Structured abstract: Introduction: The purpose of this study was to begin validation of a scale that will be used by teachers of students with visual impairments to determine appropriate recommended type and frequency of services for their students based on identified student need. Methods: Validity and reliability of the Visual Impairment Scale of Service Intensity of Texas (VISSIT) were evaluated using a mixed-methods survey research design. Participants used the VISSIT to determine services for at least one student and then completed an electronic survey regarding the use of the tool. Results: Twenty-five participants completed at least one VISSIT and completed the electronic survey. Social validity was supported by 92% of the participants stating that the tool was easy to use as a way to determine service time and was also supported by 96% of the participants stating that they would use the VISSIT for determining the type and amount of service recommended for their students. Consequential validity was supported by 71% of the participants stating that the tool’s results matched their professional judgment regarding student need and recommended service time and was also supported by 75% of the participants stating that the tool’s results directly translated into type and amount of service they would recommend. Internal consistency reliability was demonstrated by the result of a factor analysis of Cronbach’s Alpha statistic of .747 for the entire set of VISSIT items. Discussion: The results demonstrate that the VISSIT is a moderately valid and reliable tool for helping teachers of students with visual impairments determine the type and amount of visual impairment services based on individual student need. Implications for practitioners: The VISSIT is a tool that itinerant teachers of students with visual impairments can use to determine the appropriate amount of service for all students on their caseloads and offers a more objective way to recommend service intensity based on student need.
Determining type and amount of service to recommend for each individual student is one of the most challenging decisions a teacher of students with visual impairments must make (AER Division 16, 2010; Correa-Torres & Howell, 2004). The success of every student depends on the right combination of direct, specially designed instruction from the teacher of students with visual impairments and appropriate levels of support for everyone on the educational team, including classroom teachers, paraeducators, family members, related service providers, other school personnel, and community providers (Huebner, Merk-Adam, Stryker, & Wolffe, 2004; Pogrund, 2008; Spungin & Ferrell, 2007; Silberman & Sacks, 2007).

The Individuals with Disabilities Education Act (IDEA) requires that instructional goals, including those goals related to students’ visual impairments, be based upon evaluations of present levels of performance (United States Department of Education, 2004, [§300.320(a)(1)]). After reviewing existing models (Durkel & Miller, 2009; Michigan Department of Education, 2013; Toelle & Blankenship, 2008), the Service Intensity Subcommittee of the Texas Action Committee for the Education of Students with Visual Impairments, a group of stakeholders endorsed by the Texas Education Agency and concerned with appropriate educational services for students with visual impairments, decided to create a tool to determine recommendations for student programming based upon evaluation results in all areas related to visual impairments as required by IDEA. The subcommittee found that existing tools used to determine the amount of time teachers of students with visual impairments need to directly instruct their students or collaboratively consult with other team members (hereafter referred to as “service time”) provided little guidance regarding time, type, and intensity of services, and that the data used to make such determinations did not address all areas related to the individual needs of students. Additionally, the subcommittee found that several service determination models included workload items like material preparation and travel, which are not based on student need. Finally, members determined that other models did not effectively address the identified needs of students with visual impairments related to the expanded core curriculum (ECC) (Hatlen, 1996; Huebner et al., 2004). After months of dialogue, the subcommittee determined that the best way to select appropriate service levels would be to use a scale that uses data from a full

The authors would like to acknowledge the other members of the Service Intensity Subcommittee of the Texas Action Committee for the Education of Students with Visual Impairments who assisted them with the creation and development of VISSIT: Chrissy Cowan, Outreach Department, Texas School for the Blind and Visually Impaired (TSBVI), Austin; Kitra Gray, Region 10 Education Service Center (ESC), Richardson, Texas; Tracy Hallak, Stephen F. Austin State University (SFASU), Nacogdoches, Texas; Cyral Miller, Outreach Department, TSBVI; Cecilia Robinson, Region 4 ESC, Houston, Texas; Mary Ann Siller, Richardson Independent School District, Richardson, Texas; and Frankie Swift (SFASU). The VISSIT can be found at <www.tsbvi.edu/vissit>. The website includes downloadable electronic PDF and Word versions of the scale along with instructions, frequently-asked questions, and sample VISSITs.
evaluation of the student’s strengths and needs. The subcommittee created the Visual Impairment Scale of Service Intensity of Texas (VISSIT, 2014), a scale used to determine visual impairment service time based on the needs of students with visual impairments in all areas of the ECC.

The evaluation of students with visual impairments includes the most recent functional vision evaluation, learning media assessment, and relevant current evaluations in the ECC areas:

- compensatory skills,
- assistive technology,
- social interaction skills,
- independent living skills,
- career education,
- sensory efficiency skills,
- recreation and leisure skills,
- orientation and mobility, and
- self-determination.

Evaluation, instruction, and collaboration in the ECC are the primary roles of teachers of students with visual impairments (Hatlen, 1996; Huebner et al., 2004). The VISSIT focuses on the nine areas of the ECC to determine the type and amount of services to recommend for students on the caseloads of itinerant teachers. Each student’s individualized education program (IEP) committee typically relies on the teacher of students with visual impairments for this recommendation. The VISSIT is intended to support teachers in quantifying the recommended service time to present to the IEP committee. Currently, recommendations for service time greatly vary from teacher to teacher and from student to student. The variation may not be fully explained by the characteristics or circumstances of individual students, but is more likely due to the lack of guidelines or standardized methods for determining appropriate service times that take into account all of the needs associated with students’ visual impairments without including unrelated factors like the time needed to prepare materials or for teachers to travel from one school to another.

The VISSIT was designed to provide guidance so that all students with visual impairments get the benefit of the appropriate amount and type of service based on their specific needs in relation to the ECC. This determination should not necessarily be based on a student’s acuity level, age, or the severity or type of additional disabilities. Although an identified visual impairment may be used to qualify a student for services, the intensity of the service provided should be determined by assessing all of the student’s needs. Evaluation data from a comprehensive ECC evaluation identifies areas in which the individual student needs the teacher’s intervention to be successful or in which his team needs support. Since evaluation in every area related to the student’s disability or disabilities drives the development of the IEP, the data from the ECC evaluation should be the basis for planning the type and amount of services required by a student with visual impairment. Without such focus, students with similar conditions, ages, and acuity levels would have nearly identical types and amounts of services regardless of their identified needs related to the ECC. One cannot assume that one student with a particular visual diagnosis or acuity and other characteristics will need the same amount or type of service as a similar student. The unique approach of the VISSIT is that it focuses on the needs of the individual student in each area of the ECC.
The VISSIT guides teachers of students with visual impairments in translating intensity of need for each area of the ECC into service type, amount, and frequency of service. For the purposes of this scale, type of service is defined in two categories: direct intervention from a teacher of students with visual impairments and collaborative consultation between the teacher and others on the student’s educational team, including family members. The VISSIT does not address the teacher’s overall workload. Although activities that are part of the teaching workload, such as preparation of materials and travel, are essential to meet the needs of students, they are related to the needs of teachers rather than those of students. As such, these factors should not be associated with determining the student’s need for services from the teacher. These workload factors need to be considered after using the VISSIT when determining caseload size, but the VISSIT supports the belief that student need is the highest, most important priority in providing appropriate services.

Before the VISSIT was disseminated as a tool for field testing, its content and format were revised multiple times based on the input of subcommittee members and pilot testing of the scale. The tool was pilot tested through multiple iterations by teachers of students with visual impairments in the field, and results were reviewed and used by the subcommittee to develop the current version.

The purpose of the study presented here was to begin the validation process of a scale that will be used by teachers of students with visual impairments to determine and recommend an appropriate type, amount, and frequency of services for students on their caseloads. Social validity, consequential validity, and internal consistency reliability of the scale were examined. All members of the Service Intensity Subcommittee approved the use of the VISSIT for this study at its June 2013 meeting. This study was also approved by the institutional review boards at Texas Tech University in Lubbock, Texas, and Stephen F. Austin State University in Nacogdoches, Texas. Informed consent was obtained from all participants.

**Methods**

This study evaluated validity and reliability aspects of the scale using mixed-methods survey research with purposive sampling. An electronic questionnaire was used as the data-collection tool. Both quantitative data (in the form of Likert-scale questions) and qualitative data (in the form of open-ended, free-response questions) were gathered. The quantitative data gathered from the survey offer the information needed to examine specific aspects of the validity and reliability of the scale. The qualitative data gathered from the survey offer information related to the format of the tool and time needed to complete the tool.

This study took place during one 18-week fall semester. Teachers of students with visual impairments used the VISSIT to determine the need for services of at least one student on their caseloads who needed an initial referral evaluation or three-year reevaluation.

**Recruitment**

To recruit participants who had expertise in the field of visual impairment, the researchers used the purposive sampling method called expert sampling. In expert
sampling, the opinions or evaluation of individuals with a relatively high level of knowledge (Singh, 2007) or a particular expertise are identified to respond to research. In this instance, experts were defined as certified itinerant teachers of students with visual impairments who met the following criteria: completed all requirements of a university training program, passed both Texas state certification examinations, had more than three years’ experience as an itinerant teacher of students with visual impairments, and participated in professional development in the field of visual impairment. Additional identification characteristics included receipt of outstanding teaching or service awards, service as mentors, and demonstration of quality teaching based on the observation of experts.

A group of veteran regional and statewide visual impairment leadership personnel, including regional Education Service Center (ESC) visual impairment consultants and specialists working in the Outreach Department of the Texas School for the Blind and Visually Impaired (TSBVI), were asked to assist in the recruitment of teachers of students with visual impairments in Texas who met the sampling criteria. The leadership personnel contacted, via e-mail, the prospective expert participants based on the characteristics required for this study. The nominated teachers who were interested in participating responded to the researchers via e-mail and agreed to use the VISSIT, which served as their consent to participate. Of those nominated, a total of 38 teachers agreed to participate in the study. Of the 38 who initially responded to the call for participation, 25 completed the required procedures detailed below.

**PARTICIPANTS**

The returned VISSITs totaled 81, sent in by 25 participants. All 25 of those who returned their VISSITs also completed the electronic survey regarding its use. The participants, representing 12 of the 20 ESC regions of Texas, reflected the geographic diversity of Texas, including urban, suburban, and rural communities.

**PROCEDURE**

At the beginning of the semester, the researchers sent recruitment letters to the 20 regional ESC vision consultants in Texas and TSBVI outreach specialists with instructions to forward a second recruitment letter to those teachers of students with visual impairments who met the participant criteria. The researchers then electronically disseminated a copy of the VISSIT to each teacher willing to participate. See Figure 1 for a selected sample of the VISSIT. The entire scale is available on the website of TSBVI at <www.tsbvi.edu/vissit>.

Each participant selected a student or students on his or her caseload and conducted ECC evaluations or reviewed all current evaluation results for the student or students. The teachers then used the VISSIT to determine recommended service time for each student based on evaluation results. Twenty-five teachers of students with visual impairments used the VISSIT to determine need for services for any student who needed an initial referral evaluation or a three-year reevaluation during the fall semester of 2013. All participants were required to collect or review all current evaluation information for each student with whom they used the VISSIT. Due to the wide diversity of student populations and teaching environments of the
participants, there was no requirement to use the same evaluation tools and methods. The researchers relied on the participants’ expert judgment to determine which evaluations were used to evaluate their students’ present level of performance in each ECC area. Each participant was asked to use the VISSIT with at least one student, but they could use the VISSIT as many times as needed during the semester. After the participant completed the VISSIT for at least one student, the participant excluded the student’s identifying information from the paperwork and mailed the completed protocol to the researchers.

After the researchers received the protocols, participants were e-mailed a link for an anonymous electronic survey that was designed to gather information about using the VISSIT. Qualtrics, an Internet-based survey generator, was used to collect survey data. The electronic survey included quantitative questions, which were formulated to garner information about validity and reliability of the VISSIT, and qualitative questions, which were formulated to gather opinions about the tool and suggestions for its revision. Data collection ended in January 2014, and data analysis commenced at that time.

**Results**

Descriptive statistics were used to determine the means and standard deviations for each quantitative question asked regarding various aspects of using the VISSIT. For 11 questions on the electronic survey, the participants were asked to rate their opinions on a 5-point Likert scale.
scale, with 5 being the highest rating and 1 being the lowest rating that could be selected. Means closer to 5 indicated very positive responses. Two questions were yes-or-no questions. The answer “yes” was represented by a value of 2, and the answer “no” was represented by a value of 1. For these questions, means that were closer to 2 indicated more affirmative responses. Table 1 lists the Likert scale questions, the mean, the standard deviation, and the number of respondents for each question on the survey.

The data analysis of the survey results indicated that the version of the VISSIT used for the purposes of this study was moderately valid and reliable. The results of the data analysis supported consequen-
tial and social validity, as well as internal consistency reliability, of the tool.

Consequential validity refers to the participants’ opinions of the “intended and unintended consequences of test [or tool] interpretation and use” (Messick, 1989, p. 14). The primary intended consequence of the use of the VISSIT is to allow a teacher of students with visual impairments to determine service time based solely on student need. Consequential validity of the VISSIT is supported by 71% of the participants stating that the tool’s results matched their professional judgment regarding student need and recommended service time, and by 75% of the participants stating that the tool’s results directly translated into the type and amount of service they would recommend. The intended consequence of the use of the VISSIT is supported by the responses of the participants, providing support for the tool’s consequential validity.

The elements of the subcommittee’s development of the scale, as described in the Procedures section above, provided support for the consequential validity of the tool. Those elements included a clear specification of the purpose of the tool, the target population with which the VISSIT is designed to be used, the evidence to be collected by the tool, decision-making rules, reporting requirements, and the boundaries of the tool (Suen & Rzasa, 2004). Including these elements in the VISSIT ensured that any unintended consequences of use of the tool would be avoided.

Social validity, which “refers to the acceptability of and satisfaction with intervention procedures” (Luiselli & Reed, 2011, p. 1406), was used to measure the teachers of students with visual impairments’ acceptability and satisfaction in regard to the tool’s usefulness and effectiveness to determine service time for students with visual impairments. Social validity was supported by 92% of the participants stating that the VISSIT was easy to use as a tool to determine service time. Social validity of the tool’s usefulness was also supported by 96% of the participants, who said that they would use the VISSIT in the future for determining the type and amount of service recommended for students with visual impairments.

For reliability, internal consistency reliability was analyzed using the Cronbach’s alpha statistic. Cronbach’s alpha is used for measuring “how well a set of variables or items measures a single, unidimensional latent construct” (Andrew, Pedersen, & McEvoy, 2011, p. 202). The construct measured by the set of all items on the VISSIT was student need for service as it translates into service time, and student need was represented by a final score on the VISSIT. The set of items was evaluated by asking the participants if the final score indicating student need for services translated into the type and amount of service recommended for the student. The rating scale used by the participants to evaluate the entire set of items was a Likert scale of 1 to 5, with 1 being the rating that indicated the final score represented the student’s need for service. A factor analysis was conducted on the survey results, and the resulting Cronbach’s alpha for internal consistency reliability for the set of all items on the entire VISSIT was .747. A scale is found to be reliable at .7 and over for the Cronbach’s alpha score. The Cronbach’s Alpha score supports the VISSIT’s moderate reliability in that
the items on the scale were all related to measuring student need for service.

**Discussion**

The results of the quantitative data analysis provide moderate support for validity and reliability of the VISSIT at this time. This tool helps teachers of students with visual impairments determine how much direct and collaborative consultation service time to recommend for their students. Consequential and social validity of the VISSIT were supported based on the results of the quantitative data analysis.

In regard to the strengths of the VISSIT and possible revisions needed, the tool was found to be effective, helpful, and useful for determining service time for several different students with various needs related to their visual impairments. Of the 23 participants who answered the question “Do you feel you would use the VISSIT in the future for determining the type and amount of service you recommend for your students?” 22 participants (96%) stated they would use the tool in the future. The one respondent who said he or she would not use it in the future stated that the tool was “too much paperwork and too cumbersome.” The amount of paper used for the VISSIT in the study could be modified by reformatting the tool itself or by providing it in an electronic format, which is now available. The same 23 participants stated that, on average, completion of the VISSIT took about 31 minutes per student, with many of the participants saying that collecting student evaluation data and learning how to use the tool for the first time took longer than subsequent uses of the tool. This data shows that the time to complete the VISSIT is not excessive in the opinions of the teachers who used it. Seventeen (71%) out of 24 respondents stated that the results of the VISSIT mostly or completely matched their professional judgment regarding student need and recommended type and amount of service. The one caveat that most respondents added in their answers to the “why or why not” question after the professional judgment question was that many teachers are either expected by administrators to include, or self-selectively include, other factors that involve caseload management when recommending the actual service time and type of service in their students’ IEP meetings. The VISSIT was specifically designed to address this issue, since a student’s suggested type and amount of service is supposed to be based solely on need and not on the limitations of the teacher’s caseload-management responsibilities and duties. Eighteen (78%) of 23 participants stated that the VISSIT was a better tool to use for determining the type and amount of service than other available tools or methods currently being used. The five participants who said it was not a better tool all referred to the Michigan Vision Severity Rating Scale as the tool they use to determine service time for their students. One of these five participants also stated that, rather than using a tool, he or she preferred to use his or her knowledge of the student and his or her expertise as a teacher of students with visual impairments to determine service time.

**Limitations**

One possible limitation related to generalizability of the study stems from the fact that the participants were chosen by pur-
positive sampling, which may not provide a random sample of the larger population. Expert sampling was used to ensure that those testing the VISSIT were experienced in the process of determining type and amount of service time without the use of a tool or with the use of another tool. The teachers’ expert opinions were used to determine the validity and reliability aspects of the tool. The data supported the tool’s moderate validity and reliability. The small sample number was a direct result of the expert sampling method used. New and inexperienced teachers of students with visual impairments may not have been able to give sufficient, valid data upon which to determine validity and reliability of the scale. The suggestion of using experts to test the tool lends to the possible theory that, if the tool is moderately valid and reliable for veteran teachers, then new and inexperienced teachers of students with visual impairments could use it to help them with determining service time for their students. In this way, the possible limitations of the use of expert sampling method and small sample size are reduced for this study.

A second limitation is the levels of validity and reliability. One possible reason for moderate levels instead of high levels of validity and reliability is the small number of participants in the study, leading to fewer pieces of data which the researchers could use to measure validity and reliability.

A third limitation relates to the type of validity analyzed in this study. Validity is an indicator of the strength of the results when the tool is used to find a single construct, and the single construct being targeted by the VISSIT is student need in areas of the ECC. Content validity, which demonstrates how well each element or question of a tool is relevant to its construct, and construct validity, which demonstrates that the tool measures only one construct, were not fully analyzed in this study. A future study with a larger sample population will attempt to analyze both construct and content validity of the VISSIT.

One additional potential limitation was that no standard ECC evaluation tools were used by all participants. The use of the subjective professional judgment of each participant in the selection of ECC evaluation tools and methods used with their students could have affected the study results.

CONCLUSION
At this time, VISSIT is a moderately valid and reliable tool that teachers of students with visual impairments can use to determine direct and collaborative consultation service type and amount for any and all students on their caseloads. The researchers have streamlined the VISSIT and redesigned the layout of the tool based on data obtained from the qualitative questions on the survey. This data was used to clarify instructions and to make the overall completion of the tool easier. By providing the VISSIT in an electronic format that totaled scores, the researchers were able to alleviate the majority of the formatting and usage or scoring concerns noted by the participants. Additional research on the scale with a broader audience would potentially increase its validity and reliability and solidify its usefulness as an effective tool that can be used by many teachers of students with visual impairments throughout the country. A deeper examination of how they currently are determining service inten-
sity and the factors that impact those decisions needs to occur.

In this time of accountability and research-based practices, the VISSIT seems to be a method that can document and quantify a student’s need for services. The results can be used during IEP meetings to show support for a quantifiable recommended type and amount of service for any student with a visual impairment. The results may lead to a new understanding of how service time is sometimes limited by constraints not related to the needs of students, and therefore, administrative action such as providing additional support for service delivery or additional positions may be in order. Determining the appropriate amount and type of service for students with visual impairments in an itinerant service delivery model based on need, and not on schedule availability or subjective recommendations, is in alignment with the spirit of the IDEA (United States Department of Education, 2004, [§300.320(a)(1)]) and has the capacity to ensure that these students leave the educational system more prepared for success in adult life because they received enough intensity of service to address their unique needs.

References


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