instruction in print vs. braille. One area of contention is how the appropriate instructional mode is selected (Castellano, 2013; Ianuzzi, 1996). Literature from consumer and advocacy groups of persons with visual impairments and blindness suggested that the lack of braille instruction provided to students with visual impairments had contributed to illiteracy and joblessness once these students are adults (Hehir, 2002). The American Community Survey from Cornell University (2012) Employment and Disability Institute reported that among adults with significant vision loss, only 37.7% were employed. The impact of appropriate learning

and literacy media during the educational years, even emergent literacy, may provide skills relevant to the access to employment for students with multiple disabilities including visual impairments.

Another prominent argument was that TVIs advocated the teaching of print instead of braille because of TVIs' beliefs that braille was too difficult to teach and too difficult for students to learn (Ianuzzi, 1996). Additionally, Ianuzzi (1996) speculated that the reluctance to teach braille was a result of the inadequate preparation of TVIs. The debate generated the discussion and consequently, the development of structured and organized protocols focused on the assessment of instructional media needs for students with visual impairments (Caton, 1994). In the mid-1990s, structured protocols emerged in which checklists, forms and tools were developed to aid in the systematic assessment of the learning and literacy media needs for students with visual impairments including those with multiple disabilities. Parts of these structured protocols are still useful for TVIs today and were used in the construction of the online teaching modules for this study.

Two position papers addressed the role of TVIs for students with visual impairments. The first position paper from the Association for Education and Rehabilitation of the Blind and Visually Impaired provided structured guidelines such as (a) the development of literacy skills may involve a variety of strategies; and (b) collaboration among all educators including the TVI was critical to ensure the accommodations for students are implemented consistently (Lusk, Lawson, & McCarthy, 2013). The paper provided pertinent information regarding the need for conducting the

ALLM to aid in delivering data-driven appropriate literacy instruction. While the Association for Education and Rehabilitation of the Blind and Visually Impaired position paper is a valuable guidance document it focuses only on students with visual impairments and does not address students with multiple disabilities including visual impairments.

The second position paper from the Division on Visual Impairments Council of Exceptional Children definitively addressed TVIs' competencies and responsibility regarding assessment, evaluation, and educational and instructional strategies (Silberman & Sacks, 2007). The authors stated,

> Assessment, Evaluation, and Educational and Instructional Strategies, is the primary responsibility of the professionals in the field of education of students with visual impairments, especially teachers, to assess and enhance functional vision skills in all students with multiple disabilities regardless of the severity or multiplicity of impairments. (p. 2)

The position paper of the Division on Visual Impairments emphasized the responsibility of TVIs to assess all students with visual impairments including those with multiple disabilities. This paper specifically reinforced the role of the TVI in the ALLM that is necessary and required to determine and provide the most appropriate access to the educational environment.

The significance of an ALLM for students with multiple disabilities including visual impairments. Students with multiple disabilities including visual impairments are at risk for not being considered appropriate for literacy instruction. As noted in Chapter 1 families, educators, and administrators often have low expectations regarding literacy for these students. Despite being important for assisting TVIs in making more structured and data-driven decisions on learning and literacy media, TVIs' use of an ALLM for students

with multiple disabilities including visual impairments has been infrequent and often a low priority (Baker et al., 2010; Holbrook, 2009; Koenig, 1990; McKenzie, 2007). Wormsley (2004) wrote, "teachers of learners with severe to profound cognitive impairments often have low expectations for their students' acquisition of literacy skills" (p. 78). Even after the development and dissemination of structured ALLM protocols, many TVIs continued substituting their professional judgment and educational experience instead of using the assessment generated data to make the decision of the best learning and literacy media (Holbrook, 2009).

A survey of 30 TVIs working with students with deaf-blindness demonstrated a surprisingly low percentage—only 23%—conducted ALLMs with their students (McKenzie 2007). McKenzie's (2009) subsequent study revealed that only 13.8% of students with deaf-blindness had an ALLM in their cumulative educational file. Durando's (2008) examination of 82 TVIs found that less than one half of the 82 teachers believed literacy instruction was applicable to all students with visual impairments. Often administrators and staff look for the student to demonstrate signs or indications of "readiness" before literacy instruction is considered a possibility (Parker & Pogrund, 2009). The term "emergent literacy" was used in this study, not to indicate a student's readiness, but to indicate the need to examine learning and literacy strategies from the point of view of providing the most appropriate access to information for all students. This point of view put the emphasis on instructional strategies that provided the best learning environment for students with multiple disabilities including visual impairments

as opposed to waiting for these students to demonstrate any prerequisite skills (Parker & Pogrund, 2009).

McCall and McLinden (2001) stated, “Introducing literacy to any child with severe and complex disabilities requires teachers to identify the most appropriate medium for instruction” (p. 356). Conducting an accurate ALLM and using structured protocols provides critical data necessary for making the data-driven decisions that support appropriate access to education for students with multiple disabilities including visual impairments. However, the interaction of multiple disabilities and visual impairments increases the complexity of the assessment process. The complexity of multiple disabilities requires novice TVIs to have additional knowledge of how to conduct a meaningful assessment and what specialized strategies should be used to gather the most relevant information. The ALLM for students with multiple disabilities including visual impairments involves examining students’ behavior, alertness, and preferred sensory systems. Students with multiple disabilities including visual impairments may demonstrate unique responses to indicate needs, wants, and messages. It is special educators’ responsibility to “develop the assessment expertise needed to be aware of those messages and how to use them to build better learning environments for the child” (Blaha, Schafer, Smith, & Moss, 1996, Conclusion, para. 1). Assessing the learning and literacy media needs and developing appropriate strategies for students with multiple disabilities including visual impairments provides valuable information useful in all aspects of a student’s life including: social, communication, identification, emotions, and access to learning materials (Miles, 2005).

Synthesis and Critique of the Literature

Many scholars in education agreed that professional development is an effective means of enhancing novice teachers' content knowledge and developing improved teaching practices (Borko, 2004; Desimone et al., 2002; Kudenko et al., 2011). While there was relatively little research specifically on novice itinerant TVI, the larger field of literature on special education concurred on the need for strategic support during the novice years of teaching and increased access to targeted professional development for novice special education teachers (Billingsley, 2010; Billingsley et al., 2004; Browder et al., 2012; McKenzie, 2007). Again, the literature on novice special education teachers and specifically novice itinerant TVIs was limited on the topic of professional development for teachers of students with multiple disabilities including visual impairments. The field of deaf and hard-of-hearing and deaf-blindness provided the largest relevant body of literature related to the three key areas of this study: low incidence disabilities, novice teachers, and itinerant teaching.

The goal of this study was to investigate a way to increase the teacher efficacy of novice TVIs by providing online professional development from a veteran TVI on an important assessment called the ALLM specifically for students with multiple disabilities including visual impairments. The ALLM process was chosen as the specific topic of the professional development and intervention because it is a time-intensive, multistep assessment process whose value may be improved through continued education and opportunities for practice (McKenzie, 2007). Completing a comprehensive ALLM for students with multiple disabilities including visual impairments at the emergent stage of

literacy establishes a basis for appropriate instructional strategies; however, when additional disabilities are paired with visual impairments novice itinerant TVIs are often intimidated by the increased complicated interaction of multiple disabilities.

Although specific assessment protocols are presented in university teacher training programs, novice itinerant TVIs have few opportunities for implementation or practice. A gap may exist between theoretical knowledge about the ALLM protocol and the actual application of the assessment, especially for students with multiple disabilities. The ALLM is crucial to making the most appropriate and informed decisions about learning media and literacy education for students with multiple disabilities including visual impairments. Providing online professional development on the ALLM process for these students may be a viable means of closing the gap. Conducting an appropriate ALLM is the best source of information for writing a comprehensive, useful report. IEP team members use the ALLM report to make decisions about the most effective learning and literacy program for students with complex learning needs. Additional practice on conducting the ALLM for students with multiple disabilities including visual impairments was suggested as a need of novice TVIs and may result in higher quality reports (Bowen & Ferrell, 2005).

Despite the overall lack of literature on the needs of novice itinerant TVIs for targeted professional development, the literature suggested these five key points pertinent to this research study:

1. Novice itinerant TVIs face challenges similar to novice special education teachers,
2. Novice special education teachers need and can benefit from professional development specific to their field of study and veteran teacher support during

the early years of teaching (Berry et al., 2011; Billingsley et al., 2009; Seitz, 1994),

3. Conducting a comprehensive and accurate ALLM is a skill that benefits from experience and training,

4. Conducting a comprehensive and accurate ALLM is a required part of the TVI's job, is valuable for the provision of appropriate educational activities, and is beneficial for increasing the literacy progress for students with multiple disabilities including visual impairments,

5. Students with multiple disabilities including visual impairments have a basic human right to literacy and appropriate literacy instruction, and the resulting benefit is improved quality of life and participation in society.

The literature cited above discussed the impact of professional development on teachers' efficacy, however, these studies were focused on novice teachers in general and not on the needs of novice itinerant TVIs. An online search for professional development opportunities currently available focused on administering an ALLM for TVIs yielded only a few educational service district websites, which provided only basic information and rationale for using the ALLM (these included Tennessee, Texas, Oregon, Wyoming, Florida, and others). Induction support, online professional development strategies, and the need for support networks were discussed, however, the literature stopped short of implementing specific strategies to address the specific needs of novice itinerant TVIs.

The majority of the research on the topics of novice special education teachers, including novice itinerant TVIs, used surveys, case studies, and interviews, resulting in a lack of experimental data in this area. The limited literature available was primarily informational in nature, focused on classroom and school-based novice special education teachers, and rarely addressed the unique difficulties faced when teaching students with multiple disabilities including visual impairments in an itinerant position. Additionally,

there was relatively limited literature on the use of the ALLM with students who have multiple disabilities including visual impairments (Parker & Pogrund, 2009).

Another limitation of the literature was the lack of current research. For example, Seitz's study in 1994 speaks specifically about itinerant novice TVIs and the difficulties they face, but this study is now 20 years old. When looking at the research as a whole it is noticeable that the majority is 5 to 10 years old. This research study sought to add current data that specifically addressed the needs of novice itinerant TVIs. Examination of the impact of targeted professional development on novice itinerant TVIs' teacher efficacy warranted research because confident, effective teachers impact the quality and appropriateness of services for students with multiple disabilities including visual impairments.

Review of the Methodological Literature

Quasi-Experimental Design

The quasi-experimental design fit the purposes of this study because it was frequently used to answer "if-then" research questions such as this study's focused questions (Mertens, 2010). True experimental research employs randomized assignment to an intervention or control group (Mertens, 2010). Because this study focused on a specific group of novice (three or fewer years of teaching), itinerant (traveling teachers), and novice TVI's without any prior teaching experience the choice to use the randomized assignment to groupings did not work. Both experimental and quasi-experimental research examines outcomes, but the quasi-experimental design cannot determine a definitive cause and effect result. Using the quasi-experimental design was useful for

examining pre- and post-intervention results between an intervention group receiving the online professional development and a control group who do not receive the training. Pre- and post-intervention comparison of results between an intervention and control group was the guiding force for using the quasi-experimental design. Additionally, a summary view of the literature (Browder et al., 2012; B. G. Cook & Cook, 2011; Kubitsky et al., 2012; Sindelar et al., 2010) revealed a need for more experimental research regarding both novice TVIs in itinerant positions and the use of the ALLM with students with multiple disabilities including visual impairments. The literature yielded more qualitative research studies that used interviews, questionnaires, observations, conceptual models, and then applied the data to draw conclusions and make recommendations (Browder et al., 2009; McKenzie, 2009; Rosenblum & Amato, 2004; Ruppar et al., 2011; Zebehazy, 2015; Zhou et al., 2011). For this study, the choice of the pre/post-test quasi-experimental design answered the call for more experimental research on teacher development and practice evidenced in the literature (Browder et al., 2012; B. G. Cook & Cook, 2011; Kubitsky et al., 2012; Sindelar et al., 2010). Piwowar et al. (2013) used a pre- and post-design quasi-experimental for the study of 19 teachers in the intervention group and 18 teachers in the control group focused on *elaborating* practical knowledge and *expanding* knowledge through observational and video-based analysis. Piwowar et al. focused on teaching classroom management skills through three modules and the results showed an increase between pre- and post-training in all areas of classroom management. This research study used a similar pre- and post-intervention quasi-experimental design with an intervention group receiving training through four modules focused on

demonstrating an increase of novice itinerant TVIs' practical knowledge and use of the ALLM with students with multiple disabilities including visual impairments.

In addition to the quantitative data collected through quasi-experimental methods, this study also used mixed-methods in order to add more depth and context to the quantitative data (Creswell, 2008; Creswell & Plano Clark, 2011; Krathwohl, 2009; Morgan, 2013). Johnson and Onwuegbuzie (2004) talked about the importance of the using mixed methods by stating:

> By using different strategies, approaches, and methods the resulting combination is likely to result in richer data and enhance the analysis. Effective use of this principle is a major source of justification for mixed methods research because the product will be superior to monomethod studies. (p. 18)

In this study, an acceptability rating scale was used to validate the professional development and growth of teacher efficacy at the end of the research protocol. Although the ALLM has not been validated through experimental research and while this research study did not seek to validate the protocol, it sought to provide evidence of novice itinerant TVIs' gains in assessment efficacy through participation in an online targeted professional development focused on administering an ALLM with students with multiple disabilities including visual impairments.

Online Format for Delivering Professional Development

As described further in Chapter 3, the intervention used for this research was conducted as four online targeted professional development modules. Trust (2016) reported that the numbers of teachers using online networks to improve and develop their practice had increased. Trust went on to say that "many teachers consider their

participation in online communities and networks to be a meaningful form of professional development" (p. 291).

An online protocol was chosen in part because participants for this study were geographically dispersed, or in rural or remote locations making it difficult to conduct a face-to-face training (Beach, 2017; Hanney & Newvine, 2006; Redmond, 2015). In addition, novice itinerant TVIs already experience high levels of travel; therefore, providing this professional development online removed the need for additional travel. This study responded to the call for more experimental research (quasi-experimental design) on the effects of online professional development on teacher practice (Fishman et al., 2013). The online professional development intervention for this research study also produced a reusable product that may be more cost effective than in-person trainings. The topics in the online professional development modules were chosen based on the information from position papers and teacher surveys discussed earlier in this chapter.

Support for the efficacy of online professional development was provided by a study by Masters, Magidin deKramer, O'Dwyer, Dash, and Russell as cited in Fishman et al. (2013), which examined the impact of online professional development on the knowledge and teaching strategies of fourth-grade English language arts teachers. The authors utilized an intervention with control groups and pre- and post-tests. The findings demonstrated significant positive changes in knowledge and practice growth between the pre- and post-tests. Fishman et al., (2013) conducted their own study to examine the differences between online and face-to-face professional development on the implementation of a science curriculum by high school teachers and student outcomes.

The findings of this study revealed a 0.88-point gain in content knowledge for the online group and a 0.58-point gain for the face-to-face group. Data from one aspect of Fishman et al.'s study discussed the increase of personal efficacy. Both groups showed a growth in efficacy beliefs as a result of the professional development, however, the online group demonstrated a slightly higher, but not statistically significant, pre- to post-test gain. These studies suggested that online professional development may be an effective tool for giving teachers additional training.

Principles of online learning and adult learning suggested a needs assessment and a specific sequence of the material, engagement, and accountability (Gunter & Reeves, 2017; Vella, 1994). The intervention or online targeted professional development provided the structure utilizing these principles. The needs assessment part is loosely tied to the pre-intervention assessment of skills. The online professional development for this study respected the learning preferences of adult learners and presented information in a chunked and sequential format. The modules built upon each other as they progressed and included participation from the TVIs. Engagement was checked by short assessments of knowledge as the participants went through the modules. The post-intervention assessment provided the accountability and demonstrated new knowledge acquisition.

Summary

The online targeted professional development for this proposed study was focused on conducting the ALLM with students with multiple disabilities including visual impairments at the emergent or beginning stage of literacy development. The researcher anticipated these three outcomes: (a) participants will demonstrate an increased level of

knowledge regarding completing a comprehensive ALLM as evidenced by higher scores on the post-intervention knowledge questionnaire, (b) participants will demonstrate an increased level teacher efficacy as evidenced by improved quality of ALLM reports appropriately aligned with the data collected during the assessment, and (c) participants will express positive opinions about the benefit of the intervention. This study endeavored to contribute to the limited knowledge base of successful methods for supporting and furthering the practical knowledge for novice itinerant TVIs. In Chapter 3 the research methods, intervention, data collection procedures, and participants' selection processes were described in more detail.

CHAPTER 3

METHODOLOGY

Novice itinerant TVIs face challenges similar to other novice special education teachers such as nominal support from veteran teachers and limited access to targeted professional development in their field of specialization. As teachers in a low-incidence disability field, novice itinerant TVIs have found themselves in isolated itinerant positions exacerbating feelings of loneliness and low teacher efficacy. This research study employed a pre- and post-intervention design in which knowledge questionnaires focused on the essential elements of the ALLM and then pre- and post-intervention completed ALLM reports were collected from both groups of participants (intervention and control). The intervention consisted of four online modules focused on completing the ALLM and writing an accurate report with the recommendations matching the assessment data. The specific primary question was: Does online professional development increase novice itinerant TVIs' efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? The secondary questions were:

1. Does online professional development increase novice itinerant TVIs' knowledge of best practices for conducting an ALLM for students with multiple disabilities including visual impairments?
2. Does online professional development improve the quality of assessment for learning and literacy reports written by novice itinerant TVIs?
3. (C) Does participation in an online targeted professional development result in participants' positive perceptions of the value of the intervention to self and to other TVIs?

Research Methodology

Quasi-Experimental Design

The typical structure of quasi-experimental research involves a pre- and post-test design with an intervention. The pre- and post-test design is one form of quasi-experimental design useful for educational research studies (Ary, Jacobs, & Sorenson, 2010; T. D. Cook & Campbell, 1979; Mertens, 2010). Typically, a quasi-experimental study allowed the use of nonrandomized assignment of participants into the intervention and control groups (Mertens, 2010). Nonrandomized assignments meant participants were purposely chosen for each group with the goal of keeping the two groups as equal as possible. The general research question that a quasi-experimental study answers was what is the effect of an intervention for a designated population. This research study sought to answer the "What is the effect . . ." question by comparing pre- and post-intervention outcomes after the online professional development was presented. The researcher chose the quasi-experimental design because it supported expanded thinking in the field of visual impairment for three reasons: the methods align with post positivist assumptions described in the theoretical framework section in Chapter 2 (Mertens, 2010); to contribute experimental research regarding novice teacher needs (Browder et al., 2012; Kubitsky et al., 2012; Yell et al., 2006); and to examine the impact of specific professional development delivered online for novice itinerant TVIs. Gersten et al. (2005) and Odom et al. (2005) discussed quality indicators that described what the best quasi-experimental intervention research should incorporate such as: multiple measures used

and a clearly defined intervention. The next two sections addressed these quality indicators and how they were applied in this study.

Quality indicator: Multiple measures. For quasi-experimental studies, it is essential to collect multiple forms of data through multiple sources (Gersten et al., 2005). The multiple sources of data for this research study were pre- and post-knowledge questionnaires, pre- and post-intervention ALLM written reports, and a post-research acceptability rating scale. Collecting data from these multiple sources involved the use of quantitative and qualitative methods. Quantitative and qualitative research strategies were combined to add strength and depth to the study (Butin, 2010; Creswell, 2008; Creswell & Plano Clark, 2011; Krathwohl, 2009). The study integrated quantitative and qualitative data by including open-ended questions and forced-choice responses on the pre- and post-intervention knowledge questionnaires on the ALLM protocol (see Appendix E). The rubric (see Appendix G) used seven criteria that were based on best practices and the recommended essential components (listed later in Chapter 3) of a quality ALLM report and used to score the pre- and post-intervention ALLM reports. Finally, the acceptability rating scale (see Appendix H) at the end of the study generated data from Likert scale choices. The acceptability rating scale assessed the value of the intervention modules to the participants. The mixed methods approach for this research study was the Sequential Priorities Model from the text *Integrating Qualitative and Quantitative Methods: A Pragmatic Approach* by Morgan (2013). In the Sequential Priorities Model, the core of a study is the quantitative data collection method while qualitative data is supplementary (Morgan, 2013).

Quality indicator: A clearly defined intervention on the ALLM process. The intervention was a series of four 10-15 minute modules focused on conducting the ALLM for students with multiple disabilities including visual impairment. It further focused on writing accurate reflections of the assessment data in the results report. The intervention was conducted through asynchronous instruction online using a web-based learning system. Asynchronous instruction, defined as self-paced instruction, was the format for delivery of the four learning modules.

This research study used the static-group comparison design (Mertens, 2010). Static-group design is a form of comparison analysis and is common in research using the quasi-experimental design. By implementing a comparison analysis with the open-ended questions on the knowledge questionnaire (see Appendix E) the researcher sought to determine whether a consistent pattern emerged that addressed the following questions: (a) did the online professional development modules increase the novice TVI's knowledge base and efficacy on the ALLM and the written report, (b) were the changes unique to the intervention group only or did the control group also demonstrate changes, and (c) did the modules have social validity (provide benefit) for the intervention group participants?

Quality indicator: Fidelity of implementation. Fidelity of implementation is determined when an intervention is implemented as intended. In order to ascertain fidelity, the researcher selected a veteran professional in the field of education of students with visual impairments to review the training modules prior to presenting the training to the intervention group. This professional assessed the intervention prior to

implementation to insure the skills taught were accurately reflected on the pre- and post-knowledge questionnaire. Additionally, participants completed short answer questions during each of the intervention modules to check for understanding of the material presented.

Participants

Participant Selection Rationale

Before participant selection for this research study began, approval was obtained from Portland State University's Human Subject Research Review Committee's Institutional Review Board. After Institutional Review Board approval, the search for appropriate participants began. The specific number of participants initially desired for this study was 15-20. The availability of novice (first through third year) TVIs was limited due to the low-incidence of the disability and the limited university preparation sites (as discussed in Chapter 2). Of the approximately 442,000 special education teachers nationwide (Bureau of Labor Statistics, n.d.), Kirchner and Diamant (1999) reported that there were 6,100 TVIs teaching nationwide and 2,500 of those were vision rehabilitation teachers. The approximate number of TVIs was then reduced to 3,600, .8% of the total 442,000 special education teaching force and that .8% of TVIs included TVIs with all levels of experience.

Based on the data observed the number of 15-20 participants seemed appropriate but were not available at the time the research started. Therefore, after several months of recruitment the final participant group consisted of 11 itinerant TVIs. Due to the lack of participants available that were in the novice phase of work (first through third year of

teaching) two TVIs with more than three years were included in the participant group. TVIs with any previous teaching experiences in general or special education were excluded. For research on the impact of targeted professional development on novice itinerant TVIs' efficacy, the decision to exclude teachers with any previous teaching experience was made because these teachers did not meet the study parameters for novice TVIs.

Participant Recruitment

The search for qualifying participants was conducted nationwide through university colleagues, potential participants sharing with other TVIs, and listservs. The research contacted university preparation programs through correspondence with the lead professors. The lead professors were asked to post the recruitment flyer (see Appendix C) and notify recent graduates about the study. Contact information was linked back to an email account set up for the study: noviceTVIstudy@gmail.com. All recruitment materials included a link to the demographic survey (see Appendix D) and the demographic survey was hosted on the Portland State University Qualtrics platform, and was accessible on computers, tablets, and cell phones. All individuals who contacted the researcher were screened using the online demographic survey to assess potential for participation. The researcher exercised full disclosure and clarified how participation in the study would not impact the participants' job security; the results would be confidential and used only for data analysis to answer the research questions. When individuals met the participation criteria they were invited to join the study and the

methodological approach was explained. Figure 1 shows the sequence of participant selection.

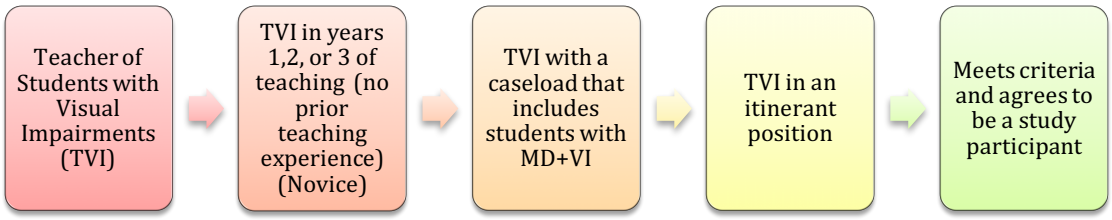

Figure 1. Flowchart showing the process of participation selection.

The participants were selected using the purposeful sampling strategy. Participants selected using this strategy were "judged to be typical or representative of a certain population" (Ary et al., 2010, p. 156). Initially participants for this research study were selected with the following criteria: be a TVI teaching in their first through third year, be a first time licensed teacher (no prior teaching experience before becoming a TVI), be an itinerant teacher (as defined in Chapter 1), and have students with multiple disabilities including visual impairments on the caseload. When interested participants contacted the researcher they were encouraged to share the study information with other TVIs.

Once the participants were selected and they were asked to complete a DocuSign document (see Appendix B) agreeing to participate in this study. Next, the research study's instructions, timeline, and overview for the online professional development were sent. Only the researcher had access to the individual participants' submissions throughout the study. The submissions provided the data for the research study and included: the demographic information sheet, pre- and post-knowledge questionnaires,

pre- and post-ALLM reports, and the acceptability rating scale. The data were collected, scored, coded, and documented as the participants submitted the information. The data collected were stored in a password-protected online file and only accessed through encrypted servers and VPN. The hard copy submissions, researcher notes, data analysis, and key code with participants' pseudonyms was stored in a locked file box in the researcher's home office and then permanently destroyed at the conclusion of the research study in accordance with Portland State University's Human Subject Research Review Committee's Institutional Review Board instructions.

The decision of which participants were in the intervention and control groups was determined by the number of years they had taught, either 1, 2, or 3 years. Secondary consideration was given to the participant's pre-ALLM report scores. An independent samples *t* test indicated the difference between participants in the control and intervention group was not statistically significant. This analysis of the demographic survey insured that the participants were divided in two congruous groups (see Table 1). Although, the research study sought to use years of teaching as a grouping criteria, the other information gathered on the demographic form may have had an impact on the participants' performance and was useful in interpreting results.

Table 1

Demographic Survey of Participants

Participant Number	Years as TVI	Availability of Targeted Professional Development per Year	Availability of Veteran TVI Support	Rural or Urban Caseload
1	1	1	No	Rural
2	3.5	2+	No	Urban
3	5	5	Yes	Urban
4	1.5	1	Yes	Urban
5	1	2+	Yes	Rural
6	1	2+	Yes	Urban
7	2	2+	No	Rural
8	2	0	Yes	Rural
10	1	1	No	Rural
11	4	2+	No	Rural

Note. Participants 1-5 were in the Control group and participants 6-11 were in the Intervention group. Participant 9 was excluded from the research halfway through the study by individual request.

As this study requested assessments of school-age children with visual impairments and additional disabilities, parent consent was required. Since the TVI participants obtained existing assessment information and reports (pre-test data) and conducted assessments with children with are blind and visually impaired with additional disabilities (post-test data) parents were recruited through their child's TVI. Parent recruitment involved two methods: (a) a short letter sent directly to child's home from the TVI and (b) an email sent to parents from the TVI. The letter and email outlined the purpose of the study and included the contact information for the lead researcher. These school-aged children were students who the TVI participants already served as part of

their current teaching caseload. These were children who had complex learning needs and were at the emerging or beginning literacy stage. Due to the complexities of communication that was involved when working with students with multiple disabilities including visual impairments, the child assent requirement was waived. Although child assent was waived, the TVI participants were instructed by the researcher on the necessity to monitor for changes in the child's behavior, facial indicators, and energy level that may have indicated a change in the child's desire to participate at that time or on that activity. When confronted with the child's change in desire to participate the study participants were instructed to stop and reschedule.

In order to encourage participation in the study and to limit study attrition, a stipend (gift card) was offered. The stipend information was contained in the original recruitment flyer (see Appendix C). All qualifying participants who completed and submitted the study items received a gift card. In addition to the gift card at the completion of the study, participants in the intervention group received substantive feedback from the researcher on their personal performance. Additionally, at completion and submission of all the study items the participants in the control group received a copy of the print manual and access to the online modules.

Study Procedures

Table 2 provides an overview of this study. The study sequence and procedures are explained further in the next paragraphs.

Table 2

Study Sequence and Procedures

1. All participants submitted an ALLM that they had completed for one of their own students *prior* to this study.
2. All participants were given an online link to Qualtrics and asked to complete a pre-intervention knowledge questionnaire (see Appendix E).
3. The online professional development was presented to the intervention group in 4 modules using an online platform. The control group did not receive the intervention at during the research time, but were given access to it once the research study was completed.
4. After the intervention group finished the online training modules, all participants conducted, wrote, and submitted to the researcher a new ALLM report on a student in their current caseload with additional disabilities including visual impairments.
5. During the last phase of the study all TVI participants completed the post-intervention ALLM knowledge questionnaire (the same knowledge questionnaire they completed in the pre-intervention phase) on Qualtrics.
6. The participants in the Intervention Group completed an Acceptability Rating Scale on Qualtrics used by the researcher to assess the social validity of the online training.

Role of the Researcher

This study included: pre/post-intervention knowledge questionnaires related to the ALLM protocol, the intervention modules, the pre/post-ALLM report scoring rubric, and the acceptability rating scale. The researcher developed the knowledge questionnaire items based on the recommended components of conducting and writing a quality ALLM report from the *Learning Media Assessment of Students with Visual Impairments: A Resource Guide for Teachers* (Koenig & Holbrook, 1995). Additionally, the researcher used protocols, rubrics, information from professional webinars, and forms from published materials to develop the knowledge questionnaires and the online intervention modules. The researcher added in sections, which specifically focused on the important considerations when assessing students with multiple disabilities including visual

impairments. More specifically, components of the knowledge questionnaires and four modules used forms and information from Koenig and Holbrook's (1995) book and from the *Study SLATE* (Holbrook, Croft, & Koenig, 2005), *SLK Guidebook and Assessment Forms* (M. Smith, 2005), and *The Individual Sensory Learning Profile* (Anthony, 2003).

Additionally, the researcher incorporated feedback from a face-to-face training with 15 local veteran TVIs at the Columbia Regional Program in Portland, OR. This face-to-face training included pre- and post-knowledge questionnaires, training on conducting the ALLM, and the acceptability rating scale. The feedback indicated that the training was sufficient for veteran TVIs, however, novice itinerant TVIs needed more in depth instruction relating to the assessment process and writing the report with appropriate recommendations. Specific recommendations from the veteran TVIs' feedback were: (a) to increase the scaffolding of the intervention information, (b) to provide more detailed information on each step of the ALLM process, and (c) to increase guided practice with the forms and report writing. To address these recommendations the researcher added more scaffolding of the essential steps and more video clips focusing on the translation of the assessment data into appropriate written recommendations.

Instruments and Measures

The researcher took great care to acknowledge and check for personal bias during the course of the study. Specifically, personal bias is any predisposition that may influence the results. The researcher was aware that the study may not confirm beliefs about novice itinerant TVIs. To assist in containment of researcher bias, a rubric was used to score the ALLM reports. The researcher and the on additional rater rated the same

six ALLM reports using the same rubric for inter-rater reliability. The other rater was a retired university assistant professor that led the Portland State University Visually Impaired Learner program had approximately 40 year's experience in the field of visual impairments. The inter-rater reliability was calculated using data from six scored pre-ALLM reports. The raters agreed upon 37 out of 42 items, which equaled a percent agreement of 88% and rated 55% of the submitted reports.

This study employed an intervention consisting of four online professional development modules where the participants practiced conducting a learning and literacy media assessment with students with multiple disabilities including visual impairments. Additionally, the intervention guided participants through the process of interpreting the data to compose meaningful, appropriate recommendations. Before presenting the intervention, all participants submitted a pre-intervention knowledge questionnaire and an assessment report they had completed before the study began. Next, the participants were divided into control and intervention groups based on the data collected from the demographic survey. Both groups were analyzed in order to assemble two groups with the closest equivalent composition.

Next, Table 3 illustrates the four phases of this study. The table also indicates which group will participate in each phase. Both control and intervention groups participated in Phase One, Phase Three, and Phase Four. Phase Two was the presentation of the intervention through the four online modules and, therefore, was not available to the control group.

Table 3

Study Phases

Phases of the Study	Activity	Intervention Group	Control Group
Phase One	Setting	Email & Online	Email & Online
	Pre-Study	Signed agreement of participation	Signed agreement of participation
	Sequence of Events	Collected pre-intervention assessment for learning and literacy reports	Collected pre-intervention assessment for learning and literacy reports
		Completed the online pre-intervention assessment for learning and literacy knowledge questionnaire	Completed the online pre-intervention assessment for learning and literacy knowledge questionnaire
Phase Two		Participated in four online targeted professional development modules	Did not have access to the four modules
Phase Three		Collected post-intervention assessment for learning and literacy reports	Collected post-intervention assessment for learning and literacy reports
		Completed the online post-intervention assessment for learning and literacy knowledge questionnaire	Completed the online post-intervention assessment for learning and literacy knowledge questionnaire
Phase Four	Conclusion of the data collection	Completed the acceptability rating scale online	Did not complete acceptability rating scale

Phase One: First: Submission of an ALLM report. Participants' first data submission was an ALLM report completed prior to the research study. The ALLM reports were scored using a rubric of essential components including checks for accuracy in linking assessment data to the recommendations developed by the researcher (see Appendix G). The essential components of an ALLM reports that were evaluated were:

1. Purpose of the assessment
2. Review of functional vision evaluation and other relevant assessments
3. Teacher, family interviews
4. Sensory channels observed
5. General learning tools observed
6. Summary of observations and assessments
7. Recommendations of the most efficient learning and literacy media that match the data collected through the assessment strategies

Second: Submission of the pre-intervention knowledge questionnaire. Once the initial ALLM report was submitted, participants took the online pre-intervention knowledge questionnaire. The knowledge questionnaire asked open-ended and multiple-choice questions which pertained to conducting the ALLM and writing a comprehensive report. A comprehensive report was defined as one that included all the essential components listed above. The researcher used the answer sheet in Appendix F to score the questionnaires and this score provided a baseline from which to measure knowledge growth.

Phase Two: Participation in the intervention. Next, the five participants in the intervention group received the online professional development in four 10-15 minute modules. The demographic profile of these participants was: 2 had access to veteran TVI assistance and 3 had no access, 2 had one-year experience, 2 had two year's experience, and 1 had four years of TVI experience. The modules consisted of recorded lectures, video clips, links to download the forms specific to each module, and quick checks to reinforce the information presented online. The participants also received by mail a hard

copy manual (see Appendix K) with blank forms and completed example forms. The objectives for each module were as shown in Table 4.

Table 4

Module Objectives

Module	Module Objectives
Module 1	Learn the purpose of the assessment and its importance to all students with visual impairments including additional disabilities. Learn the impact of additional disabilities when combined with visual impairments on conducting the assessment.
Module 2	Identify the critical components of an ALLM and the comprehensive report. Identify the Sensory Channel form and determine a student's most efficient sensory channel.
Module 3	Demonstrate how to use additional forms: 8, 9, 10, and 11 from the Learning Media Assessment text by Koenig and Holbrook (1995). Demonstrate knowledge of behaviors that provide critical data during observations. Identify additional resources that are useful when conducting the assessment with students with visual impairments including additional disabilities.
Module 4	Demonstrate appropriate selection of resources necessary to complete a comprehensive assessment for students with visual impairments including additional disabilities. Demonstrate increased accuracy when aligning data with recommendations made in the report.

Various assessment forms were presented in each module, discussed, and then the researcher presented appropriate responses on slides after the activity. A variety of observation forms applicable to the assessment of students with multiple disabilities including visual impairments were from the published literature as stated earlier by Koenig and Holbrook (1995), M. Smith (2005), Holbrook et al. (2005), and Anthony

(2003). During the last module the intervention group was guided through the process of writing a meaningful results report with recommendations that aligned with the data.

Phase Four: Post-intervention. After viewing the modules and submitting the post-ALLM report, the intervention group participants completed an acceptability rating scale. This scale involved Likert scale ratings on the effectiveness, relevance, and benefits of the online professional development focused on the ALLM process. The online modules and print manual were not given to the control group during the study; however, they were sent to the control group once the study was completed.

Qualitative information. The last information analyzed was the qualitative comments from the demographic survey and email communications between the research and the participants. Looking at these comments provided assurance for the researcher that the intervention was appropriate and important. The comments were examined for themes that seemed prominent and emerged as consistent throughout the analysis.

Data Collection and Analysis

For this research study, the pre- and post-intervention knowledge questionnaire scores and ALLM report scores were analyzed using comparative methods. Comparative methods measure the amount of change between the intervention and control groups' performances and are commonly used in quasi-experimental studies. The outcome of the data analysis for this research study was a change score. In order to examine the amount of change all study participants were asked to complete a pre-intervention knowledge questionnaire and submit a pre-intervention ALLM report. The scores from these data were then compared to the scores of the post-intervention knowledge questionnaires and

submitted ALLM reports. This comparison provided data indicating the rate of change that occurred for individual participants pre and post and the amount of change between the intervention and the control groups pre and post. It was the hypothesis of the researcher that the rate of individual score change and the amount of change between the two groups would indicate a significant positive change for the intervention group after they received the professional development.

The pre- and post-intervention knowledge questionnaire scores were compared using the recommended test answers and point system in Appendix F. The researcher developed a scoring rubric (see Appendix G), which provided the basis of the comparison between pre- and post-intervention ALLM reports. The rubric looked at the completeness of the written report and the compatibility between the ALLM data and the written recommendations (see Appendix G). Compatibility between the assessment data and the recommendations meant the recommendations were supported by the assessment responses from the student. Analyzing the data was another indicator of the impact of the online professional development on the novice itinerant TVIs' assessment efficacy.

Independent sample *t* tests were used to analyze how much change occurred between the participants' pre- and post-knowledge questionnaires, and pre- and post-intervention ALLM reports. The choice of independent *t* tests was due to the characteristics of the study design; the researcher was manipulating the independent variable (intervention), by presenting the intervention to one group and not to the control group. Also, the independent *t* test can be used when the two populations demonstrate homogeneity of variance. Using the demographic survey and pre-knowledge

questionnaire scores the participants were divided into two groups that were as equal as possible. Each participant generated 4 data points from the pre- and post-intervention knowledge questionnaires and the pre- and post-ALLM reports. Table 5 describes the research sub-questions and the alignment of data collection.

Table 5

The Alignment of the Research Question and the Data Collection

Research Sub-Questions	Data Collection/Analysis
Does the online professional development on the ALLM result in increased knowledge of best practices related to conducting the ALLM protocol?	Independent *t* test comparison of pre- and post-intervention knowledge questionnaires.
Does the online professional development result in increased knowledge and quality of the ALLM written report?	Independent *t* test comparison of pre- and post-intervention ALLM written reports using scores derived from rubric.
Does the online professional development provide benefit to the novice itinerant TVIs?	Acceptability Rating Scale: provides data on the social validity (usefulness) of the intervention.

This study was developed to examine whether targeted professional development presented online was a viable strategy to increase novice itinerant TVIs' assessment efficacy. The assessment for learning and literacy was the subject of the four professional development modules. Collecting pre- and post-intervention data and analyzing it using dependent and independent *t* tests were the strategies employed in this study. Chapter 4 discusses the data analysis and results in more detail.

CHAPTER 4

RESULTS AND ANALYSIS

Introduction

In this chapter, the researcher reviews the purpose of this study and presents an analysis of the results aligned with the research questions as well as identification of study limitations. The purpose of this study was to analyze whether online professional development specific to working with students with visual impairments would increase levels of novice itinerant TVIs' assessment efficacy. The professional development pertained to conducting and reporting the results of an ALLM for students with visual impairments and multiple disabilities. Previous research suggested that most TVIs leave their teacher preparation program with minimal practice conducting specialized assessments, such as the ALLM, essential for a TVI (Griffen-Shirley et al., 2004). Given that there are limited opportunities for novice TVIs to receive specific professional development related to the best practices regarding the unique assessments for students with visual impairments and multiple disabilities (ALLM), this study sought to address this need through the use of online professional development modules delivered to novice TVIs (Bowen & Ferrell, 2005; Holbrook, 2009; McCall & McLinden, 2001; McKenzie, 2007).

The primary question was: Does online targeted professional development increase novice itinerant TVIs' efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? In order to determine

the impact of online professional development the researcher employed a pre-post design one form of quasi-experimental research. A pre-post design answers questions formatted in the "if this happens, then that happens" pattern. In the case of this research the "if this happens" portion was the targeted professional development delivered to the intervention group through four online modules. For the "then that happens" portion data were collected to assess an increase in assessment efficacy for the intervention group. The four online professional development modules focused on completing and reporting on an ALLM conducted for students with multiple disabilities including visual impairments.

As a means of assessing the components of practice and application of the novice itinerant TVIs, two sub-questions emerged. They were: (a) Does online professional development increase novice itinerant TVIs' knowledge of best practices for conducting an ALLM for students with multiple disabilities including visual impairments (practice), and was examined through the pre- and post-knowledge questionnaire responses; (b) Does online professional development improve the quality of the ALLM results report written by novice itinerant TVIs (application), was examined through the pre- and post-ALLM reports as scored using a rubric. Lastly, to determine if the participants found the online modules of value and would recommend them to their colleagues the intervention group completed the acceptability rating scale. The third sub-question addressed this topic of social validity (c) Does participation in an online professional development result in participants' positive perceptions of the value of the intervention to self and to other TVIs?

Initially 15-20 participants were anticipated for this study. However, as a low incidence disability field, the availability of willing one to three-year novice TVIs was limited. The participants reported their years of teaching as a TVI with no prior teaching experience. Some participants who had more than the desired one to three years of teaching were included in the study. After the researcher conducted extensive recruitment inquiries yielding no more participants with one to three years teaching experience, the TVIs that had additional teaching time were allowed into the study. The range of years that the participants were employed as a TVI was one to five years with the average amount of time being two years of teaching.

One assumption of this study was that novice TVIs have limited access to targeted professional development opportunities. Having access to targeted professional development can provide a level of support in the way that it furthers training and application of the unique skills that are part of the TVIs' job requirements. The demographic survey (Table 1) was the documentation used to examine the participants and the characteristics of their current teaching environment. Table 1 in Chapter 3 displays the primary characteristics of the eleven research participants. The average opportunities each TVI had to participate in professional development related to their work with students with visual impairments was two times a year with a range from 0 to 5. Out of the 11 participants starting the study, 6 indicated no access to a veteran TVI for support and mentoring and 5 indicated yes they did have access to a veteran TVI.

The division of the participants into the control or intervention groups was accomplished through examination of data gathered from the demographic surveys. An independent *t* test examined scores from the participants' pre-knowledge questionnaire, pre-ALLM report scores, and the years of teaching experience as a TVI. These data were used to divide the participants into the control and intervention groups. The first independent *t* test generated these results: Group One ($n = 5$), ($M = 29.60$, $SD = 7.40$), and Group Two ($n = 6$), ($M = 29.67$, $SD = 7.53$), $p = .96$, therefore, no statistically significant difference between the two groups. The second independent *t* = test generated these results: Group One ($n = 4$), ($M = 15.13$, $SD = 1.70$), and Group Two ($n = 6$), ($M = 16.42$, $SD = 2.50$), $p = .42$, therefore, no statistically significant difference between the two groups from this test. This analysis aided in making sure the division of the participants was into two groups that were as equal as possible.

Analysis of Data

This study was conducted in four phases. Phase one involved the collection of information from a pre-ALLM report completed by each participant prior to entering the study. Also, in phase one the participants completed a pre-knowledge questionnaire focused on the purpose of the ALLM and what the components of a comprehensive ALLM results report. The second phase was the presentation of the four online professional development modules to the intervention group. Phase three was the collection of the post-ALLM report from all participants and the completion of the post-knowledge questionnaire. Finally, the fourth phase was the completion of the

acceptability rating scale by only the intervention group. Descriptive statistics and *t* tests were used to compare pre-post outcomes of TVI participants of the online modules and those TVIs that did not receive the online modules. The amount of change between individuals' pre- and post-knowledge questionnaires and pre- and post-assessment reports were calculated using the two dependent *t* tests. Amount of change between the two groups (control and intervention) was calculated using two independent *t* tests. All of these *t* test results are discussed in the next section. Descriptive statistics from the acceptability rating scale were collected from the intervention group that participated in the online training to assess the feasibility of the online modules. The results of these assessments are presented in the next sections.

Presentation of Results

Pre- Post-ALLM Knowledge Questionnaire Scores

Table 6 shows the percentage correct scores for pre- and post-knowledge questionnaire scores for both groups. The range of scores for the control group was pre: 14-18 points (50-63%) and post: 16-18 points (55-64%). The averages for the control group pre and post were: 16 and 17 points. The control group did not significantly improve in their knowledge scores (average pre-knowledge score =16 [*SD* = 1.52] *v* average post-knowledge score =17 [*SD* = 1.00]) $t(4) = 1.97$, $p = .12$.

Table 6

Pre- and Post-Scores and Change Scores in Percentages

Participant	Pre-Knowledge Questionnaire % Correct	Post-Knowledge Questionnaire % Correct	Pre/Post-Knowledge Questionnaire % Change in Scores	Pre-ALLM Report %	Post-ALLM Report %	Pre- Post-ALLM Report % Change in Scores
1	53	59	10	36	39	8
2	63	64	2	46	46	0
3	50	57	12	79	71	-11
4	52	55	5	54	39	-38
5	61	59	-3	57	46	-24
Average % Change Scores for Control Group	56	59	5	54	49	-10
6	75	86	13	57	86	34
7	55	66	17	36	61	41
8	61	79	23	54	96	44
10	63	70	10	75	N/A	N/A
11	52	64	19	46	54	15
Average % Change Scores for Intervention Group	60	73	18	52	74	30

Note: Intervention Participant 9 was deleted by participant choice. Intervention Participant 10 did not complete the post-ALLM report.

An independent *t* test was used to determine if the change between the control and intervention groups on the pre- and post-knowledge questionnaires was statistically significant. For this independent *t* test the sample size of the control group was 5 and the results were (M = .80, SD = .91). The sample size of the intervention group was 5 and the results were (M = 3.30, SD = 1.09). Results of independent *t* tests showed the change in the knowledge questionnaire scores between the control and intervention groups was statistically significant $t(8) = 3.93$, p =.01.

Assessment of Learning and Literacy Media Scores

Table 6 shows the percentage correct scores for the pre- and post-ALLM scores. The control group *t* test results indicated that the change in pre- and post-ALLM report scores was not significant. Pre-ALLM reports generated a (M = 30, SD = 8.9), and post-ALLM reports generated a (M = 27, SD = 7.4), the conditions were $t(4) = 1.73$, p =.16. For the intervention group, *t* test results indicated the change in pre- and post-ALLM reports was significant. Pre-ALLM reports generated an (M = 27, SD = 5.3), and post-ALLM reports generated an (M = 42, SD = 11.4), the conditions were; $t(3) = 3.53$, p = .04.

A second independent *t* test revealed another set of group statistics, which demonstrated the change between the control and intervention groups on the pre- and post-ALLM reports as they were scored on the rubric. The sample size of the control group was 5 and the results were (M = -3.20, SD = 4.15). The sample size of the intervention group was 4 and the results were (M = 14.50, SD = 8.23). Results of the

second independent *t* test for the pre- and post-ALLM scores showed the change between the intervention and control groups was statistically significant $t(7) = 3.92$, $p = .02$.

The four participants in the intervention group that completed all phases of the study showed growth on the rubric scores for their post-ALLM. The rubric was divided into seven categories that focused on the seven components of a comprehensive ALLM report. The components the rubric evaluated were: (a) background, (b) teacher and caregiver interviews, (c) sensory channel forms, (d) procedures used, (e) assessment results, (f) recommendations, and (g) summary. Table 7 reports intervention participant's growth in percentages from the pre-ALLM to the post-ALLM reports. The demonstrated growth for the intervention group had a range of 15% - 44%. Table 7 also shows the rubric topics that showed the least and the most growth between the pre- and post-ALLM reports.

Table 7

Intervention Participants ALLM Rubric Report

Participant	Pre-ALLM Rubric % Score	Post-ALLM Rubric % Score	Amount of Change Pre/Post %	Rubric Item with Least Change	Rubric Item with Most Change
6	57	86	34	Procedures Used	Sensory Channels, Assessment Results, Recommendations
7	36	61	41	Interviews, Procedures Used	Assessment Results, Recommendations
8	54	96	44	Procedures Used	Sensory Channels, Assessment Results
11	46	54	15	Sensory Channels, Procedures Used, Interviews	Recommendations, Summary

Note. Percentage change calculated as post % minus pre % divided by post % times 100.

Participant 11 demonstrated the least amount of growth on the ALLM rubric with a change score of four. After examining the rubric scores of the four participants from the intervention group, it appeared that the most increase in rubric points occurred in the areas of writing assessment results and appropriate recommendations based on the assessment data. The areas in need of more intervention appeared to be documenting the procedures used to complete the ALLM and conducting and reporting on caregiver/staff interviews.

Acceptability Rating Scale

Upon completion of the modules, the intervention participants completed the Acceptability Rating Scale (Appendix H). They completed a Likert Scale of eight statements with ratings of 1-strongly disagree, 2-disagree, 3-agree, and 4-strongly agree. The statements were focused on perceptions of their personal assessment efficacy after viewing the modules and the overall relevance of the modules. Table 8 displays each statement topic and ratings from the five participants in the intervention group that finished the modules.

Table 8

Acceptability Rating Scale Results

Acceptability Rating Scale Questions	Participant 6	Participant 7	Participant 8	Participant 10	Participant 11	Average of Scores
1. More prepared to use ALLM	4	3	3	4	3	3
2. Will use strategies learned	4	4	4	4	4	4
3. Worth sharing with other TVIs	4	4	3	4	4	4
4. Easy forms to use	3	4	3	4	4	4
5. More efficient	3	3	4	4	3	3
6. Confidence with conducting the ALLM	3	3	3	4	3	3
7. Confidence writing report	3	2	4	4	3	3
8. Confidence using data	3	3	4	4	3	3
Average Score	3	3	4	4	3	3

Notes. Intervention Group Response Likert Scale Range: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree.

Following are eight full statements on the Acceptability Rating Scale and the participants' average rating:

- The first statement on the ARS was: "The ALLM training prepared me for conducting assessment of learning and literacy media with my students with multiple disabilities including visual impairments." The average of the total ratings was 3.4, and most participants scored this statement at a 3-agree.

- The second statement was: “I will use these ALLM procedures with students for whom it is appropriate.” The average of the total ratings was 4, and all the participants scored this statement with a 4-strongly agree.

- The third statement was: “I would suggest this training to other TVIs wanting to learn more about conducting the ALLM with students with multiple disabilities including visual impairments and writing an accurate, appropriate report.” The average of the total ratings was 3.8, and no participant scored this statement less than a 3-agree.

- The fourth statement was: “The tools/forms used to complete the ALLM process were relatively easy to use.” The average of the total ratings was 3.6 and no participant scored this statement less than a 3-agree.

- The fifth statement was: “I am more efficiently using the Sensory Channels observation form when conducting the ALLM.” The average of the total ratings was 3.4, and no participant scored this statement less than a 3-agree.

The last three statements on the Acceptability Rating Scale focused on the intervention groups’ confidence level after completing the four online modules.

- The sixth statement asked the participants to rate their confidence level for conducting an ALLM. The complete statement was: “My competence level is such that I can conduct an ALLM that will inform the most efficient learning and literacy media for my students with additional disabilities and visual impairments.” The average of the total ratings was 3.2, and no participant scored this statement less than 3-agree.

- The seventh statement was: “My competence level is such that I can write accurate, appropriate recommendations for the student based on the ALLM I completed.” The average of the total ratings was 3.2, and the majority of the participants scored this at a 3 or 4 level. However, one participant scored this statement at a 2, which represents disagree.

- The last or eighth statement was: “My competence level is such that I can write an informative, useful report containing the relevant data from all the important sections of the ALLM.” The average of the total ratings was 3.4, and no participant scored this statement less than a 3-agree.

The range of average scores for the eight rating scale statements was 3-4. The highest rated item, which received a score of 4 was the question that stated: “I will use these ALLM procedures with students for whom it is appropriate.” The lowest scored

items were six and seven. Both of these related to the participant's level of confidence with the ALLM process after receiving the online modules.

Qualitative information was gathered from open-ended questions on the demographic survey. By analyzing the comments, the participants made for two questions the researcher observed common words or themes. At the end of the demographic survey participants were asked these two open-ended questions. Question 1 asked: What is the most challenging issue you face in getting targeted professional development/training support relating to your job as a TVI? The three main topics mentioned regarding this question from participants were: (a) Cost and time (60%), (b) Availability (30%), and (c) Not Relevant (20%). Specific comments on the most challenging issue for accessing targeted professional development were:

> Availability in local area.
>
> The time to participate, especially if it is a conference.
>
> Money to spend on training and time off to go.
>
> I am the only TVI employed by my district.
>
> Availability of options that are applicable to me as a TVI; My county has a lot of professional development for the general education teachers and even special education teachers, but it mostly general information and is not vision specific.
>
> Often the training or seminars are more related to Orientation and Mobility than to TVI issues.

The most prevalent comments pertained to cost and time.

Question 2 asked: What is the most challenging issue you face as a novice itinerant TVI when conducting the assessment of learning and literacy media for students with visual and additional disabilities? The prominent topics mentioned regarding this

question were: (a) Tools for Assessment (40%), (b) Knowledge (40%), and (c) Lack of Confidence (20%). Specific comments from both groups of participants included:

> The lack of confidence that I am conducting the assessment as it needs to be done.
>
> Access to valid data collection tools.
>
> Finding the materials to use.
>
> I think the most difficult thing is locating alternative assessments that can be used to evaluate MI-VI or students that are nonverbal.
>
> Organizing appropriate materials to avoid several trips to complete adequate assessment. Things come up during assessment not anticipated that I feel I should address.
>
> As a novice TVI, it has been challenging to provide information and resources to classroom teachers working with my students. Each student's team needs instruction in the specific needs of the VI students and it has been challenging to provide information that all parties understand and can implement without consistent consultation.
>
> If they can't read and do not interact with typical school objects, it is hard to know what to do. There is no set guideline, and the suggestions/ideas I have are not always doable, either because we do not have the materials, or we do not have the time and space. Also, I am not there enough to really know the student, so it's hard to even know where to start and what media to present (or to accurately interpret a student's response to media).

The topics the participants indicated as most challenging fell into the categories of: tools and knowledge. The four online modules provided knowledge, practice, and application of a variety of useful tools for completing the ALLM with students with multiple disabilities including visual impairments. After reading these comments the researcher felt some validation regarding the research questions, module content, and presentation method.

Interpretation of the Results

This study involved the online training of novice TVIs to improve their knowledge and quality of ALLM reports for students with visual impairments and multiple disabilities. The primary research question was: Does online professional development increase novice itinerant TVIs' efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? Table 6 showed the percentage scores from both groups of participants on the required pre- and post-submissions. The control group showed an average of 5% growth from pre- to post-knowledge questionnaire scores. The intervention group demonstrated an average of 18% growth from pre- to post-knowledge questionnaire scores. The control group showed a negative average of -10% from pre-ALLM report to post-ALLM report. Overall the four intervention group participants that completed the post-ALLM reports showed an average of 30% growth. An analysis of these data suggested that the intervention group received benefit from the four online professional development modules. The scores from the intervention group's submissions increased from pre- to post-study on both the knowledge questionnaires and the ALLM reports. These higher scores seem to support a positive yes to answer the first two sub-questions related to an increase in knowledge of best practices for conducting the ALLM (practice) and an increase in the quality of ALLM written reports (application) for students with multiple disabilities including visual impairments.

Intervention participants demonstrated growth in knowing the additional considerations necessary for conducting an ALLM with students with multiple

disabilities. Eight out of the 10 participants in the study had no difficulty determining the primary and secondary sensory channel after reading a scenario and observation notes about one student with multiple disabilities including visual impairments. One intervention group participant had a post-knowledge questionnaire percentage correct score of more than 80% and one had a 79%. Two intervention participants scored more than 80% on the post-ALLM reports as scored by the rubric. Intervention participants 7 and 1 demonstrated the lowest growth on all pre- and post-intervention submissions. Both of these participants reported no veteran teacher support and caseloads that covered rural areas. One participant graduated in 2012 (4 years of experience) and the other graduated in 2015 (2 years of experience). At this point, the researcher feels confident in the intervention participants' abilities to look at data from the ALLM and write appropriate recommendations and recognize the importance of conducting this assessment with all students on their caseloads. The researcher did not see as much growth with some of the intervention participants (more than 80%) and would recommend follow-up to reinforce information in the weaker areas. The researcher was surprised to see the change scores for the control group to go down in into negative percentages for the pre- and post-ALLM reports, however, this adds credence and value to the intervention modules.

The data collected from the Acceptability Rating Scales conveyed the intervention participants perceived the four modules to be of value. These data refer to Question C: Does participation in an online professional development result in participants' positive perceptions of the value of the intervention to self and to other TVIs? (social validity).

Additionally, the information from the demographic survey open-ended questions expressed the key areas of concern for the participants. These areas were: lack of confidence, tools for assessment, knowledge of how to conduct an ALLM with students with multiple disabilities including visual impairments, availability, cost and time, and relevance of the general professional development offered. These six topics and their relationship to the literature reviewed are discussed in more depth in Chapter Five.

Limitations of This Study

The first limitation of this study was the small sample size of participants. In the low incidence field of teaching students with visual impairments it was difficult recruiting the anticipated 15-20 participants. Once the study began, the participant number was eleven. As the study progressed, participant nine dropped out due to moving to a different state. This participant completed the pre-intervention information only. Participant 10 did not submit the post-intervention ALLM report also due to family needs. The small sample size influenced the robustness of this study as an indicator for the impact of the intervention. The sample size was also small due to the researcher's desire to limit participants to those with specific unique characteristics. When using a quantitative research design, the small sample size and the lack of random assignment to the control or intervention group diminishes the opportunity for generalizations about all novice itinerant TVIs. The small sample size allowed the researcher to discuss observations and impressions based on the data, but not cause and effect.

The second limitation of this study was including two participants with more than the original one to three years of teaching experience. One participant had four years of

experience as a TVI and another had 5 years of experience. By allowing these two participants into the study the initial criteria for selection was violated. The researcher made this decision because it allowed for more participants. Additionally, based on the search of literature on the definition of a veteran teacher, the researcher found the range of years of teaching considered as "experienced" or "veteran" was revealed as anywhere from 8-25 years of teaching (Edwards, 2003; Teitelbaum, 2008).

The third limitation of this study was the use of purposive sampling instead of probability (random) selection. Probability sampling finds the population relating to the research questions and then randomly assigns them to the individual participant group. It does not use any prior information to determine which participant goes into the control or intervention group. The researcher used purposive sampling because of the criteria for participation in the study. For the purposive sampling, information gathered from the demographic survey was used to assign participants to the control and intervention groups. The researcher chose purposive sampling because the study was focused on a specific group within the field of teachers of students with visual impairments that shared similar experiences and expertise.

A fourth limitation was the time factor involved in data collection and the possibility of participants in both groups to review, discuss, or learn more about the ALLM outside of the study. From the time of the first submissions until the completion of the acceptability rating scale was 3 months. The experiences of the participants could not be completely controlled. The researcher made every effort to keep the study progressing in a timely manner and avoid longer time spans between submissions of the

post-intervention materials. Overall, the study lasted approximately five months and required several email reminders for submissions. One possible contributor to the longer time frame could be that it was conducted in the spring months, a time when the participants were finishing the school year.

The last limitation was the researcher created modules focused on one specific assessment completed by TVIs. The modules were limited to a specific student population and were not inclusive of all of the skills needed for conducting an ALLM with all students with visual impairments. The study modules had a narrow focus on the ALLM as it applied to students with multiple disabilities including visual impairments and did not generalize to conducting other specialized assessments by TVIs.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

Introduction

The purpose of this study was to examine impact of online professional development on the assessment efficacy of novice itinerant TVIs. Efficacy in this study was defined as the competence level teachers hold about their ability to complete assessments and teach their students (Hoy & Spero, 2005; Ruble et al., 2011). Many novice teachers (first through third year) exit their teacher training program and their first job is an itinerant teaching position. Itinerant teachers travel between schools and districts and provide specialized instruction for a caseload of students. A thorough review of the literature on novice teacher efficacy strongly supported a connection between professional development, available support, and novice teachers' degree of teacher efficacy (Billingsley et al., 2009; Dignan, 2015; White & Mason, 2006). As discussed in Chapter 2, the limited research available on the topic of novice itinerant TVIs, targeted professional development, and strategies that support and benefit these novice teachers was the impetus behind this study.

The literature review suggested that novice itinerant TVIs lack opportunities for professional development that is specific to their field of special education and often have limited to no access to a veteran TVI (Griffin-Shirley et al., 2004; Seitz, 1994; Williams et al., 2010). Billingsley et al. (2009) reinforced the importance of targeted professional development and stated: "these experiences (i.e., content specific to their field of

teaching) were perceived as more helpful than generic efforts aimed at professional development of all beginning teachers" (p. 28). Professional development specific (targeted) to the needs of TVIs provided by a veteran TVI became a key component of the study.

Lueck et al. (2011) suggested that visual impairment commonly co-occurs with other disabilities and students with multiple disabilities including visual impairment. Students with multiple disabilities including visual impairment have vision loss and additional characteristics that impact access to the educational environment, for example, limited verbal skills, behavioral issues, cognitive impairments, physical disabilities, and be medically fragile. The presence of multiple disabilities may further complicate assessment processes for novice itinerant TVIs

Significant persons in these students' lives often assume that literacy instruction may not be appropriate or successful (Koppenhaver et al., 2007; Wormsley, 2004. Browder et al. (2011) expanded on the reasons why students with multiple disabilities receive poor literacy interventions, they were: limited research on teaching literacy, lack of targeted professional development, and teachers' difficulty preparing appropriate assessments and interpreting students' responses. One specialized assessment required for all TVIs is the ALLM, which is used to determine the most appropriate learning and literacy media for students with multiple disabilities including visual impairments. Heller et al. (1998) acknowledged that completing an ALLM and writing recommendations based on the data collected can be challenging and intimidating.

Additionally, the IDEA of 1997 required that all students with disabilities have access and opportunity to participate in the general curriculum and assessments (Baker et al., 2010). For these reasons, the researcher chose the ALLM process as the focus of the four online professional development modules. The researcher's focus on the ALLM for the online professional development was based on the requirements of IDEA of 1997, and the training needs of novice itinerant TVIs when assessing students with multiple disabilities. Using the ALLM process provides data for TVIs to determine the most appropriate learning media for the students on their caseload and to guide IEP team's decisions.

The primary research question was formulated after the literature review and careful consideration of the needs of novice TVIs. The main question was: Does online targeted professional development increase novice itinerant TVIs' efficacy for assessing learning and literacy media for students with multiple disabilities including visual impairments? This main question was organized into three sub-questions directed at components that fit the quantitative framework of this study (practice, application, and social validity). The three sub-questions were:

1. Does online professional development increase novice itinerant TVIs' knowledge of best practices for conducting an assessment of learning and literacy media for students with multiple disabilities including visual impairments?

2. Does online professional development improve the quality of the assessment reports written by novice itinerant TVIs?

3. Does participation in an online professional development result in participant's positive perceptions of the value of the intervention to self and to other TVIs?

To explore these questions, the researcher chose a pre-test post-test quasi-experimental research design (Ary et al., 2010; T. D. Cook & Campbell, 1979; Mertens, 2010). The study participants were divided through purposeful assignment to two groups: the intervention group (those who were provided access to the online modules) and the control group. The control group did not receive access to the targeted online modules. This research study incorporated three data collection techniques (knowledge questionnaires, ALLM reports, and the acceptability rating scale) as a means of increasing the internal validity through triangulation (Merriam, 2009). An overview of the assumptions, data collection techniques, and analysis strategies designed for this research study are found in Appendix A. After the study overview was completed, the researcher combined the study into four phases. The four phases discussed below provided the organization for the collection of data, and they were:

Phase One: Review of Pre-ALLM and Pre-Knowledge Questionnaires

The first phase of the study was: both groups submitted an ALLM report completed prior to the start of the study and both groups completed the pre-knowledge questionnaire focused on the ALLM. The pre-ALLM was collected before the participants took the pre-knowledge questionnaire to restrict participants from changing their report based on the information they may have learned from the questionnaire.

Phase Two: Completion of Online Modules

The intervention group was given access to and completed the four online modules. Each module contained approximately 26 slides narrated by the researcher. Each module had three self-check questions that the participants had to answer correctly

before progressing to the next slide or module. Blank forms, completed forms, and other templates were provided in a hard-copy binder for each intervention group participant. The manual is pictured in Appendix K. The manual accompanied the activities that were discussed in each module.

Phase Three: Review of Post-ALLM Reports and Knowledge Questionnaires

Both groups sent in post-ALLM reports and completed the post-knowledge questionnaire. The post-ALLM reports were assessments that were conducted and written by the participants after the study began.

Phase Four: Completion of the Acceptability Rating Scale

The intervention group rated the modules/intervention on a researcher created Acceptability Rating Scale. The Acceptability Rating Scale contained eight statements that the participants rated using a range of 1-4 or strongly disagree to strongly agree.

Review of Theoretical Framework

This study was guided by Gilbert's theory of human performance (Cicerone et al., 2005; Gilbert, 1978; Sommers, 2003) as the theoretical framework. Gilbert's theory focuses on human performance, first by finding deficiencies in practice and then providing training to remediate those deficiencies. Gilbert's theory was appropriate to the research question, sub-questions, and the data collected for the examination of the impact of additional training on assessment efficacy. The material presented in the online modules was written in incremental steps, which built on information and strategies for conducting the ALLM as the modules progressed. Gilbert presents five steps to progressive learning and this study followed those steps when the researcher developed

and presented the four online professional development modules (Cicerone et al., 2005). Below are the five steps and how they applied to the research questions, module development, and data analysis.

1. Why the skill has to be learned: It is a requirement of the TVIs' job to complete specialized assessments with all the students on their caseload including students with multiple disabilities and visual impairments. One of these specialized assessments is the ALLM and the ALLM was the topic of the online professional development.

2. Teach prerequisites: The first module was a general review of the meaning and reasoning behind the importance of conducting the ALLM with all students.

3. Teach what is needed to perform the skill: The next two modules presented useful forms and reviewed in detail the integral parts of conducting a comprehensive ALLM and writing an appropriate results report.

4. Teach the skills to mastery: The third and fourth modules incorporated video clips with the forms and provided practice using the forms with discussion and input from the researcher. Each module contained several quizzes to check whether or not participants grasped the information presented. The participants did not have access to the next module until all the quizzes were answered correctly.

5. Provide practice and application of the learned skill (Mager, 1978): The intervention group practiced using the forms and the application of data into a report. They had hard copy examples of completed forms and an ALLM template in the manual (see Appendix J).

Synthesis of Findings

When synthesizing the findings of this research study, the researcher examined pre- and post-submissions and the change scores that were generated through two dependent and two independent *t* tests. All participants submitted an ALLM report that was completed before the study began and completed the pre-knowledge questionnaire. After the intervention group completed the online modules, both groups submitted the

post-ALLM report and post-knowledge questionnaire. Next, are the findings divided into the four phases developed for this study.

Phase One

Pogrund and Cowan (2013) found a link between the challenges of being a novice TVI, limited access to professional development and the resulting TVIs' low sense of efficacy. Novice TVIs experience a lack of efficacy when it comes to completing the specialized assessments, which are an important part of their job. As a consequence of novice TVIs feeling a lack of efficacy, students with multiple disabilities including visual impairments may risk being underserved and miss appropriate opportunities to access educational activities (McKenzie, 2009). If TVIs do not have confidence and knowledge to complete an ALLM for students with multiple disabilities and visual impairments, these students may not receive access to appropriate instruction. The importance of access to appropriate instruction in the students' effective learning and literacy media can impact quality of life, increase participation in the classroom, and increase communication skills (Ruppar et al., 2011).

Phase Two

The intervention group received an online link to the four modules. Once one module was completed, they would move on to the next module. Each module had several short check questions that the participants had to answer correctly before moving on. The participants were also sent a hard copy manual (Appendix K) that contained forms for use during the modules, completed examples, and additional helpful information. The range of time it took the five participants to complete each the

approximately 26 slides in each module ranged from 13-15 minutes. One participant completed them in an average of 6-8 minutes and, although the time was quite a bit shorter, this participant scored perfectly on all the short check and final check questions. The participant who took the longest time period completing each module missed two of the final check questions. The demographic survey indicated that both these participants had two years' experience. Interestingly, the participant with the shortest time and perfect score graduated from a face-to-face teacher training program and the participant with the longest time and missed two final questions graduated from an online/distance education teacher training program. The intervention group participants showed the most growth on the question, which asked about what additional considerations are necessary when testing a student with multiple disabilities including visual impairment (Module 2). They showed the least growth on the question, which asked them what were the seven critical components of an ALLM report (Modules 3 & 4). After review of the modules and participants' responses, the researcher determined module three contained too much information and should be split into two modules. Module three was the module that presented the majority of the forms and strategies to complete the forms. The area of completing and reporting on forms seemed to be one that was least applied to the post-ALLM report.

Phase Three

The change in scores between the pre- and post-knowledge questionnaires for the control group was not significant and actually went down. The change in scores between the pre- and post-ALLM for the control group was not significant. The control group's

average on both pre- and post-scores was the 56th percentile. The control group did not have access to the intervention training modules. These results reinforce the researcher's assumption that participants with no access to the online disability specific professional development would demonstrate little to no growth. The control group showed a small point growth between the pre- and post-knowledge questionnaire scores and a negative point decline between the pre- and post-ALLM report score.

The change in scores between the pre- and post-knowledge questionnaires for the intervention group was significant. The change in scores between the pre- and post-ALLM for the intervention group was also significant. The intervention group's average on both pre- and post-scores was the 65th percentile. The intervention group demonstrated a greater point growth between pre- and post-knowledge questionnaire scores and the pre- and post-ALLM report scores. The findings of the data from the intervention group suggested that the intervention had a positive effect on the post-activities submitted by this group. The intervention group demonstrated far greater pre- and post-module scores on the ALLM reports and this reinforces the researcher's assumption that the professional development would benefit novice TVIs. The intervention group had one participant drop out after the pre-submission phase and another participant who did not submit a post-ALLM report. The sample size for statistical analysis of the intervention group was reduced to four. Therefore, this small participant size does not lend itself to making generalizations about the usefulness of the online training modules to other TVIs.

Phase Four

After the overall examination of the acceptability rating scale results the intervention participants indicated ratings between three (agree) and four (strongly agree). When looking at these higher ratings it appeared the four online professional development modules were useful, increased perceptions of efficacy, and worth sharing with other TVIs. One participant (7) rated the statement: "My competence level is such that I can write an informative, useful report containing the relevant data from all the important sections of the ALLM" a two (disagree). This participant was a 2015 graduate with no available veteran TVI support. Overall, the opinion of the participants supported the online modules and found going through the modules advanced their knowledge and confidence level for conducting and reporting an ALLM. One interesting take away from the end of the research study was that this participant reached out to the researcher with caseload questions. No information was exchanged at that time; however, the researcher suggested a discussion with this participant after the research study was completed. To the researcher this appeared to strengthen the need for more strategies that provide support to isolated novice itinerant TVIs.

Online Delivery

Online delivery of the targeted professional development provided access to novice itinerant TVIs in more isolated areas (Beach, 2017; Berry et al., 2011; Desimone et al., 2002; Fishman et al., 2013; Redmond, 2015; Vrasidas & Zembylas, 2004). With no travel time or costs involved, the online professional development was affordable and

accessible at any time of the day (Hanney & Newvine, 2006). The online delivery met the needs expressed by the participants as discussed in the next section.

Findings from two open-ended questions on the demographic survey reinforced what the literature revealed regarding need, access, One question asked: What is the most challenging issue you face in getting targeted professional development/training support relating to your job as a TVI? For this question, the responses fell into three categories: not relevant, time and cost, and availability. The most prevalent comments pertained to cost and time. By providing the professional development modules online and at no cost, the issues of cost and time were diminished.

The second question asked was: What is the most challenging issue you face as a novice itinerant TVI when conducting the learning and literacy media assessment for students with visual and additional disabilities? The responses fell into three categories: knowledge, lack of confidence, and tools. The topics the participants indicated as most challenging fell into the categories of: tools and knowledge. The four online modules provided knowledge, practice, and application of a variety of useful tools for completing the ALLM with students with multiple disabilities including visual impairments. After reading these comments the researcher felt some validation regarding the research questions, module content, and presentation method.

Situated in the Larger Context

Gilbert's Theory of Human Performance provided the structural framework for this study (Cicerone et al., 2005; Gilbert, 1978; Sommers, 2003). Gilbert's theory was used in analyzing performance outcomes of behaviors rather than the behavior itself

(Mager, 1978). When determining the effectiveness of professional development in any field, a positive change in outcomes after intervention is the desired outcome. Gilbert's five steps proved to be an applicable and concrete process for evaluating educational interventions. Gilbert's theory focused on human performance and the outcome of targeted training on human performance. The resulting change scores on the pre- and post-scores for the knowledge questionnaire and the ALLM reports suggested performance was increased for the intervention group after receiving the targeted professional development.

Relation to Literature Review

The literature related specifically to novice teachers of students with multiple disabilities including visual impairments was limited. Vikaraman, Mansor, & Hamzah (2017) shared that novice teachers in general feel a sense of isolation during the first years and value support. Professional development is a means of improving novice teacher's practice and efficacy. However, the greater amount of literature focused on special education teachers, expressed support for professional development on topics that applied to specific areas of special education during novice teachers' first years (Billingsley, 2010; Carlson et al., 2002; McKenzie, 2007; Sindelar et al., 2010). Borko (2004) posited that professional development specific to a special educator's field of study would increase knowledge; improve practice, and lead to improved student outcomes. Billingsley et al. (2009) and White and Mason (2006) indicated there exists a connection between professional development and support for novice teachers and these teachers' efficacy.

The added value to the field of education of students with visual impairments and to novice itinerant TVIs was the four online modules used in this study that were developed and guided by a veteran TVI. The modules covered specifics on how to conduct an ALLM with students with multiple disabilities including visual impairments as indicated in Appendix I. Additionally, the online modules were accompanied by a manual of accompanying templates, blank forms, and sample completed forms as seen in Appendix K. The online modules and hard copy manual included self-paced learning with short self-checks that did not let the participant progress until the questions were answered correctly. If the participant answered incorrectly, the self-check format provided a review of the material and then another chance to register the correct answer. The resulting manual may be used as a guide for mentors, instructional coaches, supervisors, special education directors, and educational agencies for the creation of targeted professional development that is easily accessible for novice itinerant TVIs.

The literature review yielded a lack of current information related to the job, needs, and support of novice itinerant TVIs. An example given in Chapter 2 was Seitz's (1994) study that spoke specifically to the difficulties experienced by novice itinerant TVIs, but that study is now more than 20 years old. When examining the other research contained in the literature review it was apparent that the majority was 5 to 10 years old. The researcher designed this study to contribute current data to the field of teaching students with visual impairments and data that specifically addressed the needs of novice itinerant TVIs.

Additionally, this research addressed the need for more experimental research focused on teacher development and the impact of online professional development (Browder et al., 2012; B. G. Cook & Cook, 2011; Fishman et al., 2013; Kubitsky et al., 2012; Sindelar et al., 2010). The literature for this research topic called for more quantitative research and the effects of online professional development (Fishman et al., 2013). The data generated through the two dependent and two independent *t* tests provided, although limited and from a small sample size, evidence useful for the development of future targeted professional development via online delivery.

Implications of the Results

It is the researcher's opinion that the online professional development on a skill specific to the field of visual impairments looks as if it provided benefit for the novice TVI participants, but this is an opinion based on the small study outcomes and cannot be generalized to the larger population of TVIs. The need for more targeted professional development appeared to be indicated through the noted growth in scores and from the comments from two intervention group participants. The first participant was a 2015 graduate who had indicated no access to veteran TVIs, and the difference between pre- and post-ALLM report scores was a 14-point growth.

> First comment: "I just got my binder in the mail! Looking forward to this because it's an area I need a lot of help with."
>
> Second comment: "I could do many more of these modules."

The second participant was a 2015 graduate who also indicated no access to veteran TVIs. However, this participant did not submit the post-ALLM report so no

change was assessed. The comment this participant submitted was: “I am glad I completed your modules—they were very helpful.”

The implications of this study could apply to the teacher training at the university level, systems of support for novice teachers, and methods of providing professional development to educators and areas where there is limited access. The comments from the demographic survey completed by all the participants appeared to point to six major themes for the challenges facing novice itinerant TVIs. These overall questions asked what the participants thought were the main challenges they faced when conducting the ALLM with students with multiple disabilities including visual impairments and accessing relevant professional development. The six themes were: cost and time, availability, not relevant topics, knowledge and tools for conducting the ALLM, and a lack of confidence (efficacy).

Recommendations

Establishing a System of Support

Griffin-Shirley et al. (2004) discussed the need to bridge the gap from theory to practice and that practicing teachers need opportunities for targeted professional development. The university teacher training programs address the basic level of skills and knowledge for novice TVIs; however, the opportunities to practice theses skills are limited and can be enhanced through professional development (Rostan, 2009; Scheeler, 2007). The recommendations for pre-service programs are to incorporate additional practice on the application of skills specific to the job of an itinerant TVI. Also, it may be important for teacher trainers to emphasize with pre-service teachers the importance of

using developed forms and strategies to make data driven decisions regarding the most effective learning and literacy media for students with multiple disabilities including visual impairments (Holbrook, 2009).

Induction Support

After a review of special education literature related to induction, Billingsley et al. (2009), reported this comment from a novice special education teacher, "I felt like I had learned most of the stuff in college, but all of it didn't quite stick. It was stuff that I knew I had learned, but I didn't remember or know exactly how to apply it in my particular situation" (p. 7). During the induction phase, novice teachers are influenced by their experiences (Mulholland & Wallace, 2001; Tschannen-Moran et al., 1998). If these experiences are positive and address the challenges that novice teachers face in the beginning of their career they may develop increased efficacy (Billingsley et al., 2004; Griffin-Shirley et al., 2004; Veenman, 1984; Whitaker, 2001).

Targeted professional development on the specialized responsibilities of a novice itinerant TVI may be a viable mode of providing additional practice of specialized skills including assessment procedures and enhance teacher efficacy (Ross & Bruce, 2007). When novice teachers have an increased perception of efficacy, they feel more confident about their ability to positively impact student learning. Overwhelmingly the literature (Berry et al., 2011; Billingsley et al., 2009; Carlson et al., 2002; Piwowar et al., 2013; Sindelar et al., 2010) suggested that support and targeted professional development for novice special education teachers impacts their desire to stay in their field of specialty.

The comments from all the participants on the demographic survey and acceptability rating scale indicated novice TVIs need support past the university teacher training to do well in their jobs. Building additional online professional development systems of support increases access for geographical dispersed novice itinerant TVIs (Hanney & Newvine, 2006). Districts could use these four modules and the manual to provide specific coaching for novice itinerant TVIs working in their districts or counties. The researcher recommends additional systems of support through the use of online email, or visual consultation for novice itinerant TVIs. Administrators, mentors, and coaches can use these research materials as a springboard to effectively support novice TVIs. The researcher recommends following adult learning strategies when using this module and manual model for creating additional systems of support and targeted professional development opportunities.

The Module Format

These modules did not teach to the mastery level of completing all specialized assessments, but provided an efficient means of increasing assessment efficacy for completing the ALLM for students with multiple disabilities including visual impairments. The modules provided the rationale, useful tools and forms, and templates that covered conducting the ALLM and writing a meaningful, data driven report. The modules and manual also provided critical information on how to align the ALLM results with recommendations for the student. This was evident from the acceptability rating scale results, which were overwhelmingly positive in the agree and strongly agree categories. This is important because it seemed to support the social validity of the

intervention. These modules could be expanded upon to include more specific skill building focused on topics of importance to novice TVIs leading to increased efficacy. Basically the modules were framed around a specific practice to improve TVIs knowledge and skills, but additional systems of support are needed. Just developing more targeted professional trainings is not enough, but the means of collecting follow-up data and providing timely feedback after the trainings is a critical component of any professional training. The ability to provide follow up and on-going training opportunities could increase the efficacy of teacher practices and support the growth of teacher efficacy. Follow up data collection could provide information leading to adjusting the content as new research and methods are developed. Follow up would also provide valuable information as to whether the targeted professional development was effective, well received, and deemed valuable for novice TVIs.

Veteran Teacher Access and Support

Another implication from the demographic survey information was the need for access to veteran TVIs. Although this research study provided a positive model for online professional development there is still a need to incorporate access to veteran teachers and coaches. Novice TVIs especially in rural itinerant positions are often isolated and need support from teachers who are familiar with their area of specialty (Beach, 2017; Berry et al., 2011; Billingsley et al., 2004; Moir, 1999; Redmond, 2015). Novice itinerant TVIs experience a wide variety of student needs and student ages on their caseloads (Pogrund & Wibbenmeyer, 2008, Seitz, 1994). One idea to address these concerns would be to create access to veteran TVIs through online, text, or email interaction. Exploring

creative options to connect a veteran TVI from a distant area to a novice TVI are worth more research. As mentioned earlier, the researcher experienced this need for connection from one of the study participants. Coaches, special education administrators, and veteran teachers may use this online model for professional development modules with short check questions, and the hard copy manual to guide and develop systems of support for novice itinerant TVIs.

Future Research

Future research that would build on this study would be examining the change scores between participants that graduated from a face-to-face university teacher program versus those that graduated from an online/distance learning program. Another factor to look at would be the how the lack of targeted professional development impacts TVIs in an urban setting versus those in a rural setting. Focusing research specifically on the components of the modules and examining the areas that appeared to be weaker or limited in scope. Data from the use of the online module professional development format with pre-service teachers and teachers during the induction years would be useful to identify areas of teacher training weaknesses and strengths.

An article published in 2009 by Rock, Gregg, Gable, and Zigmond addressed the idea of virtual coaching. They put forth the “bug-in-ear” coaching method. This method allowed a veteran teacher to observe a novice teacher using a web-cam and talk to the novice teacher through a Bluetooth© bug in the ear. For novice TVIs in rural or remote areas this could be a valuable means of virtually helping them through assessments in a

step-by-step manner. The researcher considers this use of technology as an idea that may be one way to provide training and support for novice TVIs.

Although, current TVI teacher training programs are limited in the United States, this study had participants from the Northwest, Southwest, Midwest, and southeast; however, the *n* size was very small. It is suggested that future research involve the northeast area along with the areas represented in this study and contain a greater number of participants. In the implications section it was suggested that the materials be used with coaches and special education administrators. It would be important to address their impressions of the modules and manual and gather input regarding effectiveness and usability. University researchers, district coaches and special education administrators could examine the current number and quality of ALLM completed on students with multiple disabilities to the number completed after the targeted professional development. This would provide valuable information on the value of targeted professional development for novice TVIs.

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APPENDIX A

CONSENT TO BE A TVI PARTICIPANT

CONSENT TO BE A TVI PARTICIPANT

Name:

You are being asked to participate in a research study to investigate the impact of online professional development on the teaching efficacy of novice itinerant teachers of the visually impaired (TVI) as it relates to literacy and learning media assessments. For the purposes of this study "teaching efficacy" refers to teachers' beliefs of their teaching capability and competence to influence their students' outcomes.

Jacqulyn Daniels, a doctoral candidate at Portland State University is conducting this research study for her dissertation.

The online professional development focuses on the Assessment of Learning and Literacy Media (ALLM) with students with multiple disabilities plus visual impairment (MD+VI). This research study draws on the results of pre- and post-intervention (online professional development) knowledge surveys and submitted written reports.

Procedures:

(1) You will be asked to submit ***ONE*** previously completed Assessment of Learning and Literacy Media with all student, classroom, age, and school's information deleted.

(2) You will be asked to complete a pre-intervention online knowledge survey regarding the Assessment of Learning and Literacy Media consisting of 10 open-ended questions.

(3) You will be assigned as a participant in either the Intervention or Control Group.

(4) You will be asked to participate in four 15-20 minute professional development online modules provided on the topic of conducting an Assessment of Learning and Literacy Media for students with multiple disabilities including visual impairment and writing of the results report.

(5) You will be asked to complete a post-intervention online knowledge survey consisting of 10 open-ended questions.

(6) After the online professional development, you will be asked to submit ***ONE*** more Assessment of Learning and Literacy Media completed after the online modules are completed.

(7) All participants will be asked to complete an Acceptability Rating Scale regarding the online professional development.

(8) The anticipated amount of participants' time expenditure is approximately 8 hours from the beginning to the end of the research study.

Risks/Discomforts

There are minimal risks for participation in the research study. Risks may include the amount of time the participant spends completing the research components, discomfort that may arise while completing the research components, and possible breach of confidentiality.

Potential Benefits

As a potential benefit it is hoped that the participants' submitted information will help the researcher learn more about the impact of targeted professional development opportunities on the teaching efficacy of novice itinerant Teachers of Students with Visual Impairments (TVI). This study may encourage the development of additional professional development sessions easily accessible to itinerant teachers. The participants' may develop increased knowledge of the Assessment of Learning and Literacy Media for students with visual and additional disabilities, which may contribute to these students' increased access to appropriate educational materials and instruction. There is no cost to you for participation in this research study.

Confidentiality

All information provided will remain confidential and will only be reported as data with no identifying information. Your data and identifying information will be coded and the key to the code will be kept in a password protected secure file on my laptop. All data, including questionnaires will be kept in a password protected secure file on my laptop and only accessed through a secure Internet connection such as: VPN. After the research is completed, the questionnaires will be destroyed.

Compensation

Participants will receive a gift card that can be used nationwide or online. The compensation will be sent out once all the documents have been submitted to the researcher.

Participation

Participation in this research study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without any negative consequences. Your participation will have no effect on your professional reputation because your identity will be coded. You will be provided a copy of this consent form for your records.

Questions About the Research

If you have questions regarding this research study, you may contact:

Jacqulyn (Jacki) Daniels
602-677-1071
noviceTVIstudy@gmail.com

Questions about your rights as a participant in this research may be directed to the:

PSU Institutional Review Board
Office of Research Integrity
1600 SW 4th Ave., Market Center Building, Ste. 620
Portland, OR 97201
(503) 725-2227 or 1 (877) 480-4400

PLEASE READ THE FOLLOWING TWO STATEMENTS, INITIAL EACH ONE, AND SIGN BELOW:

_____ (initial here) I have read, understood, and received a copy of the above consent form. I have had the opportunity to ask questions and my questions have been answered satisfactorily. I agree and desire of my own free will and volition to participate in this research study.

_____ (initial here) I agree to allow all documents I submit to be used as data for this research study.

Participant's Printed Name:_____

Participant's Signature:_____

Date:_____

Email:_____

APPENDIX B

PARENTAL PERMISSION FORMS

1B: PARENTAL PERMISSION FORM FOR CHILD'S RESEARCH PARTICIPATION

First ALLM Report–Pre-Study

Study Title: *The Impact of Professional Development on the Assessment Efficacy of Novice Itinerant Teachers of Students with Visual Impairments*

Hello! My name is Jacki Daniels and I am a doctoral student in special education at Portland State University. I am a career teacher of students with visual impairments (TVI) and as part of my study I am looking at ways to better support new TVIs in their first years of teaching. My research will involve offering new TVIs online training on assessing student learning media needs. Such assessments are critical to making sure that students have access to the best learning tools they are capable of using.

As part of this study, your child's TVI will need to submit an Assessment of Learning and Literacy Media (ALLM) report that they completed before the start of this research. I am asking whether you will give consent to have _____ share your child's report with me. Your child will not participate in the study in any other way.

Results of this study may be used in publications and presentations, however, the results will be discussed as changes in the TVI participants' pre-training and post-training reports. No individual student information, report data, location, or specific assessment information will be used in the final dissertation report nor any publications or presentations.

All information generated for this study will be kept confidential. Participating children will be given pseudonyms in the report write-ups. Electronic reports will be kept in password-protected file on my hard drive and any paper reports will be kept in a locked file box. A breach of confidentiality is a risk in every study. Your child's participation is voluntary. You or your child may withdraw from this study at any time and it will not affect the relationship with the TVI, classroom teacher, or Portland State University.

If you have questions or concerns about your child's participation in this study, contact Jacqulyn (Jacki) Daniels at 602-677-1071 or email: noviceTVIstudy@gmail.com. If you have concerns about your child's rights as a research subject, please contact the PSU Office of Research Integrity, 1600 SW 4th Ave., Market Center Building Ste. 620, Portland State University, (503) 725-2227 or 1 (877) 480-4400.

Your signature indicates that you have read and understand the above information and agree to share your child's report with the Teacher of Students with Visual Impairments (TVI) in this study. I will provide you with a copy of this form for your own records.

_____ _____

Participant Signature **Date**

_____

Participant Printed Name

_____ _____

Investigator Signature **Date**

_____

Investigator Printed Name

2B: PARENTAL PERMISSION FORM FOR CHILD'S RESEARCH PARTICIPATION

Second ALLM Post-Study

Study Title: *The Impact of Professional Development on the Assessment Efficacy of Novice Itinerant Teachers of Students with Visual Impairments*

Hello! My name is Jacki Daniels and I am a doctoral student in special education at Portland State University. I am a career Teacher of Students with Visual Impairments (TVI) and as part of my study I am looking at ways to better support new TVIs in their first years of teaching. My study will involve offering new TVIs advanced online training in assessing their students' learning media needs.

I am asking that you allow your child's TVI, _____, to conduct an Assessment of Learning and Literacy Media (ALLM) with your child and share the resulting report with me. This is an assessment that is a part of all TVIs' job. Your child was selected as a possible participant in this study because your child's TVI has agreed to be a part of this study.

If you decide to let your child participate, your child's TVI will do 3 different observations, each lasting 20-30 minutes in your child's classroom during the regular school day hours. This assessment is a regular part of your TVI's job and provides valuable information about how your child best participates in school and daily life activities. Examples of activities for this assessment are:

- ★ Observing your child during classroom activities involving pictures, sounds, textures, toys, demonstrations,
- ★ Taking notes to document if your child prefers auditory, tactile, or visual information,
- ★ Observing the best positioning for your child to notice objects, pictures, or print, and
- ★ Assessing the size of objects, pictures, or print your child responds to best
- ★ Interviewing IEP team members and families/caregivers
- ★ Reviewing student records

Based on the results of these activities and observations, your TVI will write a report and make recommendations that are specific to your child. The report will be sent to me as part of the study for educational purposes only. There will be no videotaping or recording involved in conducting the assessment.

All information generated for this study will be kept confidential. Participating children will be given pseudonyms in the report write-ups. Electronic reports will be kept in password-protected file on my hard drive and any paper reports will be kept in a locked file box. Loss of confidentiality is a risk in every study. You and your child's participation is voluntary, you may withdraw from this study at any time and it will not affect the relationship with the TVI, classroom teacher, or Portland State University.

Results of this study may be used in publications and presentations; however, the results will be discussed as changes in the TVI participant's pre-training and post-training reports. No individual student information, report data, location, or specific assessment information will be used in the final dissertation report nor any publications or presentations.

Your child may not receive any direct benefit from participating in this assessment, but the study may help to increase knowledge that could help others in the future. The resulting assessment will be shared with you and may contain valuable information about your child's learning.

If you have questions or concerns about your child's participation in this study, contact Jacqulyn (Jacki) Daniels at 602-677-1071 or email: noviceTVIstudy@gmail.com. If you have concerns about your child's rights as a research subject, please contact the PSU Office of Research Integrity, 1600 SW 4th Ave., Market Center Building Ste. 620, Portland State University, (503) 725-2227 or 1 (877) 480-4400.

Your signature indicates that you have read and understand the above information and agree to let your child take part in this study. I will provide you with a copy of this form for your own records.

_____ _____

Participant Signature **Date**

_____

Participant Printed Name

_____ _____

Investigator Signature **Date**

_____

Investigator Printed Name

HOW TO USE DOCU-SIGN

FOR THE RESEARCHER:

1. Upload your documents
2. Add who needs to sign: names and email addresses of signers
3. Use DocuSign tags to indicate where you need a signature, initial, or dates. Click Send and DocuSign will email a link to recipients where they can access the document.
4. The document is saved automatically and stored securely for easy access.
5. Once completed, both senders and signers can access the documents to read, download, and print as needed.

FOR THE PARTICIPANTS (TVIs AND PARENTS):

1. Click the link in email
2. Follow the DocuSign tabs–the tabs and simple instructions guide the signer through the signing process, even adopting an electronic signature.
3. Your electronic signatures are 100% secure and legal.
4. Click Finish, and you're done

APPENDIX C

RECRUITMENT

RECRUITMENT LETTER

My name is Jacqulyn (Jacki) Daniels and I am a doctoral candidate at the Graduate School of Education at Portland State University. I am inviting you to participate in my research study about the impact of an online professional development intervention on novice itinerant Teachers of Students with Visual Impairments (TVI) teacher efficacy. The focus this study is conducting an Assessment of Learning and Literacy Media (ALLM) for students with visual and additional disabilities and writing high quality results reports. This is a critical skill that is discussed in teacher training, but which most novice TVIs get little practice or additional professional development. You could be eligible to be in this proposed research study if you are a:

- Novice teacher within your 1st–3rd years of teaching students with visual impairments,
- Have no prior teaching experience before becoming a licensed TVI,
- Currently teaching in an itinerant position and,
- Currently have students with visual and additional disabilities on your caseload.

Opportunities to access meaningful professional development for novice itinerant TVIs are rare and costly to attend. All materials and surveys are presented online and accessible from a computer and cell phone. You will be able to complete this professional development in your own home! As a participant in this study you will be asked to complete in four online modules. During the modules we will be working together to complete forms that are a part of the assessment protocol, and discuss how to take the data generated from the assessment and develop it into a cohesive, meaningful, accurate report with appropriate recommendations.

If you meet these criteria and want to increase your knowledge regarding the assessment for learning and literacy needs of students with visual and additional disabilities, I would love to hear from you. Participation is completely voluntary and there is no negative implication for withdrawal from this study at any time. If you would like to learn more about the research study, please contact:

Jacqulyn (Jacki) Daniels

Cell: 602-677-1071

Email: noviceTVIstudy@gmail.com.

APPENDIX D

DEMOGRAPHIC SURVEY

DEMOGRAPHIC SURVEY

Overview

The demographic survey is available on Qualtrix through the Portland State University website. The entire demographic survey is accessible by computer, tablet, and cell phone. Questions in the survey ask about teacher training, length of teaching, caseloads, itinerant teaching, veteran teacher support, and perceptions of competency related to conducting an Assessment of Learning and Literacy Media for students with visual and additional disabilities and writing a results report.

Introduction

Thank you for your interest in the research study. Before you decide to complete the demographic survey you need to know that I (Jacqulyn (Jacki) Daniels) is a doctoral student at Portland State University, Portland, OR. The research study is for the purposes of dissertation research and will be kept confidential. The data collected will only be shared as a part of the final dissertation paper and will be destroyed in accordance with Institutional Review Board protocol.

I am a veteran TVI with over 30 years of teaching experience and the impetus for the research study is finding value-added means of providing support to novice itinerant TVIs. The focus of the research study's online targeted professional development is completing and reporting on an Assessment of Learning and Literacy Media for students with visual and additional disabilities. The study is designed to assess the impact of the online targeted professional development on the teacher efficacy of novice itinerant Teachers of Students with Visual Impairments (TVI).

As the first part of the study, I am asking potential participants to complete the demographic survey. The demographic survey information will be used to secure participants matching the study criteria. Thank you for your interest in this research study and I look forward to your response.

DEMOGRAPHIC SURVEY QUESTIONS

1. What is the date you received your initial licensure as a TVI?

2. Do you have any prior teaching experience before becoming an initial licensed TVI?

   - ○ Yes
   - ○ No

3. How many years have you taught as a TVI?

4. What type of teacher training program did you graduate from?

   - ○ On campus/face-to-face
   - ○ Online/distance
   - ○ Other

5. Was your program a bachelor or master's level?

   - ○ Bachelor's
   - ○ Master's

6. Did you start teaching as a TVI ***prior*** to completion of training and graduation?

   - ○ Yes
   - ○ No

If Yes, how many years?

7. Did you start teaching ***after*** graduation?

   - ○ Yes
   - ○ No

If No, how long was the time period between graduation and your first teaching assignment?

8. Did you complete a learning and literacy media assessment during your teacher preparation program?

- ○ Yes
- ○ No

If yes, how many did you complete?

9. As a practicing teacher, have you completed a learning and literacy media assessment independently in your job?

- ○ Yes
- ○ No

If yes, how many have you completed independently?

10. Would you define yourself as an itinerant TVI? (Itinerant is defined here as a teacher who travels from school to school to provided services to the students on her caseload and is not stationary in one school)

- ○ Yes
- ○ No

If so, is it in a rural or city environment?

- ○ Rural
- ○ City

11. Do you have a veteran TVI for support and/or mentoring?

- ○ Yes
- ○ No

If yes, how much time do you spend with them weekly?

If Yes, do they have their own caseload responsibilities?

12. What is the current availability of professional development that is specifically targeted to your job as a TVI and the field of visual impairments?

    - ○ None available
    - ○ I attend a TVI specific conference 1 time a year
    - ○ 2–4 times a year
    - ○ 5 or more times a year

13. How many students are on your caseload?

14. What percentage of your caseload are students with visual impairments and additional disabilities?

Please rate your perceptions of the statements below

1 = Not Capable & Confident 2 = Somewhat Capable & Confident 3 = Neutral

4 = Very Capable & Confident

	1	2	3	4
1. What is your current level of capability and confidence when asked to complete a learning and literacy media assessment for students with visual and additional disabilities?				
2. What is your current level of capability and confidence in writing a learning and literacy media assessment report for students with visual impairment and additional disabilities?				
3. Rate your currently ability to efficiently write high quality comprehensive reports on the data you gathered from a learning and literacy media assessment for students with visual and additional disabilities?				
4. Rate you current ability to efficiently complete a learning and literacy media assessment for students with visual and additional disabilities?				
5. Rate your confidence as it pertains to yourself as an online learner.				

Please answer the following questions providing as much detail as possible:

1. What is the most challenging issue you face in getting targeted professional development/training support relating to your job as a TVI? Please describe:

2. What is the most challenging issue you face as a novice itinerant TVI when conducting an ALLM for students with multiple disabilities including visual impairments? Please describe:

APPENDIX E

ALLM PRE/POST-KNOWLEDGE QUESTIONNAIRE

ASSESSMENT OF LEARNING AND LITERACY MEDIA (ALLM) PRE/POST KNOWLEDGE QUESTIONNAIRE

1. Describe why an Assessment of Learning and Literacy Media (ALLM) is necessary for students with multiple disabilities including visual impairment?

2. When should the initial ALLM be conducted?

3. What is the recommended number of observations and discrete behaviors noted during each observation when using the sensory channels form?

4. What other sources of information should you consider in addition to the ALLM prior to making recommendations for the student?

5. Briefly discuss the added considerations you need to think about when conducting an assessment for learning and literacy with a student with visual impairments and physical disabilities.

Read the scenario below and answer the questions that follow.

Julie is a 7-year old child with visual impairment and additional physical disabilities. She has a diagnosis of Cortical Visual Impairment with limited tracking ability. Julie uses a wheelchair and has a limited range of hand and arm movement. The arms on Julie's wheelchair slide under the tables. This makes it difficult for Julie to attempt using her hands or arms because they easily fall to her lap under the table. Most of the time her head is turned to the right and she has great difficulty bringing it to midline. Julie will quickly go to sleep when she is not interested in an activity.

This first observation takes place in the music classroom. The teacher is working on songs relating to the upcoming Thanksgiving holiday. Julie has a large 2 paddle yellow and red switch that is programmed with the words "yes (yellow) and no (red)." The teacher is working with Julie and 3 other students all using switches to indicate "yes and no." The procedure the teacher is using is asking each student to make a choice between 2 songs as she shows a 2-inch by 2-inch picture representation. The correct choice is "yes" if the song relates to Thanksgiving. The room has one row of windows on the top of a south facing wall and overhead fluorescent lighting.

Julie's observed behaviors during this one observation are:

1. faced the windows and was light gazing
2. looked at a 2-inch square black and white pictures when presented within 6 inches of her face
3. shifted her gaze very slowly between pictures when presented in a horizontal array
4. smiled and turned to teacher at the beginning notes of each song during the activity
5. when the music started, she hit the yellow 'YES' switch repeatedly
6. when teacher asked her a question and she did not turn and face the teacher
7. when teacher called her by name she then turned her face to the teacher.
8. she can respond verbally with a "Yes" by vocalizing the sound "Ya."
9. hit the yellow 'YES' switch after the teacher prompted her by saying: "Hit the switch to say Yes."
10. turned and looked at the student next to her when other student hit his switch.
11. started light gazing again at the window when teacher worked with other student
12. when her teacher presented a picture in front of Julie and asked a question and then tapped on the picture and Julie did not look at the picture until the tapping started.
13. when another person entered the room it triggered a set of bells, Julie looked toward the door
14. looked down at her switch when the teacher asked another student a question.
15. teacher showed Julie a 2-inch square outline of a lunch tray and milk carton indicating lunch time at a distance of 12 inches, Julie gazed at it and smiled

Please answer the following questions for the scenario above:

6. Based on this one observation what is your first impression regarding Julie's primary sensory channel?

7. Based on this one observation what is your first impression regarding Julie's secondary sensory channel?

8. What is the rationale behind your choice based on this one observation? What 2 preliminary recommendations would you write for this student?

9. What are the seven critical components of a quality, comprehensive ALLM report?

10. Why is it important to observe the student with multiple disabilities including visual impairments during different times of the day?

TOTAL POINTS: 28

APPENDIX F

ALLM PRE/POST-KNOWLEDGE SURVEY ANSWER SECTION

ASSESSMENT OF LEARNING AND LITERACY MEDIA (ALLM) PRE/POST KNOWLEDGE SURVEY ANSWER PAGE

(The pre/post ALLM knowledge survey is on Qualtrics through Portland State University and is accessible from a computer, tablet, and cell phone. Below are the same questions as they appear on Qualtrics).

MODULE 1 FOCUS

1. Describe why an Assessment of Learning and Literacy Media (ALLM) is necessary for students with multiple disabilities including visual impairment? **(3 points)**

Answer---*The ALLM provides an* ***objective evaluation*** *for all students with visual impairments including those with additional disabilities. Students with MD+VI* ***require an ALLM to determine the best learning and literacy media*** *and to* ***document decisions*** *made regarding goals and objectives on the IEP. Decisions driving the appropriate access to educational materials are made using the data gathered from the ALLM.*

2. When should the initial ALLM be conducted? **(2 points)**

Answer---*An initial ALLM is recommended* ***in preschool*** *or at the* ***earliest point after a vision impairment diagnosis.***

MODULE 2 FOCUS

3. What is the recommended number of observations and discrete behaviors noted during each observation when using the sensory channels form? **(1 point)**

Answer---3+ observations with 15 or more discrete behaviors recorded

4. What other sources of information should you consider in addition to the ALLM prior to making recommendations for the student? **(4 points)**

Answer---the functional vision evaluation, teacher interview, parent input, classroom and daily routines

5. Briefly discuss the added assessment for learning and literacy considerations when a student has visual impairments and physical disabilities**. (4 points)**

Answer---*the impact of the* ***physical disabilities on movement*** *and opportunities* ***to interact with the environment, most appropriate positioning for optimum visual attention,*** *environmental conditions such as: lighting, contrast, best viewing distance and direction, other* ***disabilities that may impact vision and physical response,*** *observe* ***body movements and facial expressions****, what modifications or adaptations can be made to make the lesson more effective and interactive.*

Read the scenario below and answer the questions that follow.

Julie is a 7-year old child with visual impairment and additional physical disabilities. She has a diagnosis of Cortical Visual Impairment with limited tracking ability. Julie uses a wheelchair and has a limited range of hand and arm movement. The arms on Julie's wheelchair slide under the tables. This makes it difficult for Julie to attempt using her hands or arms because they easily fall to her lap under the table. Most of the time her head is turned to the right and she has great difficulty bringing it to midline. Julie will quickly go to sleep when she is not interested in an activity.

This first observation takes place in the music classroom. The teacher is working on songs relating to the upcoming Thanksgiving holiday. Julie has a large 2 paddle yellow and red switch that is programmed with the words "yes (yellow) and no (red)." The teacher is working with Julie and 3 other students all using switches to indicate "yes and no." The procedure the teacher is using is asking each student to make a choice between 2 songs as she shows a 2-inch by 2-inch picture representation. The correct choice is "yes" if the song relates to Thanksgiving. The room has one row of windows on the top of a south facing wall and overhead fluorescent lighting

Julie's observed behaviors during this one observation are:

1. faced the windows and was light gazing
2. looked at a 2-inch square black and white pictures when presented within 6 inches of her face
3. shifted her gaze very slowly between pictures when presented in a horizontal array
4. smiled and turned to teacher at the beginning notes of each song during the activity
5. when the music started, she hit the yellow 'YES' switch repeatedly
6. when teacher asked her a question and she did not turn and face the teacher
7. when teacher called her by name she then turned her face to the teacher.
8. she can respond verbally with a "Yes" by vocalizing the sound "Ya."
9. hit the yellow 'YES' switch after the teacher prompted her by saying: "Hit the switch to say Yes."
10. turned and looked at the student next to her when other student hit his switch.
11. started light gazing again at the window when teacher worked with other student

12. when her teacher presented a picture in front of Julie and asked a question and then tapped on the picture and Julie did not look at the picture until the tapping started.

13. when another person entered the room it triggered a set of bells, Julie looked toward the door

14. looked down at her switch when the teacher asked another student a question.

15. teacher showed Julie a 2-inch square outline of a lunch tray and milk carton indicating lunch time at a distance of 12 inches, Julie gazed at it and smiled

Please answer the following questions for the scenario above:

6. Based on this one observation what is your first impression regarding Julie's primary sensory channel? **(1 point) Answer---Visual**

7. Based on this one observation what is your first impression regarding Julie's secondary sensory channel? **(1 point) Answer---Auditory**

8. What is the rationale behind your choice based on this one observation? What **2 preliminary recommendations** would you write for this student? **(2 points)**

MODULE 3 & 4 FOCUS

9. What are the seven critical components of a quality, comprehensive ALLM report? **(7 points)**

Answer---*(1) purpose of the assessment; (2) review of academic/medical records; (3) parent/teacher interviews; (4) review of current functional vision; (5) assessment results from ALLM, sensory channels observations report, general and literacy tools used in the classroom with the student report, (6) summary, and (7) recommendations*

10. Why is it important to observe a student with multiple disabilities including visual impairments during different times of the day? **(3 points)**

Answer---*the TVI is looking to determine the* ***most effective times of day for the student's involvement in learning or literacy activities****, how and when does the* ***student positively respond to sensory activities,*** *important to determine* ***Arousal States*** *because certain changes can cause a deterrent to alertness, students need to feel safe and comfortable in order for students to engage in educational activities to the best of their ability.*

TOTAL POINTS: 28

APPENDIX G

RUBRIC FOR THE EVALUATION OF THE PRE/POST-INTERVENTION ALLM

RUBRIC FOR THE EVALUATION OF THE PRE/POST INTERVENTION ALLM REPORTS (Based on Karen Blankenship's E. A. Rubrics)

CRITERIA	LEVEL 1 2 POINTS FOR EACH ITEM IN THIS COLUMN	LEVEL 2 4 POINTS FOR EACH ITEM IN THIS COLUMN	LEVEL 3 6 POINTS FOR EACH ITEM IN THIS COLUMN	LEVEL 4 8 POINTS FOR EACH ITEM IN THIS COLUMN
1. Background Information *(States relevant information about the student, why the testing is needed, summary of FVA, descriptions of medical disabilities and their impact on the student and how learning is impacted*	Background unclear or nonexistent and vague description of the setting	Includes 2 components from LEVEL 4 and a clear description of the setting	Includes 3 components from LEVEL 4, a clear description of the setting	Includes all background and setting information: (1) FVA, (2) other disabilities, (3) medical information that is critical to understanding the students behavior, needs, and (4) impact of disabilities on learning
2. Interviews *(States information about the student in the environment from teacher and family interviews)*	No interview information is included in the background information section	Includes brief overview of student in the environment, but does not include information from teacher or family	Includes information from one interview: either parent or teacher	Includes relevant information from interviews with the family and the teacher.
3. Use of Sensory Channels Form 2 *(States information from 3+ observations for periods of 15-20 in a variety of settings and during a variety of times of the day)*	Completed ONE sensory channel form 2 with less than 10 observations but, with no explanation of form 2	Completed TWO sensory channel form—both forms include between 10-15 min. of observations but with less than 15 discrete observations listed	Completed THREE sensory channel form 2— all three forms have 10-15 minute observations, but have less than 15 discrete observations listed	Completed THREE sensory channel form 2– all three document 10-15 minute observations with at least 15 discrete behaviors listed

4. Procedures and Instruments Used *(Describes the tools and protocols to be used and a summary of times observed, and any special circumstances)*	The tools and procedures are listed only, no other critical information is provided. No rationale is indicated for choice of forms	The statement of tools and procedures are organized and but lacks critical information. Minimal rationale is provided for choice of forms	The statement of tools and procedures is organized, easy to read but a summary of the times observed is absent. The rationale for choice of forms is discussed	A succinct statement of tools and procedures is presented and includes: times observed and the locations of the observations are included. The rationale for choice of forms is aligned and logical. All special circumstances are explained
5. Assessment Results *(Assessment forms were appropriate and they addressed all the learning and literacy needs of the student*	Current learning and literacy functioning is not assessed and results are not explicit and unorganized.	The forms used and recommendations were not are appropriate for this student.	The appropriate forms were used but not all areas were addressed in the recommendations	Learning Media Assessment (LMA) forms 8, 9, 10, 11 used to appropriately provide primary and secondary media learning and literacy media
6. Recommendation Section *(Recommendations based on the findings of the assessment, the background information, interviews, are appropriate for the students functioning, recommendations are relevant for increasing student's independence*	Some basic recommendations are made but do not seem targeted to the student's assessment	Relevant recommendations made— and between 3-4 actually relate to or match the assessment outcomes	Relevant recommendations are made and 5 directly relate to the assessment outcomes Recommendations are made to 2-3 stakeholders	SIX or more of the recommend-ations are listed and directly related to the assessment outcomes Recommend-ations are directed to teachers, school administrators, and, families

7. Summary *(The summary addresses these components: 1. significance of findings 2. implications for educational programming 3. covers all relevant learning areas for the student.)*	The report does not contain a summary	The summary is brief and only discusses 1 of the 3 components listed in LEVEL 4	The summary is brief and only discusses 2 of the 3 components listed in LEVEL 4	Summary statement contains significance of findings, implications for educational programming, appropriately covers all relevant learning areas
OVERALL SCORE	**POOR 0-14**	**NEEDS WORK 15-28**	**SATISFACTORY 29-42**	**EXCELLENT 43-56**

APPENDIX H

ACCEPTABILITY RATING SCALE

ACCEPTABILITY RATING SCALE

Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	**Disagree**	**Agree**	**Strongly Agree**
1. The ALLM training prepared me for conducting Assessment of Learning and Literacy Media with my students with multiple disabilities including visual impairments.	1	2	3	4
2. I will use these ALLM procedures with all the students on my caseload.	1	2	3	4
3. I would suggest this training to other TVIs wanting to learn more about conducting the ALLM with students with multiple disabilities including visual impairments and writing an accurate, appropriate report.	1	2	3	4
4. The tools/forms used to complete the ALLM process were explained well and easy to use.	1	2	3	4
5. I am using the Sensory Channels observation form more efficiently and correctly when conducting the ALLM.	1	2	3	4
6. My competence level is such that I can conduct an ALLM that will inform the most efficient learning and literacy media for my students with multiple disabilities including visual impairments.	1	2	3	4
7. My competence level is such that I can write accurate, appropriate recommendations for the student based on the ALLM I completed.	1	2	3	4
8. My competence level is such that I can write an informative, useful report containing all the pertinent data from all the important sections of the ALLM.	1	2	3	4

Additional comments about the modules and the topic of focus:

APPENDIX I

OVERVIEW OF SCAFFOLDING FOR MODULE INTERVENTION

OVERVIEW OF SCAFFOLDING FOR MODULE INTERVENTION

Review of Past Knowledge and Expand on the Impact of Multiple Disabilities

1. Review basics that participants covered in university preparation program
2. Introduce the 3 basic categories of additional disabilities
3. Discuss the impact of additional disabilities when combined with visual impairments

Review of Protocols, Tools, Interviews, Checklists Useful for the ALLM–First Practice

4. Review the critical components of a comprehensive ALLM
5. Introduce and discuss the protocols, tools, and forms that may provide appropriate assessment data
6. Watch video 1 together with all completing the Sensory Channels form
7. Discussion of results and thoughts from watching the video

Independent Practice Using Forms–Second Practice

8. Independent practice on video 2, filling out the forms and bringing the information to the next online meeting

Review of the First 3 Modules and Writing Recommendations that Align with Data

9. Review of forms, protocols, methods for gathering data on ALLM
10. Discussion of video 2
11. Interpretation of results, who may need alternative media/technology
12. How to write the recommendations so they align with what the data shows

APPENDIX J

LINK TO MODULES ON GOOGLE FORMS

The link to the online modules is below, copy and paste on Internet browser and click to enter module one.

https://docs.google.com/forms/d/e/1FAIpQLSf7i3mTqAC-cxlDH08mtaWqkuKLgNVnLq2YE3CWCPGp7mO3-Q/viewform?usp=sf_link

APPENDIX K

MANUAL TO ACCOMPANY THE ONLINE MODULES

Manual of Forms

The Assessment of Learning and Literacy Media (ALLM) for Students with Multiple Disabilities Including Visual Impairments

Jacqulyn Daniels
Presenter

- This is a manual of forms that accompany the four modules in this online professional development presentation.
- There are forms that are blank for your use and participation and then similar forms that are filled in to demonstrate how they may look when completed.
- This manual is compiled from several sources and each source is referenced.

TABLE OF CONTENTS

MODULE ONE

SLIDE 21
PRINT COPY

Brief Scenario of How Literacy, Communication, and Socialization Can be Linked for a Student with MD+VI

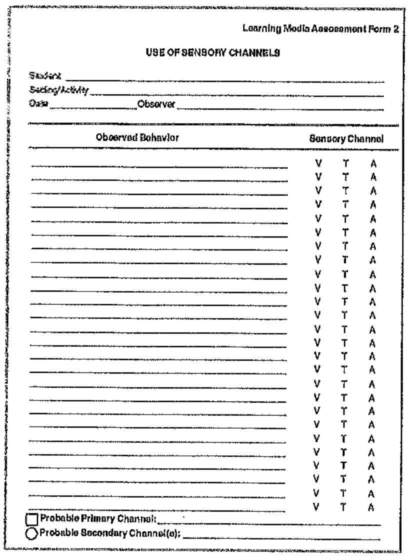
Joe is a student with cerebral palsy and a visual acuity of 20/600. He has chart with brightly colored, bold, simple pictures of the main activities and his friends in the classroom. The chart also shows the choices of snack and drink and the two emotions of hurt/sad and happy. Joe knows all the pictures and the activities they represent and can see them when the chart is attached to a clipboard on his wheelchair. He will indicate a desired activity, need, or feeling by hitting the picture with his left hand. By using this chart, Joe can let the teacher know his choice of snack or drink, how he feels, and the friend he wants to work beside. Joe has access to this method of demonstrating literacy with the pictures of known activities and classmates. He uses this literacy method to communicate his choices and needs to his teacher. Through this method, Joe is more involved in the classroom activities.

3

MODULE TWO

4

Form 2
Use of Sensory Channels



Learning Media Assessment Form 2

USE OF SENSORY CHANNELS

Student ___
Setting/Activity ___
Date ___ Observer ___

Observed Behavior	Sensory Channel		
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A
	V	T	A

☐ Probable Primary Channel: ___
◯ Probable Secondary Channel(s): ___

Key

V = Visual

T = Tactual

A = Auditory

☐ = Primary Channel

◯ = Secondary Channel

Use for

- students being assessed/reassessed for eligibility, including infants and preschoolers
- students with suspected change in sensory functioning

Purpose

- To determine a student's primary and secondary sensory channels

Procedures (pp. 22-23)

- **Arrange** three or more **observations** of 15 to 20 minutes each in structured and unstructured environments, familiar and unfamiliar settings, and indoors and outdoors.
- For students with additional disabilities pay attention to the following: (pp. 87-88)
  - √ Motivation of activity for student
  - √ Effects of medication
  - √ Time of day
  - √ Schedule one observation during unstructured free time.
- Include parents and other team members as appropriate.
- **Record** 15 or more behaviors in each environment.
- **Box** the **V** (visual), **T** (tactual) or **A** (auditory) to indicate the **primary** sensory channel used in each behavior.
- **Circle** the **V**, **T**, and/or **A** for **secondary** channels.

Interpretation (p. 24)

- Identify the **primary sensory channel** by looking across all observations for the **V**, **T**, or **A** consistently marked with a **box**.
- Identify **secondary channel(s)** that are **circled.**
- See page 24, item 4, if a consistent pattern is not clearly identifiable.

Form 2: Use of Sensory Channels

5

Purpose:
- To determine a student's primary and secondary sensory channels.

Instructions:
- Conduct 3 or more observations lasting 15-20 minutes in various environments.
- During each observation, record and rate 15+ discrete behaviors.
- Record only concrete, observable behaviors.
- Consider ALL sensory channels student used to accomplish task/activity.
- Differentiate primary sensory channel with an "X" in the appropriate box and secondary sensory channel with an "O" in the appropriate box.
- Only specify one sensory channel as primary when absolutely certain.

Assessment:

Observation #1:
Setting/Activity: _____
Observer: _____ **Time:** _____ **Date:** _____

Observed Behavior	Sensory Channel
1. _____	☐ V ☐ T ☐ A
2. _____	☐ V ☐ T ☐ A
3. _____	☐ V ☐ T ☐ A
4. _____	☐ V ☐ T ☐ A
5. _____	☐ V ☐ T ☐ A
6. _____	☐ V ☐ T ☐ A
7. _____	☐ V ☐ T ☐ A
8. _____	☐ V ☐ T ☐ A
9. _____	☐ V ☐ T ☐ A
10. _____	☐ V ☐ T ☐ A
11. _____	☐ V ☐ T ☐ A
12. _____	☐ V ☐ T ☐ A
13. _____	☐ V ☐ T ☐ A
14. _____	☐ V ☐ T ☐ A
15. _____	☐ V ☐ T ☐ A
16. _____	☐ V ☐ T ☐ A
17. _____	☐ V ☐ T ☐ A
18. _____	☐ V ☐ T ☐ A
19. _____	☐ V ☐ T ☐ A

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MODULE THREE

7

Individual Sensory Learning Profile Interview (ISLPI)

Child's Name_____**DOB:** _____

Current Age:_____ **Date:**_____

Completed By: _____
(Name & Title)

Please complete with the child's primary caregiver and/or the child's early interventionist, teacher, and/or therapist.

Background Information

Medical diagnoses:

Current medications and their purpose:

Sensory Profile Questions
Vision

Does the child have a diagnosis as being blind or visually impaired?
Yes: _____ No: _____

Has the child been diagnosed as legally blind?
Yes: _____ No: _____
If so, what is the medical diagnosis?

Does the child wear glasses or use other optical devices? If so, please give the prescription and/or details about the devices.
Right _____ *Left* _____ *Both* _____

Does the child visually respond to a human face? Yes _____ No _____

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Does the child respond to other visual stimuli? Yes: ☐ No: ☐

If so, what are the characteristics of the visual stimuli?

_____ *Illuminating* _____ *Shiny/Light Reflective* _____ *High Contrast*

_____ *Pastel Colored* _____ *Brightly Colored* _____ *Familiar*

Other characteristics or details about visual stimuli: _____

_____

Is there an immediate or delayed response to visual stimulus? Please describe:

What type of environment seems to best support visual responsiveness?

Presentation to midline, left, right, top, bottom of visual field (circle all that apply)

visual attention distance (describe in inches or feet) _____

illumination preference: _____

familiar setting / items _____ *quiet* _____ *low visual clutter* _____

accompaniment of other sensory stimuli: _____

Other environmental preferences including positioning needs for visual attending:

Items that child shows a visual response / preference to:

Hearing:

Does the child have a diagnosis of being deaf, hard of hearing, or having a central processing disorder? If so, please circle the one(s) that are appropriate.

Yes: ☐ No: ☐

Does the child wear hearing aids or use other sound amplification devices?

Yes: ☐ No: ☐

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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If yes, please list the listening devices used:

Is there a history of ear infections? Yes: ☐ No: ☐

Does the child attend to auditory stimuli? Yes: ☐ No: ☐

If so, what are the characteristics of the auditory stimuli?

Human Voice: Yes: ☐ No: ☐

Environmental Sounds: Yes: ☐ No: ☐

Sound Volume: _____ *Low* _____ *Moderate* _____ *High*

Other characteristics or details about auditory stimuli:

Is there an immediate or delayed response to auditory information? Please describe.

What type of environment seems to best support auditory responsiveness?

sound presentation distance (describe in inches or feet) _____

quiet _____ *low noise clutter* _____ *echolocation boundaries:* _____

accompaniment of other sensory stimuli:

Other environmental preferences for auditory responsiveness:

Items that child shows an auditory response / preference to:

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Touch / Kinesthetic/ Vestibular:

Does the child have a diagnosis of cerebral palsy or other disorder affecting movement?
Yes: ☐ No: ☐

Does the child benefit from any orthopedic or special positioning / ambulation / mobility device?
Yes: ☐ No: ☐

Please list these device(s):

Does the child respond positively or adversely to being touched?
Positively: ☐ Adversely: ☐

Please explain preferences or aversions for being touch (e.g., soft, firm, predictable)

Does the child respond positively or adversely to touching people/objects?
Positively: ☐ Adversely: ☐

Please explain preferences or aversions for touching people / objects:

Does the child respond positively or adversely to movement?
Positively: ☐ Adversely: ☐

Please preferences or aversions to movement (e.g., slow, rhythmic, predictable, etc.):

Positions which seem to best support overall sensory responsiveness:

prone _____ *supine* *sidelying* _____ *sitting* _____

sitting with support _____ *other:*

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

Olfactory / Taste

Does the child positively or adversely respond to specific smells and/or tastes? Please describe:

Positive responses:

Aversion responses:

Summary of Sensory Preference / Recommendations for Motivating Objects

Visual:

Auditory:

Touch/Movement:

Smell/Taste:

Other Recommendations:

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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* SAMPLE

Individual Sensory Learning Profile Interview (ISLPI)

Child's Name Susan **DOB:** _____

Current Age: 7 **Date:** _____

Completed By: _____
(Name & Title)

Please complete with the child's primary caregiver and/or the child's early interventionist, teacher, and/or therapist.

Background Information

Medical diagnoses: Susan has cortical visual impairment and cerebral palsy.

Current medications and their purpose: Stool softeners - no other medications at this time.

Sensory Profile Questions
Vision

Does the child have a diagnosis as being blind or visually impaired?
Yes: X No: _____

Has the child been diagnosed as legally blind?
Yes: X No: _____

If so, what is the medical diagnosis?
Cortical Visual Impairment (CVI)

Does the child wear glasses or use other optical devices? If so, please give the prescription and/or details about the devices.
Right _____ *Left* _____ *Both* _____

Does the child visually respond to a human face? Yes X No _____

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Does the child respond to other visual stimuli? Yes: X No: ☐

If so, what are the characteristics of the visual stimuli?

X *Illuminating* X *Shiny/Light Reflective* X *High Contrast*

____ *Pastel Colored* X *Brightly Colored* X *Familiar*

Other characteristics or details about visual stimuli: Susan prefers red or yellow toys and she will look at high contrast pictures.

Is there an immediate or delayed response to visual stimulus? Please describe: If it is a familiar toy she will look at it within 5 seconds @ 12in.

What type of environment seems to best support visual responsiveness?

Presentation to midline, left, right, (top,) bottom of visual field (circle all that apply)

visual attention distance (describe in inches or feet) 12 inches

illumination preference: Reduce glare and increase contrast

familiar setting / items ____ *quiet* ____ *low visual clutter* X

accompaniment of other sensory stimuli: She likes music and toys that make sounds - in her favorite color.

Other environmental preferences including positioning needs for visual attending:
She uses her best vision when objects are red or yellow and when the light is coming from behind her.

Items that child shows a visual response / preference to:
Toys and objects that are red and yellow and have sound or music.

Hearing:

Does the child have a diagnosis of being deaf, hard of hearing, or having a central processing disorder? If so, please circle the one(s) that are appropriate.

Yes: ☐ No: X

Does the child wear hearing aids or use other sound amplification devices?

Yes: ☐ No: X

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If yes, please list the listening devices used:

Is there a history of ear infections? Yes: [ ] No: [X]

Does the child attend to auditory stimuli? Yes: [X] No: [ ]

When paired with high contrast colors

If so, what are the characteristics of the auditory stimuli?

Human Voice: Yes: [X] No: [ ]

Environmental Sounds: Yes: [X] No: [ ]

Sound Volume: _____ *Low* __X__ *Moderate* _____ *High*

Other characteristics or details about auditory stimuli: She responds to and smiles when short stories are on a CD or during classroom songs.

Is there an (immediate) or delayed response to auditory information? Please describe. Susan will turn her head when her name is called and reach out to musical toys.

What type of environment seems to best support auditory responsiveness?

sound presentation distance (describe in inches or feet) within 3 feet

quiet _____ *low noise clutter* __X__ *echolocation boundaries:* _____

accompaniment of other sensory stimuli: Susan responds best to familiar sounds, songs, and people.

Other environmental preferences for auditory responsiveness:

Items that child shows an auditory response / preference to:

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Touch / Kinesthetic/ Vestibular:

Does the child have a diagnosis of cerebral palsy or other disorder affecting movement?
Yes: X No: ☐

Does the child benefit from any orthopedic or special positioning / ambulation / mobility device?
Yes: X No: ☐

Please list these device(s): wheelchair, stander, wedge, and a tray for her wheelchair

Does the child respond positively or adversely to being touched?
Positively: X Adversely: ☐

Please explain preferences or aversions for being touch (e.g., soft, firm, predictable)
Prefers firm

Does the child respond positively or adversely to touching people/objects?
Positively: X Adversely: ☐

Please explain preferences or aversions for touching people / objects:
The only aversion response observed was with furry textures.

Does the child respond positively or adversely to movement?
Positively: X Adversely: ☐

Please preferences or aversions to movement (e.g., slow, rhythmic, predictable, etc.):

Positions which seem to best support overall sensory responsiveness:

prone wedge *supine* *sidelying* _____ *sitting* _____

sitting with support wheelchair *other:* wheelchair is tilted slightly back

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Olfactory / Taste

Does the child positively or adversely respond to specific smells and/or tastes? Please describe:

Positive responses: chocolate, banana, tulips

Aversion responses: pine, lemon

Summary of Sensory Preference / Recommendations for Motivating Objects

Visual: Susan enjoys her familiar red and yellow toys. She responds to pictures with high contrast. When introducing new information pair it with a yellow or red background/component. Lighting needs to be behind her.

Auditory:
Susan uses her hearing/auditory sense well and is especially attentive to familiar sounds and people.

Touch/Movement:
Susan does not like furry/fuzzy textures.

Smell/Taste: Susan has aversive responses to pine and lemon scents. She will smile and vocalize when presented a scent she likes.

Other Recommendations:

1. Make lighting at a moderate level and have it come from behind her head.
2. Build on her participation and responses by pairing new experiences with familiar objects and preferred colors.

An adapted version of this protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Observational Assessment of Sensory Preferences of Infants and Toddlers with Visual Impairments

Adapted Form from Koenig and Holbrook (1995)

By Tanni L. Anthony, Ph.D., 1997, Revised 2003

Child's Name: _____ DOB: _____

Completed By:_____ Date Completed: _____

Instructions:

1. Make arrangements to observe the infant and toddler during multiple daily routines. Observe for 15-30 minutes. Be sure to include routines at the child's home, daycare, or other places the child frequently visits.
2. Include all primary caregivers as members of the observation team.
3. During each observation, record all senses the child appears to use. Note specific examples of how the child uses each sense. For example, if during the first observation, the child tactilely searches a high chair tray to find bits of food, circle the behavior as T, and make notes under the observation that briefly describe the child's behavior "swiped with left hand to find pieces of food."
4. After you have completed all observations look for patterns and frequency of sensory behaviors. The one that is marked most often is probably the child's preferred sensory learning mode. Choose the second most frequently used sense as the secondary sensory preference.
5. Use the primary and secondary sensory preferences to make recommendations about how to reinforce learning activities for the child.

V = visual; T = tactile; A = auditory; M = movement; S = smell

Behavior	Sensory Avenue(s) Utilized				
Behavior Observation #1	V	T	A	M	S
Behavior Observation #2	V	T	A	M	S
Behavior Observation #3	V	T	A	M	S
Behavior Observation #4	V	T	A	M	S
Behavior Observation #5	V	T	A	M	S
Behavior Observation #6	V	T	A	M	S

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Behavior	**Sensory Avenue(s) Utilized**				
Behavior Observation #7	V	T	A	M	S
Behavior Observation #8	V	T	A	M	S
Behavior Observation #9	V	T	A	M	S
Behavior Observation #10	V	T	A	M	S
Behavior Observation #11	V	T	A	M	S
Behavior Observation #12	V	T	A	M	S
What calms the child? (describe)	V	T	A	M	S
What alerts the child? (describe)	V	T	A	M	S
What stresses the child? (describe)	V	T	A	M	S
What overloads the child? (describe)	V	T	A	M	S
What are the child's favorite toys? (describe)	V	T	A	M	S
What activities does the child anticipate? (describe)	V	T	A	M	S
What activities does the child anticipate? (describe)	V	T	A	M	S

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Behavior	**Sensory Avenue(s) Utilized**				
What motivates the child to move? (describe)	V	T	A	M	S
Other:	V	T	A	M	S

Summary of Results

Primary Sensory Preference and Rationale

Secondary Sensory Preference and Rationale

Key Observations

Next Step Recommendations

Reference:

Koenig, A.J., & Holbrook, M.C. (1995). *Learning media assessment of students with visual impairments: A resource guide for teachers* (2nd ed.). Austin, TX: Texas School for the Blind and Visually Impaired.

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Observational Assessment of Sensory Preferences of Infants and Toddlers with Visual Impairments

Adapted Form from Koenig and Holbrook (1995)

* SAMPLE

By Tanni L. Anthony, Ph.D., 1997, Revised 2003

Child's Name: Joseph DOB: _____

Completed By: _____ Date Completed: _____

Instructions:

1. Make arrangements to observe the infant and toddler during multiple daily routines. Observe for 15-30 minutes. Be sure to include routines at the child's home, daycare, or other places the child frequently visits.
2. Include all primary caregivers as members of the observation team.
3. During each observation, record all senses the child appears to use. Note specific examples of how the child uses each sense. For example, if during the first observation, the child tactilely searches a high chair tray to find bits of food, circle the behavior as T, and make notes under the observation that briefly describe the child's behavior "swiped with left hand to find pieces of food."
4. After you have completed all observations look for patterns and frequency of sensory behaviors. The one that is marked most often is probably the child's preferred sensory learning mode. Choose the second most frequently used sense as the secondary sensory preference.
5. Use the primary and secondary sensory preferences to make recommendations about how to reinforce learning activities for the child.

V = visual; T = tactile; A = auditory; M = movement; S = smell

Behavior	Sensory Avenue(s) Utilized
Behavior Observation #1	(V) T A M S
reached out to ball	
Behavior Observation #2	V (T) A M S
hit ball when it touched his hand	
Behavior Observation #3	V (T) A M S
moved hand around table looking for the ball	
Behavior Observation #4	(V) T A M S
moved head to right and saw ball	
Behavior Observation #5	(V) T A M S
looked up at teacher	
Behavior Observation #6	(V) T A M S
turned and looked at light coming through window.	

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Behavior	Sensory Avenue(s) Utilized				
Behavior Observation #7	(V)	T	A	M	S
reached out for ball again					
Behavior Observation #8	V	(T)	A	M	S
pushed ball on floor					
Behavior Observation #9	(V)	T	A	M	S
looked down to floor					
Behavior Observation #10	V	T	A	M	S
Behavior Observation #11	V	T	A	M	S
Behavior Observation #12	V	T	A	M	S
What calms the child? (describe)	V	T	(A)	M	S
music					
What alerts the child? (describe)	(V)	T	A	M	S
ball, blocks, iPad					
What stresses the child? (describe)	V	T	(A)	M	S
loud noises					
What overloads the child? (describe)	V	T	(A)	M	S
loud noises and larger groups					
What are the child's favorite toys? (describe)	(V)	T	A	M	S
ball, blocks, iPad					
What activities does the child anticipate? (describe)	V	T	A	M	S
What activities does the child anticipate? (describe)	V	T	A	M	S

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

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Behavior	Sensory Avenue(s) Utilized				
What motivates the child to move? (describe)	V	T	A	M	S
Other:	V	T	A	M	S

Summary of Results

Primary Sensory Preference and Rationale

Visual - Joseph demonstrated more visual responses during each observation.

Secondary Sensory Preference and Rationale

Tactual - Joseph utilized his tactual sense secondary to visual, he preferred his visual sense to acknowledge people and favorite activities.

Key Observations

Joseph really likes games and stories on the iPad and will smile and laugh.

Next Step Recommendations

1. Encourage Joseph's interaction on the iPad by using the touch screen for games.
2. Encourage his opportunities to make a choice between to activities or objects he prefers by visually looking at the one he wants.
3. Introduce some new games and stories that are visually engaging on the iPad.

Reference:

Koenig, A.J., & Holbrook, M.C. (1995). *Learning media assessment of students with visual impairments: A resource guide for teachers* (2nd ed.). Austin, TX: Texas School for the Blind and Visually Impaired.

This protocol is published in: Anthony, T. L., Shier Lowry, S., Brown, C. J., & Hatton, D. D. (2004). *Developmentally Appropriate Orientation and Mobility*, Chapel Hill: University of North Carolina at Chapel Hill.

Sensory Response Record (SRR)

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Learner:	Recorder:

1. Presentation Periods

Date and Time	Place	Presenter

2. Presentation Structure (Use information from Arousal State Profile and Sensory Learning Summary.)

Length of session:	Duration of presentation:	Time between presentations:

3. Appetite Item Menu

Sensory Channel	Code	Items
Vestibular/Proprioceptive	VP	
Gustatory	G	
Olfactory	O	
Tactual/Proprioceptive	TP	
Auditory	A	
Visual	V	

4. Response Modes (Complete all three.)

Positive:
Negative:
Distress signals:

5. Cautions and Modifications

Cautions	Modifications

Sensory Response Record (SRR) · Learner:_____

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6. Observation Record:
   Channels VP, G, O, TP, A, V
   Appetite (+) Aversion (-)
   Amount of delay in seconds
   1-3 Intensity (3 being greater)
   Responses ES, QA, AA, PP

Item	Channel	App/Avr	Delay	Intensity	Responses ES	QA	AA	PP

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Sample Sensory Response Record (SRR)

Learner: *Mary J.*	Recorder: *Ray S.*

1. Presentation Periods

Date and Time	Place	Presenter
2/19/03 8:35	*Classroom, in wheelchair*	*Ray*
2/20/03 10:35	*Classroom, prone on wedge*	*Ray*
2/20/03 1:00	*Classroom, supine on mat*	*Ray*

2. Presentation Structure (Use information from Arousal State Profile and Sensory Learning Summary.)

Length of session:	Duration of presentation:	Time between presentations:
5 to 10 minutes	*15 seconds (at least)*	*15 seconds (at least)*

Sample Arousal State Profile (ASP) · Learner: ***M.J.***

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Percentage of Alert States

Day	Observation Period	Observation Date	Number of Arousal States Recorded	Number of Quiet and Active Alert
1	*1*	*2/4/03*	*12*	*5*
	2	*2/4/03*	*12*	*0*
	3	*2/4/03*	*12*	*2*
*2**	*1**	*2/5/03*	*12*	*1*
	*2**	*2/5/03*	*12*	*3*
	*3**	*2/5/03*	*12*	*1*
*3**	*1**	*2/6/03*	*12*	*0*
	*2**	*2/6/03*	*12*	*5*
	*3**	*2/6/03*	*12*	*2*
TOTALS			*108*	*19*

Percent Alert	Col. 5 ÷ Col. 4 =	*20% (17.6)*

*Sample Assessments only show Day One Observation Periods 1, 2, and 3.

Sample Sensory Response Record (SRR) · Learner: ***M.J.***

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3. Appetite Item Menu

Sensory Channel	Code	Items
Vestibular/Proprioceptive	VP	*Side-to-side rocking, front-to-back rocking, hammock swing, water bed*
Gustatory	G	*Cereal, pudding, lollipops, Twizzlers*
Olfactory	O	*Input limited to mild odors associated with some items in other channels*
Tactual/Proprioceptive	TP	*Vibrating pad, lotion, tactile rollers, wax paper*
Auditory	A	*Bells, music player, singing, wind chimes*
Visual	V	*Mirror, pinwheel, helium balloon, faces*

4. Response Modes (Complete all three.)

Positive: *Open eyes, increase in head movement*
Negative: *Closed eyes, tongue sucking*
Distress signals: *Flushing, shallow breathing, maybe some vocalizing*

5. Cautions and Modifications

Cautions	Modifications
Fussy after moves *No citrus* *Response delays* *Breathing and drainage issues*	*Allow about 3 min. recovery time.* *Slow pace, 15' presentation* *Minimize supine positioning.*

6. Observation Record:
   Channels VP, G, O, TP, A, V
   Appetite (+) Aversion (-)
   Amount of delay in seconds
   1-3 Intensity (3 being greater)
   Responses ES, QA, AA, PP

Item	Channel	App/Avr	Delay	Intensity	Responses ES	QA	AA	PP
Bells	*A*	+	*6'*	*1*		✓		
Mirror	*V*	+	*15'*	*3*		✓		
Side-to-side rocking	*VP*	-	*0'*	*3*	✓			
Music player	*A*	+	*4'*	*2*		✓		
Pudding	*G*	-	*5'*	*1*		✓		
Pinwheel	*V*	+	*15'*	*1*		✓		
Vibrating pad	*TP*	+	*3'*	*2*		✓		
Front-to-back rocking	*VP*	-	*0'*	*2*	✓			
Tactile roller with plush cover	*TP*	+	*4'*	*3*		✓		
Cereal	*G*	+	*6'*	*1*			✓	
Lotion	*TP*	+	*3'*	*3*			✓	
Hammock swing	*VP*	-	*0'*	*1*		✓		
Lollipop	*G*	-	*7'*	*1*		✓		
Wax paper	*TP*	+	*4'*	*3*			✓	
Helium balloon	*V*	+	*15'*	*3*		✓		
Water bed	*VP*	-	*0'*	*1*		✓		
Singing	*A*	+	*5'*	*2*		✓		

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Arousal State Profile (ASP)

Procedures

Complete Parts I and II of the SLS before beginning this assessment. If issues related to nutrition, hydration, medication, elimination, or sleep emerge, the team of learning partners must act as quickly as possible to resolve these issues. If some are not immediately remediable, such as changing long standing sleep irregularities, the assessment may proceed.

Determine who will be the arousal state recorder. Ideally, the recorder should be a partner who will not be interacting with the learner during observation periods so that attention can be focused on identifying arousal states.

Remember, this is an observation tool designed to allow you to make changes that will give you more useful information. Some partners choose to record seizure activity and episodes of self-stimulatory behaviors in addition to the typical arousal states. This could be very helpful information.

Consistency must be maintained from observation to observation and from recorder to recorder in order for information to be useful.

You may want to use some sort of device to help you remember when it is time to record. If you use something that beeps or dings, you may influence the learner's state. A vibrating timer may help.

You may want to record the actual time for about every third observation. The other two can be assumed to have occurred at the designated interval.

1. Determine when you will observe the learner. You want to cover as many of the important parts of the day as you can. You will record arousal states for those observation periods on at least **three different days** in order to see if there is a consistent pattern. Some learners will require more days than others.

2. Determine the recording interval. Some learners change arousal states very quickly, others more slowly. Decide how frequently you will record arousal states based on the state patterns of the individual learner. Intervals of five minutes are typical. Intervals longer than fifteen minutes or shorter than one minute do not tend to yield very reliable information.

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3. Identify the arousal states of the learner and develop a code. If more than one recorder is involved in building the profile, everyone must agree on what typical characteristics of each arousal state are for the individual learner being observed. For instance, if a learner typically sleeps with eyes open slightly, make sure that everyone recognizes this sleep pattern. If a learner closes his eyes and slumps forward to withdraw when agitated, make sure everyone knows to code this as agitated, not drowsy or asleep.

4. Note the significant factor(s) from Part I of the SLS that may be influencing arousal states.

5. Record the code for the arousal state observed at the designated time. States may have changed during the interval. Just record the arousal state present at the moment of recording. This tends to yield more consistent information. If you wish, you may also record what is going on at the time of the recording. Be brief. You might write something like "Mom washing hair" or "lying on mat, music playing."

   - After a **minimum of three days of data collection** (not necessarily consecutively), use different colors to highlight quiet and active alert states. If there is a consistent pattern, use these times to plan priority instructional activities.

   - If certain arousal states are related consistently to certain people, activities, or places noted under Comments, try to determine what characteristics of these things may be contributing to the learner being alert, drowsy, or agitated. For instance, do voice qualities—such as volume, or tone—or touching styles—such as rhythm or pressure affect the learner?

6. Determine the percent of alert states. You can do this by counting the number of observations and the number of quiet and active alert states for each observation period.

7. The total of all observations can be used as a baseline for measuring the success of your state manipulation intervention to increase the frequency and duration of alert states.

8. For instance, you may have done 100 observations and the learner may have been alert for 20 of those or 20% of the time.

Arousal State Profile (ASP) 32

Learner:	Recorder:

1.

Recording Periods			Date:
1.	2.	3.	Day: 1 2 3
4.	5.	6.	

2. Recording Interval:

3. Arousal State Descriptions

State	Code	Description
Sleep	S	
Drowsy	D	
Quiet Alert	QA	
Active Alert	AA	
Fussy	F	
Crying/agitated	CA	

4. Factors from Part I of SLS that may be influencing arousal states include:

5. Observations

Photocopy the following pages to record your observations. The electronic version may be used on the SLK CD.

Arousal State Profile (ASP) · Learner: 34

Observation Day One
Copy form as needed (minimum three times).

Observation Period (circle one): 1 2 3 4 5 6 Date: _____
Recorder: _____ Recording Intervals: _____

Time	Code	Comments

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Sample Arousal State Profile (ASP)

Learner: *Mary J.*	Recorder: *Ray S.*

1.

Recording Periods			Date: *2/4/03*
1. *7:45-8:45 am*	2. *10:00-11:00 am*	3. *1:00-2:00 pm*	Day: (1) 2 3
4.	5.	6.	

2.

Recording Interval: *Every 5 minutes*

3. Arousal State Descriptions

State	Code	Description
Sleep	*S*	*Eyes closed, rhythmic breathing, intermittent small movements of extremities*
Drowsy	*D*	*Slow opening and closing of eyes, low tone*
Quiet Alert	*QA*	*Eyes open, still head, intense facial expression noted by slight tightening of muscles around lips*
Active Alert	*AA*	*Eyes open, lots of head movement as tone increases in extremities, some tongue thrusting*
Fussy	*F*	*Eyes closed, tongue sucking*
Crying/agitated	*CA*	*Eyes closed, skin flushed, shallow breathing, some vocalizing*

4. Factors from Part I of SLS that may be influencing arousal states include:

Movement for positioning

Respiratory difficulties

Medications

5. Observations

Photocopy the following pages to record your observations. The electronic version may be used on the SLK CD.

Sample Arousal State Profile (ASP) · Learner: *M.J.* 37

Observation Day One
Copy form as needed (minimum three times).

Observation Period (circle one): (1) 2 3 4 5 6 Date: *2/4/03*
Recorder: *Ray S.* Recording Intervals: *every 5 minutes*

Time	Code	Comments
7:45	*F*	*L. bringing M. into building from bus*
	D	*Entering cafeteria*
	S	*Greetings-L. manipulating hand, not sure M. is really asleep?*
8:00	*QA*	*B. changing diaper*
	QA	*"*
	QA	*Suctioning*
8:15	*F*	*B. putting M. in wheelchair*
	S	*R. feeding M. her cereal*
	S	*" (Not sure she is really asleep, maybe withdrawal?)*
8:30	*S*	*L. arranging M. for tube feeding*
	QA	*L. singing to M.*
	QA	*L. talking to M.*

Appetite/Aversion List (AAL)

Date_____

Procedures

1. List items that elicit positive orienting responses in the appetite column. Use information from the ASP, the SRR, and your previous knowledge of the learner's preferences to complete this list.

2. List items that elicit negative orienting responses in the aversion column. Use the same sources mentioned above.

APPETITE/AVERSION LIST

Appetites	Aversions

Sample Appetite/Aversion List (AAL)

Date *2/20/03*

Appetites	Aversions
Bells	*Side-to-side rocking*
Mirror	*Hammock swing*
Music player	*Pudding*
Pinwheel	*Front-to-back rocking*
Vibrating pad	*Lollipop*
Tactile roller with plush cover	*Water bed*
Cereal	*Strong odors*
Lotion	
Wax paper	
Helium balloon	
Singing	
Twizzler	
Faces	

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* SAMPLE

LEARNING MEDIA ASSESSMENT (LMA) REPORT

Based on the APH Sensory Learning Kit (SLK) by Millie Smith
Assessment Results Reflected in Levels and Strategies Guide

Student Name: Dates of Assessment:
DOB/Age: School District/School:
Assessment Team: Date of Report:

The Learning Media Assessment (LMA) is a required assessment for students with visual impairments, including those with additional disabilities. The data from the LMA is used to determine the most appropriate learning/literacy media (learning materials) for the student. Aside from determining if Braille is an appropriate learning or literacy medium for the student, it addresses, for students with additional disabilities, all sensory channels, to identify which channels and associated materials are accessible to the student and can be used for learning. The following data were collected during the SLK assessment and recorded on the Sensory Response Record.

SLK Form 1: Sensory Learning Summary (important sensory or medical information used in planning the assessment):

SLK Form 2: Arousal State Profile (completed if student arousal periods in question):

SLK Form 3: Sensory Response Record (results of assessment) This student demonstrated positive responses regarding sensory items presented.

Responsive Level: The four responsiveness levels identified in the SLK are: extended state (fussy, upset, angry, asleep), quiet alert (in a general state of alertness), active alert (alert and curious about the activity), partial participation (alert and taking some part in the activity). This indicates at what level of responsiveness the student performed during the assessment and sets the starting point for the level of the instructional activity routines selected.

(please indicate # of presentations eliciting responses below)

Total Items Presented	Extended State	Quiet Alert	Active Alert	Partial Partic.
# Items	#	#	#	#
% Items	%	%	%	%
The responsive level most frequently observed:				

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Enter total number of appetite items for each channel from the Observation Record (in the SRR).

Appetite Totals

Vest./Proprio:_____ Olfactory:_____ Gustatory:_____ Tactual:_____ Visual:_____ Auditory:_____

SECTION 5 – LIST THE TOP TEN APPETITE FAVORITES FROM THE SRR

1. **Appetite Items:**_____

Comments:_____

2. **Appetite Items:**_____

Comments:_____

3. **Appetite Items:**_____

Comments:_____

4. **Appetite Items:**_____

Comments:_____

5. **Appetite Items:**_____

Comments:_____

6. **Appetite Items:**_____

Comments:_____

7. **Appetite Items:**_____

Comments:_____

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SLK Form 4: Appetite/Aversion List (based on assessment)
Appetite Items. These are items presented to the student in all appropriate sensory channels for which a positive response (liked the item) was demonstrated. Delayed Response Time. The amount of time it took for the student to respond to the item.

Appetite Items (likes) identified during Sensory Response Record presentations and average delayed response time per sensory channel:

	Vest/Prop. (move.)	Olfactory-observed not tested	Gustatory (taste)	Tactual (touch)	Auditory (sound)	Visual (sight)
Appetite Totals	#	#	#	#	#	#
Avg Delayed Response Time						
Sensory channels with most positive responses:						

Top ten sensory appetite items (Items eliciting strongest positive response): These items represent appropriate learning media for this student.

Appetite Items (likes)	Sensory Channel/Response
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
Aversions:	

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SLK Form 5: Level & Strategy Guide (appropriate level & strategies to begin teaching)

Results & Recommendations: Environmental Factors Related to Learner's Orienting Responses: Lighting, Temperature, Odors, Noise Level, Visual Clutter, Positioning, Movement, Other: (address all that apply)

Results and Recommendations: Social Factors Related to Learner's Orienting Responses: Presence or absence of peers/adults, Direct attention to peers/adults, Preferred peers/adults, Others: (address all that apply)

Recommended Referrals: Visual, Auditory, Gross Motor, Communication, Medical, Nutritional, Sleep, Dental, Psychological: (address all that apply)

General programming recommendations based on SLK results:
Learning Media Assessment Results:
This student responded most frequently on the _____ level of responsiveness. Positive responses to sensory items were elicited in the following sensory channels _____.
(see above for a list of appetite items).

Appetite items are real objects found in the student's home or educational environment, for which the student has shown a positive response. Educational programming (activity routines) on the student's responsiveness level, incorporating items from the appetite list (above) are recommended as the most appropriate instructional strategy for this student. Ongoing assessment of additional learning media probes is recommended.

The following activity routines from the SLK Routines Book have been selected for this student, based on the data from the SLK Sensory Response Record reported above. Activity routines already addressing IEP goals can be included here. Routines are appropriate for the following environments: _____

1.
2.
3.

X _____
Teacher of Students with Visual Impairments

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Form 8 Functional Learning Media Checklist

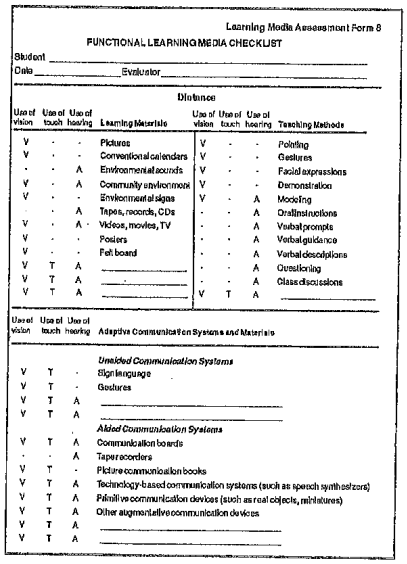
Use with students with additional disabilities

Purpose

- To select appropriate visual, tactual, and/or auditory learning media

Procedures (p. 89)

- **Review** the student's primary and secondary sensory channels.
- **Select** appropriate learning media for existing and future needs. Consider media needed to achieve IEP objectives.
- **Circle** the **V**, **T**, and/or **A** to indicate the specific type of media to be used.
- **Include** recommended media **on** the student's **IEP**.



Learning Media Assessment Form 8

FUNCTIONAL LEARNING MEDIA CHECKLIST

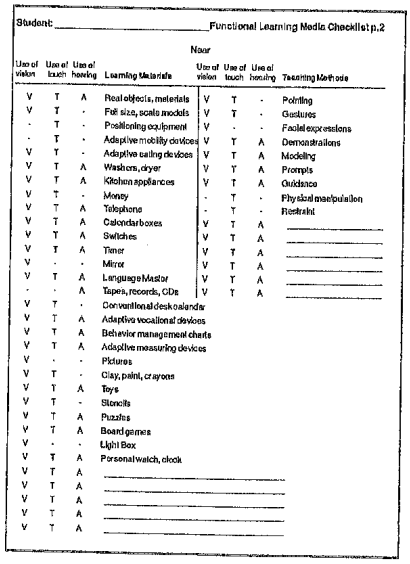
Student _____

Date _____ Evaluator _____

Distance

Use of vision	Use of touch	Use of hearing	Learning Materials	Use of vision	Use of touch	Use of hearing	Teaching Methods
V	-	-	Pictures	V	-	-	Pointing
V	-	-	Conventional calendars	V	-	-	Gestures
-	-	A	Environmental sounds	V	-	-	Facial expressions
V	-	A	Community environment	V	-	-	Demonstration
V	-	-	Environmental signs	V	-	A	Modeling
-	-	A	Tapes, records, CDs	-	-	A	Oral instructions
V	-	A	Videos, movies, TV	-	-	A	Verbal prompts
V	-	-	Posters	-	-	A	Verbal guidance
V	-	-	Felt board	-	-	A	Verbal descriptions
V	T	A	_____	-	-	A	Questioning
V	T	A	_____	-	-	A	Class discussions
V	T	A	_____	V	T	A	_____

Use of vision	Use of touch	Use of hearing	Adaptive Communication Systems and Materials
			Unaided Communication Systems
V	T	-	Sign language
V	T	-	Gestures
V	T	A	_____
V	T	A	_____
			Aided Communication Systems
V	T	A	Communication boards
-	-	A	Tape recorders
V	T	-	Picture communication books
V	T	A	Technology-based communication systems (such as speech synthesizers)
V	T	A	Primitive communication devices (such as real objects, miniatures)
V	T	A	Other augmentative communication devices
V	T	A	_____
V	T	A	_____



Student: _____ Functional Learning Media Checklist p.2

Near

Use of vision	Use of touch	Use of hearing	Learning Materials	Use of vision	Use of touch	Use of hearing	Teaching Methods
V	T	A	Real objects, materials	V	T	-	Pointing
V	T	-	Felt size, scale models	V	T	-	Gestures
-	T	-	Positioning equipment	V	-	-	Facial expressions
-	T	-	Adaptive mobility devices	V	T	A	Demonstrations
V	T	-	Adaptive eating devices	V	T	A	Modeling
V	T	A	Washers, dryer	V	T	A	Prompts
V	T	A	Kitchen appliances	V	T	A	Guidance
V	T	-	Money	-	T	-	Physical manipulation
V	T	A	Telephone	-	T	-	Restraint
V	T	A	Calendar boxes	V	T	A	_____
V	T	A	Switches	V	T	A	_____
V	T	A	Timer	V	T	A	_____
V	-	-	Mirror	V	T	A	_____
V	T	A	Language Master	V	T	A	_____
-	-	A	Tapes, records, CDs	V	T	A	_____
V	T	-	Conventional desk calendar				
V	T	A	Adaptive vocational devices				
V	T	A	Behavior management charts				
V	T	A	Adaptive measuring devices				
V	-	-	Pictures				
V	T	-	Clay, paint, crayons				
V	T	A	Toys				
V	T	-	Stencils				
V	T	A	Puzzles				
V	T	A	Board games				
V	-	-	Light Box				
V	T	A	Personal watch, clock				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				

Learning Media Assessment Form 8

FUNCTIONAL LEARNING MEDIA CHECKLIST

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Student _____

Date _____ Evaluator _____

Distance

Use of vision	Use of touch	Use of hearing	Learning Materials	Use of vision	Use of touch	Use of hearing	Teaching Methods
V	-	-	Pictures	V	-	-	Pointing
V	-	-	Conventional calendars	V	-	-	Gestures
-	-	A	Environmental sounds	V	-	-	Facial expressions
V	-	A	Community environment	V	-	-	Demonstration
V	-	-	Environmental signs	V	-	A	Modeling
-	-	A	Tapes, records, CDs	-	-	A	Oral instructions
V	-	A	Videos, movies, TV	-	-	A	Verbal prompts
V	-	-	Posters	-	-	A	Verbal guidance
V	-	-	Felt board	-	-	A	Verbal descriptions
V	T	A	_____	-	-	A	Questioning
V	T	A	_____	-	-	A	Class discussions
V	T	A	_____	V	T	A	_____

Use of vision	Use of touch	Use of hearing	Adaptive Communication Systems and Materials
			Unaided Communication Systems
V	T	-	Sign language
V	T	-	Gestures
V	T	A	_____
V	T	A	_____
			Aided Communication Systems
V	T	A	Communication boards
-	-	A	Tape recorders
V	T	-	Picture communication books
V	T	A	Technology-based communication systems (such as speech synthesizers)
V	T	A	Primitive communication devices (such as real objects, miniatures)
V	T	A	Other augmentative communication devices
V	T	A	_____
V	T	A	_____

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Student:_____ **Functional Learning Media Checklist p.2**

Near							
Use of vision	Use of touch	Use of hearing	**Learning Materials**	Use of vision	Use of touch	Use of hearing	**Teaching Methods**
V	T	A	Real objects, materials	V	T	-	Pointing
V	T	-	Full size, scale models	V	T	-	Gestures
-	T	-	Positioning equipment	V	-	-	Facial expressions
-	T	-	Adaptive mobility devices	V	T	A	Demonstrations
V	T	-	Adaptive eating devices	V	T	A	Modeling
V	T	A	Washers, dryer	V	T	A	Prompts
V	T	A	Kitchen appliances	V	T	A	Guidance
V	T	-	Money	-	T	-	Physical manipulation
V	T	A	Telephone	-	T	-	Restraint
V	T	A	Calendar boxes	V	T	A	_____
V	T	A	Switches	V	T	A	_____
V	T	A	Timer	V	T	A	_____
V	-	-	Mirror	V	T	A	_____
V	T	A	Language Master	V	T	A	_____
-	-	A	Tapes, records, CDs	V	T	A	_____
V	T	-	Conventional desk calendar				
V	T	A	Adaptive vocational devices				
V	T	A	Behavior management charts				
V	T	A	Adaptive measuring devices				
V	-	-	Pictures				
V	T	-	Clay, paint, crayons				
V	T	A	Toys				
V	T	-	Stencils				
V	T	A	Puzzles				
V	T	A	Board games				
V	-	-	Light Box				
V	T	A	Personal watch, clock				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				

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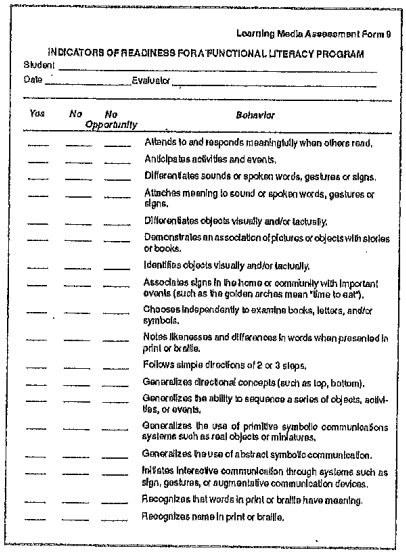
Form 9
Indicators of Readiness for a Functional Literacy Program



Learning Media Assessment Form 9

INDICATORS OF READINESS FOR A FUNCTIONAL LITERACY PROGRAM

Student _____

Date _____ Evaluator _____

Yes	No	No Opportunity	Behavior
____	____	____	Attends to and responds meaningfully when others read.
____	____	____	Anticipates activities and events.
____	____	____	Differentiates sounds or spoken words, gestures or signs.
____	____	____	Attaches meaning to sound or spoken words, gestures or signs.
____	____	____	Differentiates objects visually and/or tactually.
____	____	____	Demonstrates an association of pictures or objects with stories or books.
____	____	____	Identifies objects visually and/or tactually.
____	____	____	Associates signs in the home or community with important events (such as the golden arches mean "time to eat").
____	____	____	Chooses independently to examine books, letters, and/or symbols.
____	____	____	Notes likenesses and differences in words when presented in print or braille.
____	____	____	Follows simple directions of 2 or 3 steps.
____	____	____	Generalizes directional concepts (such as top, bottom).
____	____	____	Generalizes the ability to sequence a series of objects, activities, or events.
____	____	____	Generalizes the use of primitive symbolic communications systems such as real objects or miniatures.
____	____	____	Generalizes the use of abstract symbolic communication.
____	____	____	Initiates interactive communication through systems such as sign, gestures, or augmentative communication devices.
____	____	____	Recognizes that words in print or braille have meaning.
____	____	____	Recognizes name in print or braille.

Use with students with additional disabilities

Purpose

- To determine if a student is ready for a functional literacy program.
- *Use this checklist only if* there is a question about a student's readiness for a functional literacy program. It is not necessary to complete this checklist for students with disabilities so severe that it is clear that the student will not benefit from a functional literacy program.

Procedures (p. 90)

- **Review** the behaviors listed in the checklist.
- Check **Yes** if the student is demonstrating the behavior and **No** if the student is not.
- Check **No Opportunity** if the student has had *no opportunity* to learn a skill. If so, provide appropriate experiences and reassess later.

Interpretation (p. 90)

- Determine the student's readiness for a functional literacy program by examining the student's ability to consistently demonstrate behaviors in the second half of the checklist.
- Consider carefully the appropriateness of a functional literacy program when the student is consistently demonstrating readiness behaviors. The educational team should examine all of the student's needs to determine if functional literacy is an instructional priority.
- Use the three questions at the top of Form 10, *Initial Selection of Functional Literacy Medium,* to assist with making a decision on the appropriateness of a functional literacy program for students who are demonstrating readiness for functional literacy.

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Learning Media Assessment Form 9

INDICATORS OF READINESS FOR A FUNCTIONAL LITERACY PROGRAM

Student _____

Date _____ Evaluator _____

Yes	*No*	*No Opportunity*	*Behavior*
____	____	____	Attends to and responds meaningfully when others read.
____	____	____	Anticipates activities and events.
____	____	____	Differentiates sounds or spoken words, gestures, or signs.
____	____	____	Attaches meaning to sound or spoken words, gestures, or signs.
____	____	____	Differentiates objects visually and/or tactually.
____	____	____	Demonstrates an association of pictures or objects with stories or books.
____	____	____	Identifies objects visually and/or tactually.
____	____	____	Associates signs in the home or community with important events (such as the golden arches mean "time to eat").
____	____	____	Chooses independently to examine books, letters, and/or symbols.
____	____	____	Notes likenesses and differences in words when presented in print or braille.
____	____	____	Follows simple directions of 2 or 3 steps.
____	____	____	Generalizes directional concepts (such as top, bottom).
____	____	____	Generalizes the ability to sequence a series of objects, activities, or events.
____	____	____	Generalizes the use of primitive symbolic communications systems such as real objects or miniatures.
____	____	____	Generalizes the use of abstract symbolic communication.
____	____	____	Initiates interactive communication through systems such as sign, gestures, or augmentative communication devices.
____	____	____	Recognizes that words in print or braille have meaning.
____	____	____	Recognizes name in print or braille.

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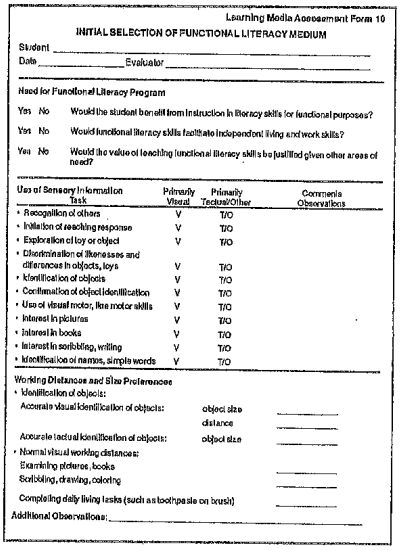
Form 10
Initial Selection of Functional Literacy Medium



Learning Media Assessment Form 10

INITIAL SELECTION OF FUNCTIONAL LITERACY MEDIUM

Student _____

Date _____ Evaluator _____

Need for Functional Literacy Program

Yes No Would the student benefit from instruction in literacy skills for functional purposes?

Yes No Would functional literacy skills facilitate independent living and work skills?

Yes No Would the value of teaching functional literacy skills be justified given other areas of need?

Use of Sensory Information Task	Primarily Visual	Primarily Tactual/Other	Comments Observations
• Recognition of others	V	T/O	
• Initiation of reaching response	V	T/O	
• Exploration of toy or object	V	T/O	
• Discrimination of likenesses and differences in objects, toys	V	T/O	
• Identification of objects	V	T/O	
• Confirmation of object identification	V	T/O	
• Use of visual motor, fine motor skills	V	T/O	
• Interest in pictures	V	T/O	
• Interest in books	V	T/O	
• Interest in scribbling, writing	V	T/O	
• Identification of names, simple words	V	T/O	

Working Distances and Size Preferences

• Identification of objects:

Accurate visual identification of objects: object size _____ distance _____

Accurate tactual identification of objects: object size _____

• Normal visual working distances:

Examining pictures, books _____

Scribbling, drawing, coloring _____

Completing daily living tasks (such as toothpaste on brush) _____

Additional Observations: _____

- **Use for students with additional disabilities**
- **If unsure of a student's readiness for a functional literacy program, use Form 9, *Indicators of Readiness for a Functional Literacy Program***

Purpose

- To select the literacy medium in which the student will begin initial functional literacy instruction

Procedures (pp. 91-92)

- If **Yes** is answered for each of the questions at the top of the form, continue with the assessment.
- In the section on Use of Sensory Information, consider the student's reliance on visual or tactual/other information to complete the listed tasks. **Circle V** for visual and **T/O** for tactual or other (such as auditory) information. If equally efficient, circle both.
- In the section on Working Distances and Size Preferences, **note** preferred **working distances** for completing visual tasks and the **smallest size of objects** that are accurately identified.
- **Include implications** of the visual condition (especially prognosis and stability) and additional disabilities under Additional Observations.

Interpretation (p. 93)

- Consider all information holistically in making a decision. Look for overall patterns that indicate visual efficiency/potential for print reading or tactual efficiency/potential for braille reading.
- Consider the functional literacy tasks that the student will need to accomplish including print or symbol size and availability of tactual information.
- Refer to the *Decision-Making Guide* in Chapter 6 on pages 99 to 101 if needed.

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Learning Media Assessment Form 10

INITIAL SELECTION OF FUNCTIONAL LITERACY MEDIUM

Student _____

Date _____ Evaluator _____

Need for Functional Literacy Program

Yes No Would functional literacy skills facilitate independent living and work skills?

Yes No Would the student benefit from instruction in literacy skills for functional purposes?

Yes No Would the value of teaching functional literacy skills be justified given other areas of need?

Use of Sensory Information Task	Primarily Visual	Primarily Tactual/Other	Comments Observations
• Recognition of others	V	T/O	
• Initiation of reaching response	V	T/O	
• Exploration of toy or object	V	T/O	
• Discrimination of likenesses and differences in objects, toys	V	T/O	
• Identification of objects	V	T/O	
• Confirmation of object identification	V	T/O	
• Use of visual motor, fine motor skills	V	T/O	
• Interest in pictures	V	T/O	
• Interest in books	V	T/O	
• Interest in scribbling, writing	V	T/O	
• Identification of names, simple words	V	T/O	

Working Distances and Size Preferences

• Identification of objects:

Accurate visual identification of objects: object size _____

distance _____

Accurate tactual identification of objects: object size _____

• Normal visual working distances:

Examining pictures, books _____

Scribbling, drawing, coloring _____

Completing daily living tasks (such as toothpaste on brush) _____

Additional Observations: _____

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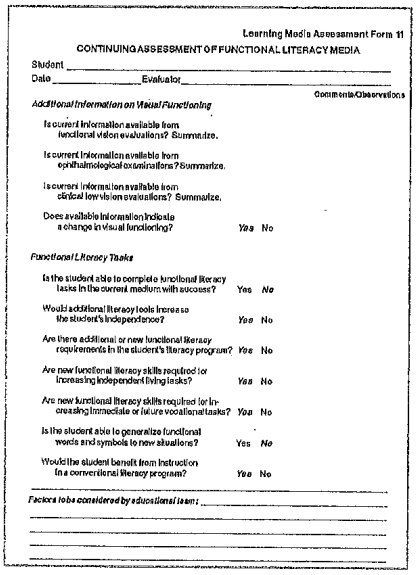
Form 11 Continuing Assessment of Functional Literacy Media

Use for students with additional disabilities who have an existing primary functional literacy medium

Purpose

- To determine if a change should be made in the primary literacy medium
- To determine if additional literacy tools should be added to the student's repertoire



Learning Media Assessment Form 11

CONTINUING ASSESSMENT OF FUNCTIONAL LITERACY MEDIA

Student _____

Date _____ Evaluator _____

Comments/Observations

Additional Information on Visual Functioning

Is current information available from functional vision evaluations? Summarize.

Is current information available from ophthalmological examinations? Summarize.

Is current information available from clinical low vision evaluations? Summarize.

Does available information indicate a change in visual functioning? *Yes* No

Functional Literacy Tasks

Is the student able to complete functional literacy tasks in the current medium with success? Yes *No*

Would additional literacy tools increase the student's independence? *Yes* No

Are there additional or new functional literacy requirements in the student's literacy program? *Yes* No

Are new functional literacy skills required for increasing independent living tasks? *Yes* No

Are new functional literacy skills required for increasing immediate or future vocational tasks? *Yes* No

Is the student able to generalize functional words and symbols to new situations? Yes *No*

Would the student benefit from instruction in a conventional literacy program? *Yes* No

Factors to be considered by educational team: _____

Procedures (p. 94)

- *Visual functioning.* **Review** available information on visual functioning (summarized on Form 1, *General Student Information)* and **consider** if there is a **change** that may influence the student's current literacy medium or media.
- *Functional literacy task completion.* Consider the student's completion of functional literacy tasks and respond by **circling Yes** or **No** to questions in this section.

Interpretation (p. 94)

- If a bold italicized response is circled, consider whether a change in the primary literacy medium is warranted and/or whether literacy tools should be added to the student's repertoire.

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Learning Media Assessment Form 11

CONTINUING ASSESSMENT OF FUNCTIONAL LITERACY MEDIA

Student _____

Date _____ Evaluator _____

Comments/Observations

Additional Information on Visual Functioning

Is current information available from functional vision evaluations? Summarize.

Is current information available from ophthalmological examinations? Summarize.

Is current information available from clinical low vision evaluations? Summarize.

Does available information indicate a change in visual functioning? ***Yes*** No

Functional Literacy Tasks

Is the student able to complete functional literacy tasks in the current medium with success? Yes ***No***

Would additional literacy tools increase the student's independence? ***Yes*** No

Are there additional or new functional literacy requirements in the student's literacy program? ***Yes*** No

Are new functional literacy skills required for increasing independent living tasks? ***Yes*** No

Are new functional literacy skills required for increasing immediate or future vocational tasks? ***Yes*** No

Is the student able to generalize functional words and symbols to new situations? Yes ***No***

Would the student benefit from instruction in a conventional literacy program? ***Yes*** No

Factors to be considered by the educational team: _____

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MODULE FOUR

Form 2: Use of Sensory Channels

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Purpose:
- To determine a student's primary and secondary sensory channels.

Instructions:
- Conduct 3 or more observations lasting 15-20 minutes in various environments.
- During each observation, record and rate 15+ discrete behaviors.
- Record only concrete, observable behaviors.
- Consider ALL sensory channels student used to accomplish task/activity.
- Differentiate primary sensory channel with an "X" in the appropriate box and secondary sensory channel with an "O" in the appropriate box.
- Only specify one sensory channel as primary when absolutely certain.

Assessment:

Observation #1:
Setting/Activity: _____
Observer: _____ **Time:** _____ **Date:** _____

Observed Behavior	Sensory Channel
1. _____	☐ V ☐ T ☐ A
2. _____	☐ V ☐ T ☐ A
3. _____	☐ V ☐ T ☐ A
4. _____	☐ V ☐ T ☐ A
5. _____	☐ V ☐ T ☐ A
6. _____	☐ V ☐ T ☐ A
7. _____	☐ V ☐ T ☐ A
8. _____	☐ V ☐ T ☐ A
9. _____	☐ V ☐ T ☐ A
10. _____	☐ V ☐ T ☐ A
11. _____	☐ V ☐ T ☐ A
12. _____	☐ V ☐ T ☐ A
13. _____	☐ V ☐ T ☐ A
14. _____	☐ V ☐ T ☐ A
15. _____	☐ V ☐ T ☐ A
16. _____	☐ V ☐ T ☐ A
17. _____	☐ V ☐ T ☐ A
18. _____	☐ V ☐ T ☐ A
19. _____	☐ V ☐ T ☐ A

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Form 2: Use of Sensory Channels

Purpose:
- To determine a student's primary and secondary sensory channels.

Instructions:
- Conduct 3 or more observations lasting 15-20 minutes in various environments.
- During each observation, record and rate 15+ discrete behaviors.
- Record only concrete, observable behaviors.
- Consider ALL sensory channels student used to accomplish task/activity.
- Differentiate primary sensory channel with an "X" in the appropriate box and secondary sensory channel with an "O" in the appropriate box.
- Only specify one sensory channel as primary when absolutely certain.

Assessment:

Observation #1:
Setting/Activity: _____
Observer: _____ **Time:** _____ **Date:** _____

Observed Behavior	Sensory Channel
1. _____	☐ V ☐ T ☐ A
2. _____	☐ V ☐ T ☐ A
3. _____	☐ V ☐ T ☐ A
4. _____	☐ V ☐ T ☐ A
5. _____	☐ V ☐ T ☐ A
6. _____	☐ V ☐ T ☐ A
7. _____	☐ V ☐ T ☐ A
8. _____	☐ V ☐ T ☐ A
9. _____	☐ V ☐ T ☐ A
10. _____	☐ V ☐ T ☐ A
11. _____	☐ V ☐ T ☐ A
12. _____	☐ V ☐ T ☐ A
13. _____	☐ V ☐ T ☐ A
14. _____	☐ V ☐ T ☐ A
15. _____	☐ V ☐ T ☐ A
16. _____	☐ V ☐ T ☐ A
17. _____	☐ V ☐ T ☐ A
18. _____	☐ V ☐ T ☐ A
19. _____	☐ V ☐ T ☐ A

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Learning Media Assessment Form 8

FUNCTIONAL LEARNING MEDIA CHECKLIST

Student _____

Date _____ Evaluator _____

Distance

Use of vision	Use of touch	Use of hearing	Learning Materials	Use of vision	Use of touch	Use of hearing	Teaching Methods
V	-	-	Pictures	V	-	-	Pointing
V	-	-	Conventional calendars	V	-	-	Gestures
-	-	A	Environmental sounds	V	-	-	Facial expressions
V	-	A	Community environment	V	-	-	Demonstration
V	-	-	Environmental signs	V	-	A	Modeling
-	-	A	Tapes, records, CDs	-	-	A	Oral instructions
V	-	A	Videos, movies, TV	-	-	A	Verbal prompts
V	-	-	Posters	-	-	A	Verbal guidance
V	-	-	Felt board	-	-	A	Verbal descriptions
V	T	A	_____	-	-	A	Questioning
V	T	A	_____	-	-	A	Class discussions
V	T	A	_____	V	T	A	_____

Use of vision	Use of touch	Use of hearing	Adaptive Communication Systems and Materials
			Unaided Communication Systems
V	T	-	Sign language
V	T	-	Gestures
V	T	A	_____
V	T	A	_____
			Aided Communication Systems
V	T	A	Communication boards
-	-	A	Tape recorders
V	T	-	Picture communication books
V	T	A	Technology-based communication systems (such as speech synthesizers)
V	T	A	Primitive communication devices (such as real objects, miniatures)
V	T	A	Other augmentative communication devices
V	T	A	_____
V	T	A	_____

Student:_____ **Functional Learning Media Checklist p.2** 57

Near

Use of vision	Use of touch	Use of hearing	**Learning Materials**	Use of vision	Use of touch	Use of hearing	**Teaching Methods**
V	T	A	Real objects, materials	V	T	-	Pointing
V	T	-	Full size, scale models	V	T	-	Gestures
-	T	-	Positioning equipment	V	-	-	Facial expressions
-	T	-	Adaptive mobility devices	V	T	A	Demonstrations
V	T	-	Adaptive eating devices	V	T	A	Modeling
V	T	A	Washers, dryer	V	T	A	Prompts
V	T	A	Kitchen appliances	V	T	A	Guidance
V	T	-	Money	-	T	-	Physical manipulation
V	T	A	Telephone	-	T	-	Restraint
V	T	A	Calendar boxes	V	T	A	_____
V	T	A	Switches	V	T	A	_____
V	T	A	Timer	V	T	A	_____
V	-	-	Mirror	V	T	A	_____
V	T	A	Language Master	V	T	A	_____
-	-	A	Tapes, records, CDs	V	T	A	_____
V	T	-	Conventional desk calendar				
V	T	A	Adaptive vocational devices				
V	T	A	Behavior management charts				
V	T	A	Adaptive measuring devices				
V	-	-	Pictures				
V	T	-	Clay, paint, crayons				
V	T	A	Toys				
V	T	-	Stencils				
V	T	A	Puzzles				
V	T	A	Board games				
V	-	-	Light Box				
V	T	A	Personal watch, clock				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				
V	T	A	_____				

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Learning Media Assessment Form 9

INDICATORS OF READINESS FOR A FUNCTIONAL LITERACY PROGRAM

Student _____

Date_____ Evaluator _____

Yes	*No*	*No Opportunity*	*Behavior*
____	____	____	Attends to and responds meaningfully when others read.
____	____	____	Anticipates activities and events.
____	____	____	Differentiates sounds or spoken words, gestures, or signs.
____	____	____	Attaches meaning to sound or spoken words, gestures, or signs.
____	____	____	Differentiates objects visually and/or tactually.
____	____	____	Demonstrates an association of pictures or objects with stories or books.
____	____	____	Identifies objects visually and/or tactually.
____	____	____	Associates signs in the home or community with important events (such as the golden arches mean "time to eat").
____	____	____	Chooses independently to examine books, letters, and/or symbols.
____	____	____	Notes likenesses and differences in words when presented in print or braille.
____	____	____	Follows simple directions of 2 or 3 steps.
____	____	____	Generalizes directional concepts (such as top, bottom).
____	____	____	Generalizes the ability to sequence a series of objects, activities, or events.
____	____	____	Generalizes the use of primitive symbolic communications systems such as real objects or miniatures.
____	____	____	Generalizes the use of abstract symbolic communication.
____	____	____	Initiates interactive communication through systems such as sign, gestures, or augmentative communication devices.
____	____	____	Recognizes that words in print or braille have meaning.
____	____	____	Recognizes name in print or braille.

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SLIDE 111
PRINT COPY

Sherman is a 9 year old boy with cerebral palsy, uses a wheelchair, has limited use of his left arm so uses his right arm and hand for pointing, has cognitive impairment, low vision, and seizures. Sherman was observed over 3 different times of his school day. His primary sensory channel is visual and secondary is tactual. Sherman will look at objects or pictures from a distance of approximately 8 inches and responds best when it is presented on his right side. He likes the colors red, blue and green and can match and sort using these color codes. Sherman participates in his classroom calendar time using a large print calendar, but has difficulty finding the correct day of the week.

(a)

ADDITIONAL RESOURCES

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Resources

American Printing House for the Blind: www.aph.or

Dr. Dixie Mercer Online Webinar

Family Connect: www.familyconnect.org

Individual Sensory Learning Profile Interview (ISLPI):
Anthony, T.L. (2003a). *Individual sensory learning profile interview.* Chapel Hill, NC: Early Intervention Training Center for Infants and Toddlers With Visual Impairments, FPG Child Development Institute, UNC-CH.

Iowa Braille School: www.iowa-braille.k12.ia.us

Learning Media Assessment of Students with Visual Impairments: A Resource Guide for Teachers (2nd ed.):
Koenig, A. J., & Holbrook, M, C. (1995). Texas School for the Blind www.tsbvi.org.

Literacy for Children with Combined Vision and Hearing Loss:
www.literacy.nationaldb.org

Paths to Literacy: Perkins School for the Blind
www.pathstoliteracy.org

Sensory Learning Kit Guidebook and Assessment Forms
Smith, M., M. Ed., TVI. (2005). SLK Guidebook and Assessment Forms. Louisville, KY: American Printing

Sensory Learning Kit Webinar: Millie Smith
https://youtube.be/Qo_8rop/Vac (or search "Millie Smith" or Sensory Learning Kit in YouTube)

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Assessment of Learning and Literacy Media Report Template

Student:

Date of Birth:

School:

Grade:

Date of Assessment:

Evaluator:
Teacher of Students with Visual Impairments

Purpose of this Assessment:

Review of Records:
(Write a summary of the medical information you reviewed. What is important to know when writing recommendations for this student?)

Medical Reports
Functional Vision Evaluation
Academic Records

Information from parent/teacher interviews:
(What is the most important information you learned from the interviews and who said it?)

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Report from Sensory Learning Channels (Form 2):
Primary Sensory Channel
Is there a Secondary Sensory Channel?

Report from Functional Learning Media Checklist (Form 8):
(What did you discover as the recommended media for this student? Do the sensory channels observed on this form fall in line with what you observed using Form2?)

Report from Indicators of Readiness for a Functional Literacy Program (Form 9):
(It is not necessary to use this form if the students disabilities preclude them from functional literacy and other literacy strategies are more effective)

Report From Other Checklists or Forms You Used:
Sensory Learning Kit (Millie Smith)
Individual Sensory Learning Profile (Tanni Anthony)
Initial Selection of Functional Literacy Medium (Form 10, Koenig & Holbrook, 2005)
Continuing Assessment of Functional Literacy Media (Form 11, Koenig & Holbrook, 2005)

Summary of All Data Collected:

Recommendations:
(Recommendations need to tie to the ALLM and are based on students' needs)

Signature

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Assessment of Learning and Literacy Media

Student: Sally P. Daniels
Date of Birth: June 1, 2004
School: Grape Academy
Grade: 7th
Date of Assessment: September 2016
Evaluator: Frankie Smith
Teacher of Students with Visual Impairments

Purpose of this Assessment:

An assessment of learning and literacy media was requested as a part of Sally's comprehensive evaluation. Sally is new to this school this year. This assessment is critical in providing information on the most appropriate learning and literacy media for students with visual impairments including those with additional disabilities. The assessment of learning and literacy media generates data from observations, interviews, and checklists. The data is an important part of the IEP team process and is used to determine the best educational programming for the student. The best educational programming will increase Sally's access to and participation in classroom activities.

Procedures for Assessment

Sally's transdisciplinary team includes her mother, her classroom teacher, two teaching assistants, the speech language pathologist, the occupational therapist, the physical therapist, the school nurse, and the teacher of students with visual impairments. This Assessment of Learning and Literacy Media included:

1. Review of records including medical records
2. The Sensory Learning Kit to determine arousal states and times
3. Interviews of the mother and classroom teacher
4. Observations of Sensory Channels on 3 separate occasions
5. Functional Learning Checklists 8 and 9 (Koenig & Holbrook)

Background and Review of Records:

Sally is a 13-year-old with severe cerebral palsy, cognitive delay, seizure disorder, and cortical visual impairment. She is enrolled in a self-contained special education classroom at the middle school in her community. She lives with her mother, grandmother, and two older siblings. Previous assessments indicate that Sally is dependent upon caregivers for all self-help tasks. She is tube fed and communicates when diaper is soiled by crying. Sally's motor skills include the abilities

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to move her head from side to side, lift her left hand at the wrist, and blink her eyes voluntarily.

Review of Functional Vision Assessment

Sally communicates by smiling and cooing to indicate pleasure, and by making louder vocalizations and rapidly moving her head from side to side to indicate displeasure. During the assessment she was presented with objects and pictures and her responses were noted. The lighting in the classroom was typical overhead lighting and she was facing away from the windows (they were at her back).

Visually, Sally likes the colors red and yellow. She will look at large, simple, pictures that are mostly red or yellow as the predominant color and when presented on a high contrasting background. Her best viewing distance seemed to be within 8 inches from her eyes. Sally pressed a large red switch placed on a black cloth background after a simple request or yes/no question. In order to first get her visual attention the objects were moved back and forth until she directed her eyes in the direction of the objects. Her wait time for her to get her eyes oriented to the object was between 5-7 seconds. At that time she could retain visual attention for about 15 seconds.

Sally uses a wheelchair for transportation around the school and the outside environment. Her wheelchair does have a tray attached to it that has a 1-inch rim around the outside. Her last wheelchair evaluation was conducted in February 2015. At that time she received the wheelchair she is currently using.

Sensory Learning Kit Arousal States

Sally's predominant level of arousal is Drowsy. Her targeted level of arousal is Quiet-Awake/Active/Awake. This assessment was conducted in order to determine what kinds of sensory stimuli are most effective in changing Sally's state of arousal from Drowsy to Alert and to see what sensory stimuli elicited purposeful responses. Side effects form Sally's medications and nutrition schedule affect her levels of arousal. She tends to be drowsier during the hour after she takes her medications, and she tends to be slightly fussy the half hour preceding her feeding.

Environmental Characteristics

Certain environmental characteristics were present most often during the times Sally was alert. The temperature was neutral to warm, the lighting was normal, there were no strong aromas, the noise level was low, and Sally's location within the classroom changed about every 20 minutes. The social atmosphere included one-to-one direct interactions with a nondisabled peer and three different staff

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members. The activity level was average to slow. The motor characteristics present during alert states included movements with slow, continuous tempo in a side-to side or back and forth direction with full body contact provided and normal tone maintained.

Information from Parent Interview:

Sally's mother indicated that she plays with toys that are hooked up to a large on/off button switch at home. Her mother rests Sally's hand on the switch and then Sally presses it. Sally likes music and will listen to music or a short story with headphones, which she tolerates for about 10 minutes.

Information from Teacher Interview:

Sally is a happy student when she is at school. She will respond to yes/no questions with either a headshake or vocalization. Currently, Sally does not have a communication board at this time. The speech language pathologist and classroom teacher would like to develop a simple 2 or 3 item communication board based on input from the TVI. Sally does have an instructional aide to assist with changing her position in her wheelchair and around the classroom. The teacher is looking for strategies that will make the educational activities more meaningful for Sally and increase her active participation in indicating her wants, needs, and knowledge.

Report from Sensory Learning Channels:

The Sensory Channels form from the Koenig and Holbrook LMA book was used during 3 different observation times. Sally was observed in the classroom during the morning opening calendar time, during lunchtime, and during her occupational therapy session. All of these observations took place in her classroom. After observing and noting Sally's sensory responses to educational and other classroom activities, Sally's primary sensory channel was auditory and her secondary was visual. During the 3 observations, Sally indicated the use of her auditory sense by smiling, turning head, and making verbalizations when her name was called or she was asked a question. In the auditory channel low-pitched sounds/music with soft intensity, and intermittent tempo worked best. In the visual channel, Sally maintained the Alert state when presented with shiny, red, or yellow objects with direct, medium-intensity illumination and high contrast background.

Due to Sally's cerebral palsy it is difficult for her to grasp and explore objects tactually. However, Sally can move her wrist and press a large button switch. She used the large button switch during an occupational therapy session observation.

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Report from Functional Learning Media Checklists:

Using Form 8 from Koenig and Holbrook (1995) LMA book, Sally used her auditory sensory channel when presented with CDs, environmental sounds, verbal demonstrations, oral instructions, and verbal prompts and guidance. She used her visual sensory channel when presented with red or yellow high contrast pictures of objects, the light box, real objects that are a size that she can touch or nudge around on her tray, and during classroom demonstrations (the demonstration needs to be brought to her wheelchair tray so she has her best use of vision).

Using Form 9 from Koenig and Holbrook (1995) LMA book, Sally turns to familiar faces, voices, and typical sounds in her classroom. She will briefly demonstrate an Alert state when presented with music she enjoys or knows. She can demonstrate meaningful responses to familiar simple yes/no questions. Sally demonstrates the use of a large button switch at home and at school. At this time she is just emerging at the readiness stage for a more functional literacy program.

Summary:

Sally demonstrates a primary sensory channel of auditory and a secondary sensory channel of visual as her two preferred sensory channels for accessing and responding to educational activities. Sally demonstrates an Alert state throughout meaningful activities and activities presented in the colors of red or yellow. Auditory stimulation from low-pitched sounds with soft intensity may help bring her from a Drowsy state back to an Alert state.

Recommendations:

1. Educational activities are best provided with auditory input and followed or accompanied by visual input. Her primary sensory channel is auditory and her secondary is visual.
2. The highest-priority instructional activities are best completed during Sally's Alert state (9:30-11:00 am and 1:30-2:30 pm).
3. Try to avoid educational activities before feeding or for an hour after Sally takes her medications.
4. Sally would benefit from average to slow pacing of educational activities.
5. Visual attention is best completed using shiny, brightly colored (red/yellow) objects presented on a high contrasting background.
6. Sally can best observe pictures if they are simple, uncluttered, and presented on a high contrast background (yellow on black background).

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7. Sally can best participate in or observe demonstrations when they are brought to her wheelchair tray.
8. Her best viewing distance is within 8-inches from her eyes.
9. Her wait time for viewing objects is about 5 -7 seconds.
10. Caregivers need to avoid wearing perfume.
11. The classroom environment needs to be visually clutter-free and mostly quiet when asking Sally to respond or attend to educational activities.

Thank you for the opportunity to meet Sally and work with her on this Assessment of Learning and Literacy Media. If you have any questions, please feel free to contact me at: 555-333-4444.

Sincerely,

Frankie Smith

Frankie Smith, M.Ed.
Teacher of Students with Visual Impairments

Copies:
Classroom teacher
Mother
District Special Education Office

Adapted from: Smith, M. & Levack, N. (1997), *Teaching Students with Visual and Multiple Disabilities*. Texas School for the Blind and Visually Impaired, p.96-97.

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Form 2: Use of Sensory Channels

Purpose:
- To determine a student's primary and secondary sensory channels.

Instructions:
- Conduct 3 or more observations lasting 15-20 minutes in various environments.
- During each observation, record and rate 15+ discrete behaviors.
- Record only concrete, observable behaviors.
- Consider ALL sensory channels student used to accomplish task/activity.
- Differentiate primary sensory channel with an "X" in the appropriate box and secondary sensory channel with an "O" in the appropriate box.
- Only specify one sensory channel as primary when absolutely certain.

Assessment:

Observation #1:
Setting/Activity: _____
Observer: _____ **Time:** _____ **Date:** _____

Observed Behavior	Sensory Channel
1. _____	☐ V ☐ T ☐ A
2. _____	☐ V ☐ T ☐ A
3. _____	☐ V ☐ T ☐ A
4. _____	☐ V ☐ T ☐ A
5. _____	☐ V ☐ T ☐ A
_____	☐ V ☐ T ☐ A
7. _____	☐ V ☐ T ☐ A
8. _____	☐ V ☐ T ☐ A
9. _____	☐ V ☐ T ☐ A
10. _____	☐ V ☐ T ☐ A
11. _____	☐ V ☐ T ☐ A
12. _____	☐ V ☐ T ☐ A
13. _____	☐ V ☐ T ☐ A
14. _____	☐ V ☐ T ☐ A
15. _____	☐ V ☐ T ☐ A
16. _____	☐ V ☐ T ☐ A
17. _____	☐ V ☐ T ☐ A
_____	☐ V ☐ T ☐ A
19. _____	☐ V ☐ T ☐ A

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The Sensory Learning Kit

Author: Millie Smith

Publisher: American Printing House for the Blind

(A summary of Millie Smith's presentation about teaching children who are in Piaget's first stage of cognitive development)

Piaget's first stage of cognitive development usually occurs from birth to about age 2. During this stage, children learn about themselves and their environment through sensations and movement. Mental activity is more likely to occur as a result of active manipulations of objects. The child learns that s/he is separate from the environment and that people and things in the environment continue to exist even though they may be outside the reach of the senses. Teaching a child in this stage should be geared to the sensorimotor system. If a person is chronologically older, but still has a cognitive age of 0-2, working with the sensorimotor system continues to be appropriate.

Educational interventions during Piaget's first phase of cognitive development should build a positively bonded relationship between the learner and the partner, stimulate curiosity, motivate interaction and develop skills through social experiences that facilitate access to sensory information.

GOALS FOR THE FIRST STAGE OF COGNITIVE DEVELOPMENT

Maximize social availability. Learning can happen independently, but teaching is always a social experience.

From the learner's point of view:

- My body is comfortable
- I know where I am and who you are
- I trust you enough to want to share an experience with you

From the teacher's point of view:

- I know you are a unique individual
- I know that each of us contributes to the world in different and significant ways
- I value you enough to want our shared experience to be pleasurable and effective for you

Increase quality of life. Increase agency, anticipation, and participation to increase quality of life.

- Agency: having some influence over people and events
- Anticipation: something to look forward to

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- Participation: shared experience

Agency skills are cognitive, communicative, and motor.

Cognitive skills are:

- Object exploration
- Object permanence and search
- Imitation
- Causality
- Means/end
- Spatial relationships

Communication may look like this:

- Requesting: eye gaze, point, vocalize, gesture, smile
- Refusing: head turn, vocalize, frown, gesture, push
- Commenting: manipulate object, gesture
- Questioning: point, vocalize, facial expression

Motor responses may look like this:

- Eye point, hand point, reach, touch, give (grasp/release), push, press, place, and scan

Instructional Strategies:

- Minimize stress through the use of routines that are familiar, predictable, consistent, and frequent
- Encourage anticipation and participation through routines that offer opportunities to communicate and develop skills
- Routine levels encourage different cognitive skills

Stages of Alertness:

- Quiet alert: attention to stimulation provided by partner
    - Goal is to create and maintain alertness
    - Learner begins to realize that expressions of pleasure and displeasure affect the behavior of his/her partner
- Active alert: exploration of learning media
    - Goal is development of object schemes, imitation, causality, object permanence
    - Learner begins to use a variety of behaviors to request, reject, and sustain specific interactions

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- Partial participation: outcome is directed motor sequences
    - Goal is the development of means/ends, and spatial relationships
    - Learner begins to use objects to request, refuse, comment, question, and organize

Touching the Learner:

- Position hands and eyes for maximum access
- Facilitate with cues
- Facilitate with hand under hand assistance when possible – it is less intrusive than hand over hand and leaves more of the student's hand free to feel objects

Smith, Millie. (2009). *American Printing House for the Blind Sensory Learning Kit.* Presented in Roseville, MN.

Piaget's Cognitive Stages. (n.d.).

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Keys to Accessing Information with Students with Visual Impairments and Additional Disabilities

(Adapted from conference presentation by Millie Smith, 2014)

These are changes you may need to make when conducting an Assessment of Learning and Literacy Media with students with visual impairments and additional disabilities.

CHANGE: OBSERVATON PROCEDURE

- On-going observation, different days, over different times
- Observe in frequent environments

CHANGE: ASSESSMENT OF LEARNING AND LITERACY MEDIA

- Analysis of relative strengths of all channels
- Media – assessed appetites and aversions
- Presewnt levels of sensory performance (response levels, attention, exploration, function)
- Accommodations: response delays, pacing of instruction, tactile strategies, positioning

CHANGE: ASSESSMENT TOOLS FOR SENSORI MOTOR LEVEL STUDENT

- The Sensory Learning Kit
- Every Move Counts
- Individual Sensory Learning Profile

Quizlet

From: Quizlet.com 74

C. Learning Media Assessment - Sensory Learning Kit (SLK): Assessment Tools

14 terms

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What is the Sensory Response Summary (SRS)? These are the red edged forms.	The SRS constitutes a robust record review of the student's recent and past medical and sensory history.	☆
How will I complete the Sensory Response Summary (SRS) red edged forms?	You and/or a team member will access the student's cumulative records to complete all areas of the SRS. In addition, you may need to ask questions of the student's parents, ophthalmologist, related service providers or others until you have a complete record on the student.	☆
What will I do with the results of the Sensory Response Summary (SRS) red edged forms?	You will use the results of the SRS to help the team plan for the student assessment session, the Sensory Response Record (SRR) which is the green edged form. You will have info to indicate which sensory channels to assess and what types of items to use to elicit pleasurable responses.	☆
What is the Arousal State Profile (ASP)? These are the blue edged forms.	This profile is used only when it is difficult to determine when the student is alert and ready to learn. It is typically used for minimally responsive students, to pinpoint times when assessment or instruction is likely to be successful.	☆
How will I complete the Arousal State Profile(ASP), the blue edged forms?	As with all the forms, you will follow the written directions included in the assessment guide. It is important to get a variety of observations at varying times during the day to collect data on the student's state of alertness during the school day.	☆
What will I learn from the	From the data taken during Arousal State Profile	

Arousal State Profile (ASP)?	observations you will be able to pinpoint the time or times of day when the student is most likely to be alert and ready to learn. Schedule assessment sessions accordingly.	75 ☆
What is the Sensory Response Record (SRR), green edged forms?	This important form is used to document the student's responses to items presented according to the SLK directions. A number of data points are collected for each presentation and scored individually by each assessor. Scores are compared and combined to get final scores.	☆
What are the data points collected on each item presented in the Sensory Response Record (SRR)?	The SRR data points include: item presented, sensory channel, was response positive or negative, any delay in the response, intensity of response, at which of the 4 levels, ES, QA, AA, PP, did the student respond?	☆
What are the 4 response levels used in the SRR?	Extended State, ES, student is cranky, sleepy, ill, not ready to learn; Quiet Alert, QA, in an alert state, though not necessarily tuned in to item; Active Alert, AA, indicates student is showing active interest in item; Partial Participation, PP, student participates to the extent possible.	☆
What will I do with the results of the Sensory Response Record (SRR) green edged forms?	Sensory Response Record data is analyzed to determine the following: student's preferred items, amount of delay in responding, if any, intensity of student response, and response level: ES, QA, AA, PP. The most highly motivating items are the student's "learning or literacy media"	☆
What is the Appetite/Aversion List (AAL) purple edged forms?	Once the Sensory Response Record is administered and the results scored by as many members of the team as possible, never fewer than two team members, a list of the most intensely pleasurable items will be made.	☆