Increasing Knowledge and Skills of Graduate Students Using Experiential Education

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This study examined the impact of experiential education through the utilization of vignettes on graduate student knowledge, skills, and attitudes in the area of written language disorders. Graduate students enrolled in a written language disorders class completed assessment measures designed to examine clinical understanding and confidence when preparing to teach a client exhibiting a written language disorder. The impact of the use of vignettes in the learning process was measured using pre- and post-tests, class surveys, and focus group interviews. Students demonstrated significant improvement in their knowledge, skills, and attitudes regarding written language disorders. All pre- and post-course comparisons were significant ($p < .01$). Therefore, the use of vignettes in a graduate level written language disorders course created learning experiences which resulted in the transformation of factual and theoretical knowledge into active clinical understanding and clinical confidence.

One of the greatest challenges for academic course instructors in the field of speech-language pathology is creating learning experiences for graduate students in which theoretical knowledge is transformed into active clinical skills (Dalton, Klein, & Botts, 2017). Therefore, effectively bridging the gap between the classroom and clinic becomes one of the central focuses of the classroom experience. This bridging is essential to the training of graduate students in the discipline as it undergirds the acquisition of knowledge and skills, significantly impacts the development of professional values and attitudes, and prepares students for the workplace, even after academic courses have been completed (Fink, 2003).

Bridging the gap between the classroom and the clinic can be exacting. Classroom teachers are challenged to provide meaningful instruction that creates a strong foundation for the development of clinical skills. In many university classrooms, instruction follows a traditional or transmissive approach to learning. In this approach, the instructor is viewed as the center and supplier of knowledge and imparts this knowledge primarily through the avenue of lecture. The instructor takes an active role in learning by selecting content, designing learning tasks, and communicating knowledge while students take a passive learning role as they listen, take notes, and ask questions during a lecture (Garrett, 2008; Mascolo, 2009; Peyton et. al., 2010; Serin, 2018). Research has shown that the transmissive learning approach does not always result in the desired depth and breadth of student learning and does not create a learning environment that promotes critical thinking and problem solving skills (Garrett, 2008). Effective learning is achieved when students do more than listen. Effective learning is achieved when students listen, read, write, discuss, and problem solve (Bonwell & Eison, 1991). Over the years, various approaches to learning and diverse teaching strategies have been adopted in classrooms of higher education in an attempt to ready students for clinical engagement, further refine their critical thinking skills, and prepare them for the challenges of professional practice. The use of experiential education is one such pedagogical approach.

Experiential education is defined as learning by doing (Lewis & Williams, 1994). Kolb (1984) postulated that experiential learning is a process in which experience is transformed into knowledge. Roberts (2005) broadened this idea by asserting that experiential education enables the learner to understand new experiences through past experiences and in anticipation of future experiences. These experiences not only transform the learner's knowledge, but also transform the learner.

Experiential learning focuses on both the learner and the learning environment. Learning is presented as a four-stage cycle. The learner must possess concrete experience skills, reflective observation skills, abstract conceptualization skills, and active experimentation skills. Simply put, the learner must be involved in a new experience, reflect on the experience from various perspectives, formulate concepts and theories from the experience, and use these concepts and theories to problem-solve. These skills are developed in a supportive learning environment characterized by concrete experience and reflection (Fry & Kolb, 1979; Glazier, Bolick, & Stutts, 2017).

A wide variety of experiential education activities have been shown to promote effective learning in the classroom. These activities include applied research projects, clinical practica, simulations, internships, service learning, and the use of storytelling. Storytelling is viewed as a powerful classroom tool that has long been used as a means of presenting information to students in an engaging and enjoyable manner. Storytelling can take the form of case studies, scenarios, and vignettes. The vignette has been found in classroom instruction across the disciplines of education, social sciences, behavioral sciences, and health sciences. A vignette is an incomplete short story, comprised of under 200 words, that reflects a simplified real-life situation, and that is written for an audience that has little expertise (Jefferies & Maeder, 2006; Jeffries & Maeder, 2005; Kish 2004).

The use of the vignette in the classroom has numerous benefits. As a teaching tool, vignettes fit well within the four-stage cycle of experiential learning. The initial reading of the vignette involves the learner in the new experience of identifying and analyzing the characteristics of a disorder not known to the learner. Next, the student must reflect on the situation described in the vignette from various perspectives outlined in evidence-based practice: the clinical perspective, client perspective, and research perspective. The student must then formulate concepts and theories relative to assessment and intervention from the information provided through the vignette. Finally, the concepts and theories formulated must be used to problem-solve the issues presented in the vignette.

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The medical and health sciences fields frequently use case-based presentations to teach relevant topics (Spicer et al., 2014). Case-based courses have been shown to increase test performance, enthusiasm for learning, and attendance rates (Blewett & Kisamore, 2009). Peabody, et al. (2004) measured the quality of clinical practice of physicians by using clinical vignettes. They concluded that vignettes are a valid tool for measuring the quality of clinical practice. The findings were consistent across all diseases and also accurately measured unnecessary care. Researchers have found vignettes to work well in the contexts of modeling, teaching, and discussing because they are easy to construct, they provide a focus for discussion, and they offer a means of addressing difficult and sensitive topics. Additionally, the vignette can be used when teaching groups and reflects real-life contexts and problems (Jefferies & Maeder, 2006; Jeffries & Maeder, 2004). Finally, the use of vignettes encourages reflection, cultivates understanding of complex concepts, and aids in the development of observational skills (Herman, 1998).

Few studies have examined specific teaching strategies and learning experiences of graduate students in the area of speech-language pathology. There exists an ever-increasing need for effective teaching approaches that bridge the gap between the acquisition of knowledge gained in the classroom and the development of skills and attitudes gained in the clinical setting. Therefore, the intent of this study was to examine the impact of the use of vignettes, an experiential education strategy, on the knowledge, skills, and attitudes of graduate students in the area of written language disorders.

METHOD

Participants

Thirty-eight female graduate students, ranging in age from 22 to 28 years participated in the study. All students were pursuing a Master of Science Degree in Speech-Language Pathology at a master's comprehensive university in the southeastern United States and were in the first year of their graduate program. The course served as one of two electives in their graduate program. None of the students had previously taken a course in written language disorders.

Setting

This study was conducted in a university-based classroom with participants enrolled in a graduate elective course in written language disorders. Two different cohorts of graduate students attended the course, one group in the spring semester and one group in the summer semester of the same academic year. The spring semester course met for 45 hours of instruction in which the class met three hours one time a week for 15 weeks. The class meeting time was comprised of one hour of direct instruction enhanced by discussion and two hours of experiential education activities, such as small and large group discussion, reading, writing, and vignette completion.

The summer semester course also met for 45 hours of instruction, however the class met for three hours, three times a week for five weeks due to summer class scheduling. One hour of direct instruction enhanced by discussion was presented by the instructor and the remaining two hours of class time were designated for experiential education activities, such as small and large group discussion, reading, writing, and vignette completion. The participants sat at round tables which accommodated five students. This seating arrangement allowed for direct instruction as well as for group discussions and collaboration during learning activities.

Course

The course was designed to provide students with an overview of theory and practice as they relate to the assessment and treatment of written language disorders in children and adolescents, specifically written expression, spelling, and reading disorders. Course instruction was comprised of experiential education activities incorporating listening, reading, writing, discussing, and problem solving and centered around the use of multiple vignettes. For the purpose of this study, a vignette was defined as an incomplete short story, comprised of under 200 words, that reflected a simplified real-life situation, and that was written for an audience that had little expertise (Jefferies & Maeder, 2006; Jeffries & Maeder, 2004; Kish 2004). During all learning activities, the instructor participated with the students in their direct experiences with the vignettes and supported the students in their formulation of focused reflections as a means of increasing their knowledge, skills, values, and attitudes.

During each week of the course, experiential education teaching strategies included 1) analysis of a different vignette describing individuals with written language disorders in the areas of written expression, spelling, or reading, 2) the completion of a rubric for each vignette identifying diagnostic indicators, possible problem areas, assessment procedures, and intervention approaches, 3) group discussions focused on class topics, reading assignments from the course text, peer reviewed journal articles, and vignettes, 4) analysis of recorded videos of individuals with written language disorders, and 5) analysis of written artifacts produced by individuals with written language disorders.

Students engaged in a weekly formative assessment activity in which they analyzed vignettes targeting various written expression, spelling, and reading difficulties experienced by individuals with written language disorders. Analysis consisted of reading the vignette, identifying diagnostic indicators and possible problem areas for each indicator, and listing this information in a two-column table. A diagnostic indicator was defined as a characteristic or behavior that was deemed atypical or indicated the possibility of a deficit or disorder. The possible problem area was defined as the domain in which a disorder might occur (e.g., written discourse, spelling, reading, oral language). Following completion of the table, students identified assessment procedures and intervention techniques that would be appropriate for the individual described in the vignette.

Course evaluation was comprised of a written midterm examination, a written final examination, and portfolio assessment. For the written midterm and final examinations, students completed a vignette. For portfolio assessment, each student created a resource document consisting of materials reflecting their knowledge, skills, and attitudes regarding written expression disorders, spelling disorders, reading disorders, and ASHA guidelines pertaining to written language disorders.

RESEARCH DESIGN

This study employed the Scholarship of Teaching and Learning (SoTL). SoTL advances teaching and learning by utilizing systematic study, reflection, and analysis, as well as incorporating systematic review and dissemination of findings (Dalton, et al., 2017; Friberg,

2015; Kern, et al., 2015). SoTL is an emerging area in Communication Sciences and Disorders that allows scholars to study the ability to bridge the gap between classroom knowledge and skills to be used in real-world, clinical settings.

A mixed methods design was used to systematically investigate and evaluate the impact of the utilization of vignettes, an experiential education strategy, on student learning. Quantitative data, i.e., knowledge, skills, and attitudes, was gathered through the use of pre- and post-course assessments. Qualitative data, i.e., reflection on learning, was gathered through the use of focus groups. The focus groups were conducted by a facilitator in a formal setting using a structured question format. Participants engaged in open discussion that was guided by the facilitator. Focus groups are a common method for gathering qualitative data through group interaction with the group discussion being the source of the data collected (Morgan, 1996). Four different outcomes of learning were assessed in the study: changes in knowledge, changes in skills, changes in attitudes, and the perceived effectiveness of vignettes in the learning process. Competency in these areas was deemed necessary for successful learning to have occurred in the preparation of graduate students for clinical practice in the area of written language disorders.

Materials and Procedures

Thirty-eight female graduate students completed pre- and post-course knowledge and skills assessments, completed pre- and post-course attitudinal surveys, and participated in focus group interviews. Pre-course information was obtained on the first day of the course, and post-course information was obtained on the last day of the course. These assessments were designed to measure and understand the impact of experiential education activities, especially the vignette, on student learning (see Appendix A).

Knowledge assessment

A knowledge pre- and post-course assessment was completed by each graduate student to measure knowledge in the areas of written expression, spelling, and reading. This assessment was comprised of 20 multiple choice questions.

Skills assessment

Students completed a skills pre- and post-course assessment created to measure baseline skills in regard to clinical assessment and intervention practices. In both the -pre and -post test activity, students analyzed the same vignette. However, they did not have exposure to this vignette at any other time during the semester. To complete the skills assessment, students first read a vignette describing the difficulties experienced by a school-aged student exhibiting a written language disorder. Next, they were asked to engage in the following assessment activities: 1) complete a blank table identifying diagnostic indicators and the possible problem areas for each indicator; 2) identify formal assessment methods that could be used for diagnostic testing; 3) identify informal assessment methods that could be used for diagnostic testing; and 4) discuss one appropriate intervention strategy for the student described in the vignette.

Attitudinal survey

Using information from a checklist that was developed by Steyl, Klein, Howell, and Dalton (2016), a survey was developed to assess the comfort level of graduate students with regard to written language disorders (i.e., written expression, spelling, and reading) and people who exhibit written language disorders (see Table 2). The areas of disorder identification, cultural needs, assessment, diagnosis, treatment, ethical considerations, and evidence-based practice were represented through Likert scale questions.

The survey was comprised of 11 demographic questions and 3 five-point Likert scale questions. A response of one indicated that the graduate student felt uncomfortable performing a clinical task involving written language disorders while a response of five indicated that the graduate student felt completely comfortable performing a clinical task in the area of written language disorders.

Focus Groups

All graduate students enrolled in the course participated in post-class focus group interviews to assess the effectiveness of the use of vignettes in teaching written language disorders. Each class was divided into three focus groups of equal size. Eight open-ended questions, developed by the investigators, were used to elicit student opinions regarding learning through the use of vignettes, the relationship between direct instruction and the use of clinical vignettes, and the impact of the course on clinical preparation. Each student was given the opportunity to respond to each of the eight questions.

Data Analysis

Quantitative Analysis

Pre- and post-test scores were obtained through assessment of the knowledge, skills, and attitudes of the students. Descriptive statistics were used to calculate means and standard deviations of the test scores for knowledge and skills. Pre-and post-test scores for these areas were analyzed using *t*-tests. Likert scale data was used for the attitudinal survey. A mean of one indicated that all participants felt uncomfortable while a mean of five indicated that all participants felt completely comfortable performing the task. Likert scores were analyzed using a related-samples Wilcoxon signed rank test, a nonparametric test designed to evaluate the difference between two treatments where there are two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ. It is suitable for evaluating the data from a repeated-measures design in a situation where the assumptions for a t-test are not met (Green, Salkind, & Akey, 2000; Orlikoff, Schiavetti, & Metz, 2015).

Qualitative Analysis

As a strategy to ascertain the impact of the use of vignettes on student learning, focus groups were conducted at the conclusion of both the spring and summer sessions of the written language disorders course. These groups were facilitated by two faculty members other than the course instructor. Focus groups were no more than one hour in length and were digitally recorded and transcribed verbatim. All participants in the focus groups spoke English. Therefore, focus groups were conducted, transcribed, and analyzed in English. Eight questions were used as guides for focus group discussions (see Appendix B).

Data analysis was conducted by a doctoral-level faculty researcher who specialized in qualitative data analysis methods and her undergraduate research assistants. To begin the data analysis process, the undergraduate research assistants participated in a two-hour, qualitative data analysis training session led by the faculty researcher. Following this training, eight data analysis teams, comprised of two undergraduate research assistants and supervised by the faculty researcher, were formed. During weekly meet-

ings, each team transcribed focus group responses and analyzed the responses by identifying primary themes across all transcripts.

RESULTS

The purpose of this study was to examine the impact of the use of vignettes, an experiential education strategy, on the acquisition of graduate student knowledge, skills, and attitudes in the area of written language disorders. Results of the study revealed that graduate students demonstrated significant positive changes in their knowledge, skills, and attitudes regarding working with individuals with written language disorders as evidenced by pre- and post-tests and surveys and focus group responses. These results are shown in Table 1.

Table 1. **Pre- & Post-Course Student Knowledge and Skills Scores**

Assessment	Pre-test Mean (*SD*)	Post-test Mean (*SD*)	*p*-value	Cohen's *d*
Knowledge	40.7 (9.5)	64.6 (11.1)	< .001	1.6
Skill 1: Diagnostic Indicators	19.3 (14.0)	42.6 (11.3)	< .001	1.4
Skill 2: Formal Assessment	14.2 (16.0)	50.5 (25.4)	< .001	1.3
Skill 3: Informal Assessment	47.4 (32.8)	85.5 (23.0)	< .001	1.0
Skill 4: Intervention	5.3 (15.6)	89.2 (11.9)	< .001	4.3

Quantitative Data

A knowledge pre- and post-course assessment was completed by each graduate student to measure knowledge in the areas of written expression, spelling, and reading. This assessment was comprised of 20 multiple-choice questions. Mean scores increased from 40.7 on the pre-test to 64.6 on the post-test. A paired-samples *t*-test indicated that the means were significantly different, $t(37) = 9.85$, $p < .001$. The effect size was large, Cohen's $d = 1.6$.

A skills pre- and post-course assessment was completed by each graduate student in which the student analyzed a vignette. This analysis was comprised of three activities that measured the ability to apply knowledge by identifying diagnostic indicators and possible problem areas for each indicator, as well as identifying appropriate formal and informal assessment measures.

Skill 1 measured student ability to identify diagnostic indicators and the possible problem areas for each indicator. Mean scores increased from 19.3 on the pre-test to 42.6 on the post-test. A paired-samples t-test indicated that the means were significantly different, $t(37) = 8.5$, $p = < .001$. The effect size was large, Cohen's $d = 1.4$.

Skill 2 measured student ability to identify formal assessment tools that could be used for diagnostic testing. Mean scores increased from 14.2 on the pre-test to 50.5 on the post-test. A paired-samples t-test indicated that the means were significantly different, $t(37) = 7.9$, $p < .001$. The effect size was large, Cohen's $d = 1.3$.

Skill 3 measured student ability to identify informal assessment methods that could be used for diagnostic testing. Mean scores increased from 47.4 on the pre-test to 85.5 on the post-test. A paired-samples t-test indicated that the means were significantly different, $t(37) = 6.0$, $p < .001$. The effect size was large, Cohen's $d = 1.0$.

Skill 4 measured students' ability to discuss one appropriate intervention strategy for the child discussed in the vignette. Mean scores increased from 5.3 on the pre-test to 89.2 on the post-test. A paired-samples t-test indicated that the means were significantly different, $t(37) = 26.7$, $p < .001$. The effect size was large, Cohen's $d = 4.3$.

An attitudes pre- and post-course assessment was completed by each graduate student to measure comfort level in the areas of written expression, spelling, and reading. The students were asked to rate their level of comfort and clinical confidence when performing 31 different tasks. A rating of one indicated very uncomfortable and a rating of five indicated very comfortable. Students demonstrated significant changes in their perceived level of comfort when working with individuals with written language disorders, as evidenced by pre- and post-surveys. All 31 items showed significant change ($p < .001$), indicating a significant increase in student's comfort level when identifying, describing, diagnosing, discussing, and treating clients with written language disorders. A list of question items and significance are shown in Table 2.

Qualitative Data

Qualitative data was acquired through the analysis of focus group responses. This analysis revealed six overarching themes which reflected the opinions of students regarding their learning and clinical self-efficacy. These themes included: 1) knowledge and skills, 2) experiential learning, 3) teaching style, 4) use of vignettes, 5) the big picture, and 6) responsibility for learning. Participants reported that overall the class provided an opportunity to gain valuable knowledge and skills that could be applied to future clinical experiences.

Knowledge and Skills in Written Language Disorders

Students were asked to describe concepts or information learned through the use of vignettes that could not have been learned through a traditional teaching approach. In all focus groups, the most common shared response was that students learned how to identify and define disorders. Across the groups, many students mentioned that the class helped them gain a better understanding of written language disorders and the differences between each disorder. As one participant noted:

> For the course of this class I learned how to identify various disorders for reading, writing, and spelling. I felt that this class was very helpful as far as identifying and then recognizing and then treating these disorders, as well as different options you could use because it is not a one-size-fits-all approach.

Similarly, another participant noted:

> I learned specific interventions and specific assessments. I liked how we did not just say, oh you can do the CTOPP [Comprehensive Test of Phonological Processing] (Wagner, et al., 2013). We learned the subtests of this test and what would be good for written language disorders. The specificity of what we learned was really helpful.

Across focus groups, participants reported a high degree of satisfaction with developing their knowledge and skills through the use of direct instruction enhanced by discussion followed by explicit application using vignettes. One participant noted:

Table 2. **Pre- and Post-Course Student Perception of Level of Comfort in Performing Each Task**						
Item		**1**	**2**	**3**	**4**	**5**
Identify a written language disorder by describing spelling, reading, and written expression skills.	Pre	13%	66%	18%	3%	0%
	Post	0%	0%	5%	68%	26%
Address the needs, values, and cultural/linguistic backgrounds of the client and family when conducting assessment and/or treatment for a written language disorder.	Pre	16%	26%	30%	24%	5%
	Post	0%	3%	18%	40%	40%
Differentially diagnose a written language disorder.	Pre	40%	40%	21%	0%	0%
	Post	0%	0%	11%	68%	21%
Differentiate between a child's normally developing written language skills and delayed or disordered skills.	Pre	11%	29%	45%	13%	3%
	Post	0%	0%	5%	61%	34%
Obtain representative samples to evaluate spelling, reading, and written expression skills	Pre	13%	18%	18%	47%	3%
	Post	0%	0%	3%	32%	66%
Assess clients' skills in spelling, reading, and written expression.	Pre	13%	21%	34%	32%	0%
	Post	0%	0%	5%	50%	45%
Utilize available and appropriate diagnostic tests to assess written language skills.	Pre	18%	18%	26%	34%	3%
	Post	0%	3%	8%	40%	50%
Identify and measure environmental variables (e.g. time pressure, multitasking, emotional reactions, and nonverbal behavior) that may be related to written language disorders.	Pre	21%	37%	34%	8%	0%
	Post	0%	8%	11%	55%	26%
Answer client's and parent's questions related to the cause of written language disorders.	Pre	40%	42%	18%	0%	0%
	Post	0%	0%	29%	47%	24%
Answer client's and parent's questions related to the incidence of written language disorders.	Pre	37%	50%	13%	0%	0%
	Post	0%	5%	26%	47%	21%
Answer client's and parent's questions related to the chances of remediation for written language disorders.	Pre	29%	47%	16%	8%	0%
	Post	0%	3%	18%	63%	16%
Explain clearly to clients and/or their family members various treatment options and their evidence base.	Pre	37%	47%	11%	5%	0%
	Post	0%	5%	5%	55%	34%
Construct a treatment program, based on the results of comprehensive testing that fits the unique needs of each client.	Pre	26%	50%	13%	8%	3%
	Post	0%	3%	8%	55%	34%
Flexibly adapt the treatment program to meet the specific needs of the client and family.	Pre	13%	37%	21%	24%	5%
	Post	0%	5%	5%	34%	55%
Identify when the experience of spelling, reading, and written expression leads to avoidance, postponement, struggle, and secondary behaviors.	Pre	16%	18%	37%	29%	0%
	Post	0%	3%	5%	47%	45%
Help clients work towards adequate written expression skills.	Pre	8%	21%	34%	34%	3%
	Post	0%	3%	8%	40%	50%
Help clients and families work to become more accepting of written expression skills	Pre	3%	21%	24%	50%	3%
	Post	0%	3%	8%	42%	47%
Help clients and families make treatment decisions in accordance with the ASHA's Code of Ethics.	Pre	8%	16%	26%	40%	11%
	Post	0%	0%	11%	40%	50%
Implement a variety of procedures to achieve transfer and maintenance of changes achieved in the clinical setting with written language skills.	Pre	18%	29%	40%	13%	0%
	Post	0%	3%	3%	68%	26%
Help clients develop a plan for managing written language skills.	Pre	16%	40%	34%	11%	0%
	Post	0%	5%	3%	50%	42%
Find reliable information about written language skills on the internet.	Pre	0%	8%	11%	55%	26%
	Post	0%	0%	3%	24%	74%
Connect a client and/or family with a support group for written language disorders.	Pre	18%	21%	29%	29%	3%
	Post	0%	5%	24%	45%	26%
Write evaluation and therapy reports that explain the nature of the client's written language disorder and its treatment for the client and family.	Pre	9%	13%	26%	37%	15%
	Post	3%	5%	21%	45%	26%
Accurately identify the onset characteristics of written language disorders.	Pre	24%	58%	13%	5%	0%
	Post	0%	3%	16%	46%	35%
Identify the core behaviors of written language disorders.	Pre	24%	53%	18%	5%	0%
	Post	0%	0%	8%	47%	45%
I am comfortable working with other professionals concerning written language disorders.	Pre	8%	26%	21%	26%	18%
	Post	0%	3%	8%	29%	61%
I am comfortable working with adults with written language disorders.	Pre	11%	32%	29%	18%	11%
	Post	0%	11%	11%	37%	42%
I am comfortable working with adolescents with written language disorders.	Pre	11%	32%	34%	13%	11%
	Post	3%	5%	3%	45%	45%
I am comfortable working with children with written language disorders.	Pre	8%	26%	32%	21%	13%
	Post	3%	0%	5%	46%	46%
I am comfortable working with parents of children with written language disorders.	Pre	8%	26%	40%	13%	13%
	Post	0%	8%	3%	53%	37%
I am comfortable working with a person with a written language disorder from another country.	Pre	24%	45%	13%	8%	11%
	Post	8%	16%	21%	37%	18%
Notes: 1 = very uncomfortable; 2 = uncomfortable; 3 = neutral; 4 = comfortable, 5 = very comfortable. Some percentages sum to greater than 100% due to rounding error. All post-test scores were significantly higher than pretest scores ($p < .001$).						

> I liked how when she gave us the vignette, she did it after she lectured on it because there have been other classes where they won't actually lecture on the actual material and will just hand you a vignette to figure out, which I feel like is kind of counterproductive. So I like how we actually go over the material and talked about it, broke it down, and then we figured out the vignette.

Participants consistently stated that having strong foundational knowledge allowed them to engage in more challenging clinical application and problem-solving. One participant noted:

> I learned how to look at a case study and immediately pick up key terms and key phrases that ordinarily I would look at and think that doesn't mean anything, and then to go further with that and to take it to realize, oh, it could be because he has an executive functioning disorder or executive functioning issue. So just to look at that and immediately problem-solve it was really cool.

Experiential Learning

Students were asked to share their perceptions of overall learning during the semester, as well as how the use of vignettes as a learning strategy integrated with the course. The students regarded the experiential learning experiences, specifically the discussion- and inquiry-based strategies centering on the use of vignettes, as contributing to an increase in their confidence and sense of self-efficacy when considering written language disorders. The students stated that as they were encouraged to share and discuss their thoughts, questions, and knowledge centering on the vignettes, their learning increased. They also commented that as they were invited to share clinical questions from their current practicum experiences they became better able to generate solutions to real-life clinical problems. Additionally, the course participants shared their enjoyment of "learning to learn." One participant stated: "I like how she would ask us what's going on in our current clinical experiences and try and help us think of therapy techniques, then apply those techniques directly into therapy with our clients."

Students also shared that discussing specific assessment techniques, such as analyzing written language artifacts, contributed to an increase in their self-efficacy. Overall, the participants noted that working together both in small groups and in one large class group was beneficial to the development of their critical thinking skills. One student shared:

> I think discussing how to analyze the written artifacts was really helpful because it mirrored real-life. I really liked the class discussion because Dr. B encouraged us to ask questions no matter how random and she would always have a very thorough answer.

Use of Vignettes

Common responses supporting the efficacy of the use of vignettes in teaching occurred across participants. Some participants commented that the vignettes were like a puzzle that helped to piece together information and formulate a diagnosis. One student said: "We could take those different clues and put them together to form a diagnosis."

The use of vignettes also enabled students to isolate components of a clinical problem, see the component as a puzzle piece, and consider the implications of that component independent of other clinical factors. One student stated:

> I learned specifically what to look for in children and how it gave me a full picture of how the child performed in addition to things, like maybe having excellent academic success in all other areas, but still struggling with the writing component.

Students also explained that vignettes allowed them to not only dissect a situation or problem but also to view a problem holistically. They identified the vignettes as a bridge facilitating the integration of classroom knowledge with current and future clinical experience and decision making. Vignettes were noted as being a better learning strategy than reading books and attending lectures because they allowed students to dissect clinical problems with group support, practice problem solving, and formulate solutions in a collaborative effort through discussion.

The Big Picture

When asked about their learning experience and the use of vignettes as a vehicle for developing problem solving skills, students stated that instead of simply learning new fact-based material, they learned how to apply information through the use of vignettes and class discussion. Focus group discussion revealed that the use of clinical application activities in the class allowed the students to experience a more realistic approach to the assessment and treatment processes. Across the groups, participants reported an appreciation for the opportunities to connect knowledge and skills through clinical application. Overall, participants appreciated learning about appropriate diagnosis and treatment approaches, how to work in collaboration with other types of professionals, such as reading specialists, and 'understanding the big picture.' One participant noted:

> Using the vignettes to unpack the course material gave me a full picture of how the child performed, in addition to things like maybe having excellent academic success in all other areas, but still struggling with the writing component. Which are things you wouldn't think about if you're only discussing the writing disorder.

Additionally, one participant shared the belief that the work with the vignettes helped to fill in the gaps between the classroom and clinical settings:

> The vignettes, the best thing I like about them is that there has always been an issue for me with bridging the gap between what we learn in class and what we have to do in therapy and if you are specifically in a situation where someone goes, "Here's your case. Go for it!" This was a really helpful way to get practice doing that without actually being in a clinic.

Responsibility for Learning

Students indicated that the use of experiential education strategies to inform teaching and learning was relatively new and unfamiliar to them. When class participants were asked what they would do differently in regard to their learning if they were to take the class again, some participants stated that they would ask more questions and "go deeper" with the course material. Many students reported their regret for not being more organized at the beginning of the course because their initial expectation was that the course would follow a traditional format. One participant noted:

> I think that I would restructure my organization when we were going over the vignettes. There were more diagnostic

> indicators than there were problem areas, so I spent a lot of time squishing things in, and I should have reorganized that and made it easier to read.

For some students, preconceptions of familiar and reliable learning approaches clashed with the dynamic, inquiry-based approach utilized by the course instructor. Overall, only a few student comments indicated a proclivity for traditional, lecture-style teaching with rote learning. One student commented "I wish that the lectures would've been a little more fast-paced as we followed along with the PowerPoints" and another student stated "...maybe to have like a lecture for the first part, and then go into the vignette." However, most students indicated that after an initial adjustment to course expectations, their own engagement and enjoyment of the learning environment increased substantially, compared with their experiences in traditional teaching and learning contexts.

Additional Findings

Students were asked to describe how the course prepared them for their future as speech-language pathologists and to describe any meaningful learning strategies utilized in the course. One common theme found among participant responses was how the instructor's clinical experiences contributed to the class content. Students reported that the instructor shared personal stories and experiences focusing on clinical approaches for assessment and intervention that were both effective and ineffective. Students also valued that the instructor shared the importance of matching clinical approaches to the needs of the client and emphasized the fact that certain approaches were more effective for certain clients. One student explained: "I learned how disordered a kid's reading or writing could be and different techniques that I could approach a kid with, no matter what problems they are having."

Many participants also found the instructor's stories of personal experience and her modeling of problem-solving strategies helpful when examining clinical writing samples. A variety of artifacts which represented written expression skills at various stages of development were used for class discussion, analysis, and diagnosis of written language disorders. Students commented that through her expertise, the instructor's real-life experiences brought meaning to the factual information presented.

> I learned that being a therapist is often sometimes unpredictable, and discussing Dr. B's experiences helped me to understand more about what we may or may not encounter in the field and how to appropriately deal with such situations.

Numerous course participants reported that the instructor's teaching style was their most favored part of the class. They stated that they felt that they learned more in her class than many of their other classes and enjoyed hearing real stories from the field.

DISCUSSION

Bridging the gap between the classroom and clinical experiences is essential to the training of graduate students in the field of speech-language pathology. The goal of education in the field is to help students 'develop relevant knowledge and skills, together with an ability to integrate and apply these in dealing with the pathologies encountered in the clinical setting' (RCSLT, 1996, p. 233). The identification of effective teaching strategies that support the acquisition of knowledge and skills, as well as the development of professional values and attitudes is paramount. Therefore, this study was designed to examine the impact of the use of vignettes, an experiential education strategy, on the learning of graduate students in the area of written language disorders. This method of experiential learning has been shown to provide students with meaningful opportunities which promote development of critical thinking skills and transference of knowledge and skills to the clinical setting (Leahy et al., 201: Meilijson & Katzenberger, 2015). Quantitative and qualitative results revealed that the use of vignettes significantly increased student knowledge, skills, and attitudes. These positive findings were validated by student feedback obtained from the focus groups.

Students perceived that the quality of their acquired knowledge and skills in the area of written language disorders was exceptional because of the approach used in the course. This perception was consistent with the significant increase in pre- and post-course student knowledge and skills scores. Students also shared that their acquisition of a strong foundation in knowledge and skills equipped them to engage in more challenging clinical applications involving problem-solving. This perception was also substantiated in the significant findings of the pre- and post- course assessment of attitudes relating to comfort and clinical confidence.

A second overall finding of the study related to the dynamic nature of the instructor-student interaction for this course. Frisby and Martin (2016) reported that student learning is enhanced when rapport is established between an instructor and student; when classroom connectedness is evidenced through interaction between peers in the classroom; and when classroom participation takes place with both the instructor and student. It has also been argued that two types of learning are necessary for an effective classroom, cognitive learning and affective learning. Cognitive learning is defined as the acquisition of knowledge and skills (Ellis, 2004). Affective learning is defined as the positive value that students assign to a course (McCroskey, 1994). Rodriguez et al. (1996) support the notion that an increase in affective learning results in an increase in cognitive learning.

The instructor in this research project used inquiry-based strategies to challenge students and to facilitate a higher degree of engagement. The instructor guided and interacted with the students as they questioned, analyzed, interpreted, and reacted to ideas, clinical approaches, and data. Through inquiry, students actively discovered information to support their investigations. Interestingly, this dynamic resulted in the emergence of a community of reflective practice for which students reported an appreciation. Through this interaction, students were invited to share their clinical experiences and be guided and mentored by their fellow student clinicians, as well as the instructor. This approach to problem-solving not only provided the opportunity for students to reflect on ethical practice but also contributed to the long-term development of clinical knowledge, skills, and attitudes.

Oftentimes, classroom teachers do not believe there is adequate instructional time to engage in experiential education through real-time teacher-student interactions. However, the results of this study suggest that by using vignettes and transforming the classroom into a clinically focused and discussion-based environment, students gain a deeper understanding and awareness of their roles and responsibilities as practitioners. Viewing the classroom as a pseudo-clinical environment is not a novel idea. When the classroom experience responds to the demands for students to possess knowledge and skills that can be applied to the clinical setting, to reflect on clinical situations, and to problem

solve in an effort to design assessment and intervention, meaningful learning takes place (Miles, et al., 2016; Peabody, et al., 2004; Spicer, et al., 2014). The beauty of this learning experience is that students are provided with adequate time to receive rich feedback when problem solving, to listen to multiple perspectives, to analyze and evaluate data, to formulate their own assumptions, to determine significant information, and to present their findings and conclusions to their fellow students and instructor. In essence, a bridge is built between the classroom and clinical settings.

LIMITATIONS

The limitations of this study include the small sample size and the use of teaching strategies in addition to the vignettes. Students discussed multiple factors that impacted the development of their knowledge, skills, and attitudes in this course, including, but not limited to direct instruction enhanced by discussion; experiential learning, also enhanced by discussion; and inquiry-based teaching methods accompanied by the use of vignettes, small group collaboration, and storytelling by the instructor based on experience. Did one teaching strategy influence learning more than another?

CONCLUSIONS

The use of vignettes as a means of bridging the gap between classroom learning and clinical practice has great value. The findings from this study suggest that graduate courses incorporating experiential learning strategies can significantly impact student knowledge, skills, and attitudes. Moreover, the implementation of experiential education strategies in the classroom creates the opportunity for learners to integrate, reflect, formulate, and problem solve as they prepare for the actual execution of knowledge and skills in the clinical setting. Future research should explore the strength of the sole use of vignettes in graduate courses in speech-language pathology. Research efforts focused on the use of vignettes that include different instructors across graduate programs in Communication Sciences and Disorders are needed to establish external reliability. Finally, the use of vignettes in undergraduate Communication Sciences and Disorders courses as an instruction strategy as well as an assessment tool needs further investigation.

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REFERENCES

Blewett, E. L., & Kisamore, J. L. (2009). Evaluation of an interactive, case-based review session in teaching medical microbiology. *BMC Medical Education, 9*(1), 1-9.

Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom.* ASHE-ERIC Higher Education Report No. 1. Washington, D. C.: George Washington University, School of Education and Human Development.

Dalton, J. C., Klein, J, & Botts, D. C. (2017). Bridging the divide with SoTL: Connecting knowledge with best practice in communication disorders. *Perspectives, 2* (1), 14-24.

Ellis, K. (2004). The impact of perceived teacher confirmation on receiver apprehension, motivation, and learning. *Communication Education*, 53, 1-20.

Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco, CA: Jossey-Bass.

Frisby, B. N., & Martin, M. M. (2010). Instructor-student and student-student rapport in the classroom. Communication Education, 59(2), 146-164.

Friberg, J. C. (2015). Framing SoTL: Understanding the scholarship of teaching and learning and its role in CSD: Part 1. Access Academics and Research, April. Retrieved from http://www.asha.org/Academic/questions/Framing-SoTL-Part-1/

Fry, R., & Kolb, D. (1979). Experiential learning theory and learning experiences in liberal arts education. *New directions for Experiential Learning, 6*, 79–92.

Garrett, T. (2008). Student-centered and teacher-centered classroom management: A case story of three elementary teachers. Journal of Classroom Interaction, 43(1), 34-47.

Glazier, J., Bolick, C., & Stutts, C. (2017). Unstable ground: Unearthing the realities of experiential education in teacher education. *Journal of Experiential Education, 40*(3), 231-248.

Green, S.B., Salkind, N.J., & Akey, T.M. (2000) Using SPSS for Windows: Analyzing and understanding data. Prentice Hall.

Herman, W. E. (1998). Promoting pedagogical reasoning as preservice teachers analyze case vignettes. *Journal of Teacher Education, 49*(5), 391-397.

Jeffries, C., & Meader, D.W. (2006). Using instructional and assessment vignettes to promote recall, recognition, and transfer in educational psychology courses. *Teaching Educational Psychology, 1*(2), 1-19.

Jeffries, C., & Meader, D.W. (2004). Using vignettes to build and assess teacher understanding of instructional strategies. *The Professional Educator, 26(1&2)*, 17-28.

Kern, B., Mettetal, G., Dixson, M. D., & Morgan, R. K. (2015). The role of SoTL in the academy: Upon the 25th anniversary of Boyer's Scholarship Reconsidered, *Journal of the Scholarship for Teaching and Learning*, 15(3), 1-14.

Kish, M. H. Z. (2004). Using vignettes to develop higher order thinking and academic achievement in adult learners in an online environment. (Doctoral dissertation, Duquesne University, 2004). *Dissertation Abstracts International, 65*, 361.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall.

Kolb, D. A., & Fry, R. (1975). Toward an applied theory of experiential learning. In G. Cooper (Ed.), *Theories of group processes* (pp. 53–56). New York, NY: Wiley.

Leahy M. M., McTiernan K., Smith M. M., Sloane P., Walsh I.P., Walshe M., & Ni Cholmain C. (2010). Foundation studies in education for therapy practice: curriculum updating. *Folia Phoniatr Logop,* 62: 255–259.

Lewis, L. H., & Williams, C. J. (1994). Experiential learning: Past and present. *New Directions for Adults and Continuing Education, 1994*(62), 5-16. doi:10.1002/ace.36719946203

Mascolo, M. (2009). Beyond student-centered and teacher-centered pedagogy: Teaching and learning as guided participation. *Pedagogy and the Human Sciences*, 1(1), 3-27.

Meilijson, S. & Katzenberger, I. (2015). A clinical education program for speech-language pathologists applying reflective practice, evidence-based practice and case-based learning. *Folia Phoniatr Logop,* 66, 158-163.

McCroskey, J. C. (1994). Assessment of affect toward communication and affect toward instruction in communication. In S. Morreale & M. Brooks (Eds.), *Assessing college student competency in speech communication* (pp. 5671). Annandale, VA: Speech Communication Association.

McKinney, K. (2007). *Enhancing learning through the scholarship of teaching and learning: The challenges and joys of juggling*. San Francisco, CA: Jossey-Bass.

Miles, A., Friary, P., Jackson, B., Sekula, J., & Braakhuis, A. (2016). Simulation-based dysphagia training: teaching interprofessional clinical reasoning in a hospital environment. *Dysphagia*, 31(3), 407-415.

Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology*, 22, 129-152.

Orlikoff, R. F., Schiavetti, N., & Metz, D.E. (2015). *Evaluating research in communication disorders* (7th ed.). Boston: Pearson.

Peabody, J.W., Luck, J., Glassman, P., Jain, S., Hansen, J., Spell, M., & Lee, M. (2004). Measuring the quality of physician practice by using clinical vignettes: a prospective validation study. *Annals of Internal Medicine*, 141(10), 771-780.

Peyton, J. K., More, S. K., & Young, S. (2010). Evidence-based, student choice instructional practices. *Center for Applied Linguistics*, 20-25. Retrieved from http://cal.org/caelanetwork

Roberts, J.W. (2005). Disney, Dewey, and the death of experience in education. *Education and Culture, 21*(2), 12-30.

Rodriguez, J. I., Plax, T. G., & Kearney, P. (1996). Clarifying the relationship between teacher nonverbal immediacy and student cognitive learning: Affective learning as the central causal mediator. *Communication Education*, 45, 293-305.

Serin, H. (2018). A comparison of teacher-centered and student-centered approaches in educational settings. *International Journal of Social Sciences and Educational Studies*, 5(1) 164-167.

Spicer, J.O., Kraft, C.S., Burd, E.M., Armstrong, W.S., Guarner, J. (2014) The value of case-based teaching vignettes in clinical microbiology rounds. *American Journal of Clinical Pathology*, 141(3), 318–322.

Steyl, N. A., Klein, J. F., Howell, M. L., & Dalton, J. C. (2016). Increasing knowledge and skills of graduate students in a fluency disorders course. *Contemporary Issues in Communication Science and Disorders,* 43, 164-173.

The Royal College of Speech and Language Therapists. (1996) *Communicating Quality 2*. London: RCSLT.

Wagner, R. K., Torgesen, J. KI., Rashotte, C. A., & Pearson, N. A. (2013). *CTOPP-2: Comprehensive test of phonological processing-second edition*. Austin, TX: Pro-Ed.

APPENDIX A

SAMPLE FORCED-CHOICE KNOWLEDGE TEST ITEMS

1. What is phonological awareness?
    a. An awareness of, and the ability to manipulate, the phonological segments (syllables, sounds) of a word
    b. The ability to judge the sameness, difference, number, and order of sounds in words
    c. The ability to code information phonologically for temporary storage in working or short-term memory
    d. Awareness of sounds

2. Which skill characterizes the phonetic stage of spelling?
    a. Realizes the letters represent speech sounds
    b. Learns to represent all phonemes in a word using knowledge of letter names and letter-sound correspondence
    c. Knows some letter names
    d. Recognize that silent letters can occur in graphemes

SAMPLE SKILLS TEST ITEMS

1. Using the description of Nate's academic performance provided in the vignette, identify the diagnostic indicators and the possible problem areas associated with each indicator.

Diagnostic Indicator	Possible Problem Area

2. Using the information provided in the vignette about Nate, describe the formal testing you would implement in order to assess his language and literacy skills.

3. What informal assessment practices would you use to supplement your formal assessment?

4. Discuss one intervention strategy that would be appropriate to use with Nate.

SAMPLE VIGNETTE

Nate is a first grader who is struggling to learn. He is falling behind his classmates is several areas. Nate does not perform well when he is given a worksheet and asked to find all the pictures that begin with a certain sound. Nate usually just circles all the pictures on the page.

Nate seems to know his ABCs one day and not know them the next. He experiences difficulty writing his ABCs and many times his handwriting cannot be read. Nate misspells his first and last name, has difficulty spelling CVC words, and has poor spacing between letters and words when writing short sentences.

In reading group. Nate consistently looks at the pictures in the reader and "makes up" stories instead of reading the printed words. When asked to read what is printed, Nate cries.

Additionally, Nate enjoys listening to stories in circle time. However, he cannot answer questions about the stories, name the characters, or identify the setting. When asked to tell a story, his story is out of sequence, does not contain important details, and does not make sense. When asked to write a story during journaling time, Nate puts his head on his desk and refuses.

APPENDIX B

FOCUS GROUP QUESTIONS

1. What did you learn from the class as a whole this semester?
2. What did you learn from the vignette/problem solving activities that you feel you could not have learned from a lecture, reading a book, or participating in a classroom discussion?
3. What parts of the class besides the vignette/problem solving experience were important to your learning, and what did you learn from them?
4. You may have already answered this, but how did the vignette/problem solving experience integrate with the class as a whole?
5. What did you learn about being a therapist from this class, and which aspect of the class helped you the most as a future therapist?
6. What was your favorite part of the class?
7. As a class member, what would you do differently if you were to retake the class?
8. What aspects of the class could be changed to make it better?