

FROM TEACHING TO PRACTICE: PEDAGOGICAL MODELS FOR CLINICAL APHASIA:
A PILOT STUDY

A thesis presented to the faculty of the Graduate School of Western Carolina University in
partial fulfillment of the requirements for the degree of Masters of Science in Communication
Sciences and Disorders.

By

Rachel Ann Cox

Director: Dr. K. Leigh Morrow-Odom
Associate Professor of Communication Sciences and Disorders
Communication Sciences and Disorders Department

Committee Members: Dr. Lane Perry
Dr. Tracie Rice

March 2018

ACKNOWLEDGEMENTS

All praise, honor, and glory to my Lord Jesus Christ for his richest grace and mercy for the accomplishment of this thesis.

Foremost, I would like to express my deepest gratitude and thanks to my advisor Dr. Leigh Odom for her never ending support, patience, sincerity, enthusiasm, and immense knowledge throughout this process. There are not enough words to tell you how grateful I am for you. I am also thankful for the other members of my thesis committee Dr. Tracie Rice and Dr. Lane Perry for their help and sincere feedback in spite of your other responsibilities. It was an honor to work and study under all of your guidance. In addition, thank you to Danny Davis for taking time out of your busy schedule to assist me on a Friday night in the analysis of this data. Without your guidance, I could not have completed this research.

And to my friends and family, I give my deepest love and thanks. Taylor, thank you for being a true friend and for always leading me in the direction of Jesus. Catherine, always remember that you can do anything you set your mind to. Dream big and always believe in Your maker. Ashley and Kenneth, thank you for keeping me laughing during the good, bad, and ugly times and for always being just a phone call away. Mom and Dad, thank you for believing in me, supporting me, and forever loving me. None of this would have been possible without you. And to Mike, thank you for always being by my side lending listening ears and providing jokes when needed. I am so blessed to have you all in my life.

TABLE OF CONTENTS

List of Tables	iv
List of Figures	v
List of Abbreviations	vi
Abstract	vii
Chapter One: Introduction	1
SoTL	1
SoTL and CSD	1
Models of Instruction	2
Statement of Purpose	5
Chapter Two: Methods	7
Participants	7
Research Design	7
Procedures	8
Data Analysis	9
Chapter Three: Results	10
Participant Demographics	10
Teaching Methods Used	10
Frequency of Teaching Methods Used	11
Efficacy of Teaching Methods Used	12
Relationship between frequency and effectiveness	13
Chapter Four: Discussion	15
Conclusions and Implications	15
Limitations	18
Future Directions	18
Conclusion	19
References	20
Appendices	26
Appendix A: Consent Form	26
Appendix B: Survey	27
Appendix C: Postcard	30

LIST OF TABLES

Table 3.1. The frequency of the teaching methods used.....	11
Table 3.2. The frequency of the teaching methods used.....	12
Table 3.3. The effectiveness of the teaching methods used.....	13
Table 3.4. Data comparing rank for frequency and effectiveness	14

LIST OF FIGURES

Figure 3.1. Chart demonstrating the correlation between frequency and effectiveness14

LIST OF ABBREVIATIONS

ASHA.....	American Speech-Language-Hearing Association
CBT.....	Cognitive Behavioral Therapy
PWA.....	Person with Aphasia
SLP.....	Speech Language Pathologist
QOL.....	Quality of Life
SoTL.....	Scholarship of Teaching and Learning
PCK.....	Pedagogical Content Knowledge

ABSTRACT

FROM TEACHING TO PRACTICE: PEDAGOGICAL MODELS FOR CLINICAL APHASIA: A PILOT STUDY

Rachel Ann Cox, B.S.

Western Carolina University (April 2018)

Director: Dr. Leigh Odom-Morrow

The purpose of this study was to determine the frequency with which various instructional models are used in a graduate-level aphasia course, and participants' perceptions of effectiveness of those methods in preparing them for clinical practice. Instructional methods evaluated included group investigation model, direct instruction, inductive thinking model, memorization, problem-based learning, and role-play. Participants included speech-language pathologists with a temporary license to practice in North Carolina. Participants completed all or part of an anonymous, web-based survey regarding instructional methods used in aphasia courses and students' perceptions of preparedness. First, participants were asked to select all teaching methods used by the instructor. Next, they were asked to arrange the methods that were selected to represent the frequency of use in the classroom. Lastly, they were asked to arrange the selected methods by effectiveness for clinical practice. Demographic questions were presented at the end. The survey required approximately 5 to 10 minutes to complete. Twenty completed surveys were received, but only eight indicated that they worked with the target population-aphasia; therefore, data from those eight surveys were used.

Memorization and direct instruction was selected by all participants as being used in the classroom. Direct instruction, memorization, and group investigation were used most frequently, followed by the inductive thinking model, problem-based learning, and role-play. Group investigation, direct instruction, and inductive thinking model were reported to be the most effective for preparing students for clinical practice. Memorization, role-play, and problem-based learning were reported to be least effective for clinical practice. Correlation coefficient was calculated and determined to be 0.7895 signifying a strong correlation between frequency and effectiveness. Data suggest that instructors utilize a variety of teaching methods. The frequency of the models used need to be directly related to the effectiveness of the given model to achieve a specific learning outcome. Considering all of these findings, there appears to be a disconnect between what is considered to be the role of the academic curricula (e.g., academic coursework) compared to the clinical curricula (e.g., clinical practicum). It has yet to be prescribed the knowledge and skills students are expected to acquire in these different settings which likely impacts how instructors design course activities and learning experiences. As healthcare continues in the direction of multidisciplinary and team-based care, educational settings may transition to include more group investigation models. Role-play may also emerge as a new trend with the inclusion of the standardized patient. Continued investigation will only lead to improved training of healthcare professionals.

CHAPTER 1: INTRODUCTION

Bender and Gray (1999) stated the following:

Thinking about teaching begins where all intellectual inquiry begins, with questions about what is going on and how to explain, support, and replicate answers that satisfy us. With the blurring of the boundaries that we have long drawn between faculty roles in research and teaching--and a growing recognition of their common intellectual patterns of questioning, exploring, testing, and professing--a new phrase has emerged, challenging the stereotypes and calling for further amplification: 'the scholarship of teaching'. (p. 1)

The Scholarship of Teaching and Learning (SoTL) uses discovery, reflection, and evidence-based methods to research effective teaching and student learning through university-wide commitment and collaboration. The knowledge gained through SoTL directly influences effectiveness of teaching as determined by student learning, and it elevates teaching from *good* to *scholarly*. Good teaching promotes student learning and other desired student outcomes; however, scholarly teaching views teaching as a profession and something in which to develop expertise (Kreber, 2007). Instructors engage in SoTL to generate and study innovations in teaching; apply and study innovative pedagogies; and better understand the complexities of teaching and learning (Miller-Young, 2015). The American Speech-Language Hearing Association (ASHA), the governing body for speech-language pathologist and audiologists in the United States, sets demanding standards to ensure that students gain knowledge and skills to practice independently as speech-language pathologists. Friberg (2015) stated that:

Continued support for CSD scholars in the form of advocacy and acceptance for SoTL is needed to grow the PCK (pedagogical content knowledge) in speech-language pathology and audiology, encourage scholarly teaching, and maximize opportunities for high quality, evidence-based educational experiences for CSD students. (p. 1)

Models of Instruction

Models of instruction, also referred to as models of learning, help students acquire information, ideas, skills, values, ways of thinking, and means of expressing themselves (Hadley & Fulcomer, 2010; Joyce, Calhoun, & Hopkins, 2009; Munter, Stein & Smith, 2015; Pilav, 2014; Solis, Swanson & McCulley, 2012). Instructional models have been discussed for decades in regards to clinician's preparation in various fields (Alkin & Christie, 2002; Banyard & Fernald, 2002; Franz, Hopper, & Kritsonis, 2007; Lane & Rollnick, 2007; Magliaro, Lockee, & Burton, 2005; Strohmetz & Skleder, 1992), resulting in numerous models from which to choose. Joyce and colleagues (2009) categorized the major models of teaching into four “families”: information-processing, social, personal, and behavioral systems. Within each model are specific methods or techniques, the most common of which are cooperative learning, role-play, induction, memory strategy instruction, and jurisprudential inquiry (referred to as problem-based learned hereafter) (Hadley & Fulcomer, 2010).

Social Models

Social models are used by instructors to generate synergy through learning communities. Group investigation, role-play and problem-based learning are examples of social models. Group investigation allows students to work within a unit to complete a task, such as sharing perspectives on course readings or working on a course project. This model was “designed to lead students to define problems, explore various perspectives on the problems, and study

together to master information, ideas, and skills-simultaneously developing their social competence” (Joyce, Calhoun, & Hopkins, 2009, p. 30). Role-playing allows students to face problems through action, such that a problem is defined, portrayed, and discussed within a dynamic social context. This leads students to better understand the role of persons’ behaviors and social issues while problem solving. A third social model, problem-based learning is an educational approach that faculty can use in which learning is achieved by exploring solutions to problems and can reflect on public policy, legal, and ethical issues, analyzing positions that may be contrary to their own beliefs.

Information-Processing Models

Information-processing models are designed to enhance the general intellectual ability in students helping them make sense of the world through information gathering and problem solving. Memorization is an example of an information-processing model as it allows teachers to help structure and control presentation of academic content to facilitate learning. Another example of the information-processing model is inductive thinking, or the ability to analyze information and create ideas using that information. It is usually thought of as the fundamental thinking skill, and is said to accelerate student’s ability to learn. In most curricula, inductive thinking is thought of as having the process objectives (i.e., learning to build, test, and use categories) combined with the content objectives (i.e., inquiring about and mastering important topics in the curriculum).

Behavioral Systems Models

The behavioral systems family concentrates on observable behavior and clearly defined tasks and methods. Direct instruction is one model of the behavioral systems family, and is characterized by classrooms involving lecture and discussion. It is referred to as a pattern of

teaching that consists of the instructor explaining a new concept or skill to students, who then have their understanding assessed under teacher direction.

Instructional Methods in Speech-Language Pathology

Research suggests that problem-based learning, induction, and direct instruction are among the highest instructional methods used by professors in graduate level speech-language pathology courses (Hadley & Fulcomer, 2010). Hadley and Fulcomer asked participants, who were instructors of graduate speech-language pathology courses, to identify which instructional methods (i.e., role-play, cooperative learning, memory strategy instruction, induction, problem-based learning, and/or direct instruction) were most frequently used in their courses. From the 70 completed surveys returned, they found that problem-based learning, induction, and direct instruction were most frequently used, whereas cooperative learning, memory strategy instruction, and role-play were used less frequently. It was determined that instructors reported using a variety of instructional models to meet learning outcomes.

On a broader perspective, Togher and colleagues (2011) investigated methods used in speech-language pathology programs in Australia, specifically how the university programs in Australia aided student learning in academic and clinical settings and self-evaluated their curricula. Respondents of the studies included academic staff, program coordinators, and clinical educators, and the data suggested that the participants strongly agreed (95%) that the teaching methods to facilitate learning and teaching were based on recommendations from SoTL research. Academic staff and program coordinators stated that they most frequently used tutorials/lectures (80%), assignments (80%), and subject outlines (70%), whereas clinical educators mostly used journal articles (64%), role-play with clients (81%), and written plans (57%). Further, it was noted that academic staff and program coordinators most often use direct

instruction and assignments, both within the behavioral system model of teaching, whereas clinical educators most often use the problem-based and social teaching models, such as case studies and role-play.

Many speech-language pathology graduate level programs have integrated problem-based learning as a teaching approach (Hadley & Fulcomer, 2010), and this method is suggested to fit well with problem-based nature of clinical practice. In fact, Whitehill and colleagues (2014) believe that a problem-based learning approach should be used more frequently in graduate-level speech-language pathology programs, as it has been shown to facilitate a deeper learning of content and better academic performance in undergraduate speech-language pathology students (Mok, Dodd, & Whitehill, 2009).

Teaching methods structured around direct instruction and lectures are effective in building the basic competencies needed in a profession; however, they do not facilitate the development of clinical skills needed to function in a complex working environment (Lusardi, Levangie & Fein, 2002). Plain and simple, those who have the most knowledge are not necessarily the best clinicians. Instead, it is those who value evidence-based practice (i.e., the integration of research, experience, and patient preferences) who have the greatest impact on patients' lives. Instructional methods such as process-oriented teaching and problem-based learning are methodologies aimed at preparing students to be capable of the skills needed to be a vibrant clinician who is active, contextual, nonlinear, and transformative. Those are the skills which exemplify a dynamic clinician (Lusardi, et al., 2002). The question remains, what instructional methods will best equip future clinicians to practice under the guidelines of evidence-based practice? The purpose of this research was to gather preliminary data regarding recently-graduated speech-language pathologists' perspectives on the effectiveness of the

instructional methods used in coursework and feelings of preparedness in clinical practice, specifically with persons with aphasia. This research is a pilot study to provide foundations and direction for future research questions.

Question 1: Are multiple instructional models used in graduate-level aphasia courses?

Hypothesis₀: Multiple instructional models are not used in graduate-level aphasia courses.

Hypothesis₁: Multiple instructional models are used in graduate-level aphasia courses.

Question 2: Are specific instructional models used more frequently than others in graduate level aphasia courses?

Hypothesis₀: There are not specific instructional models used more frequently than others in graduate level aphasia courses.

Hypothesis₁: There are specific instructional models used more frequently than others in graduate level aphasia courses.

Question 3: Are specific instructional models more effective than others in preparing graduate students for clinical practice with persons with aphasia?

Hypothesis₀: Specific instructional models are not more effective than others in preparing graduate students for clinical practice with persons with aphasia.

Hypothesis₁: Specific instructional models are more effective than others in preparing graduate students for clinical practice with persons with aphasia.

CHAPTER TWO: METHODS

Participants

The target population was practicing clinicians in North Carolina who, at the time of the study, held a temporary license to practice speech-language pathology in the state. The temporary license is commonly held by speech-language pathologists who have recently graduated and entered professional practice. Postcard invitations were sent to every clinician on the temporary licensure list obtained from the state board of speech-language pathology and audiology. In addition, emails were sent to recent graduates of the graduate speech-pathology program at Western Carolina University. Unfortunately, the total number of participants who received notice of this research was unknown; however, 23 provided informed consent to participate and 20 completed the survey partially or in its entirety. That is, 3 participants either discontinued prior to answering any survey questions or only provided some demographic information; data from these 3 participants were removed from the analyses. Only 8 of the respondents indicated that they had experience working with the target clinical population of aphasia. Therefore, data from the other 12 respondents were removed from the analyses.

Survey Design

The survey was created and posted online using a web-based survey platform (Qualtrics, 2013), and the final version of the survey required approximately 5 to 10 minutes to complete. The survey incorporated different question types: forced-choice (e.g., yes/no, multiple choice), rating scales (e.g., Likert scales, slider scales), and close-ended questions in regards to demographics.

The survey began with the informed consent form, which participants were required to read and indicate consent before continuing to research questions. After consent, the participants were given definitions and examples of six instructional models: role-play, cooperative learning, memorization, inductive thinking, problem-based learning, and direct instruction. After reviewing the definitions and examples, participants were asked to select all teaching methods used in their graduate-level aphasia course. Of the methods that were selected, participants were then asked to rank the teaching methods by frequency of use, meaning most frequently used to least frequently used. Next, they were asked to rank the methods used by effectiveness, as in which methods were most to least effective in preparing the participant for actual clinical practice. The survey ended by requesting the following demographic data: geographic location, number of months since graduation, number of months in clinical practice, the approximate number of students in graduate cohort, percentage of current caseload spent working with persons with aphasia, and how prepared they felt when working with persons with aphasia. The survey is presented in Appendix A.

Procedures

The study was approved by the Western Carolina University Institutional Review Board in accordance with the protection of human subjects. Information about the research was distributed through multiple mechanisms, including post cards, social networking communities, and direct emails. Potential participants were prompted to visit the WCU Communication Sciences and Disorders departmental website on which the survey link was provided. Consent was obtained at the start of the survey, before research questions were presented.

Data Analysis

Data were analyzed to explore the relationship between the instructional methods' frequency of use and effectiveness in clinical preparation. The categorical data were quantified in terms of frequency counts and percentages, while the mean, standard deviation (SD), and range scores were reported as continuous variables. Statistical analyses were completed to determine normality of the data and to identify statistically significant results. Then, a coefficient of determination (R^2) was determined to identify any significant correlation.

CHAPTER 3: RESULTS

Participant Demographics

Twenty surveys were completed, but only eight respondents indicated that they currently provided services to persons with aphasia. Of these eight respondents, all received their degree from an accredited university within North Carolina. Graduation dates ranged from 2010 to 2016, with most of the responses being 2015 or 2016. Three of the respondents specified that they spent 1%-20% of their time working with persons with aphasia, one specified that he or she spent 21%-40%, two specified that they spent 41%-60%, and another two spent 61%-80% of their time working with this population. No one responded that they spent 81%-100% of their time working with persons with aphasia. It was also reported that two felt “a little bit prepared”; three felt “somewhat prepared”; and three felt “quite a bit prepared”.

Teaching Methods Used

Memorization and direct instruction were selected by all participants (8/8) as being used in the classroom. Group investigation model was selected by 7 of 8. Problem-based learning and role play were only selected by one respondent. Out of all the participants, one participants selected all six options and all eight participants checked at least two options. On average, 3.63 instructional methods were selected These data are shown in Table 3.1.

Table 3.1. Instructional method (GrpInv, Group Investigation; DirInst, Direct Instruction; IndTh, Inductive Thinking; Mem, Memorization; ProBs, Problem-Based learning; RolePlay, Role Play) selected by each participant (e.g., P1, P2, P3), as well as the total number of methods selected (# Selected). In addition, the number of times each instructional method was selected is also shown (Total).

	GrpInv	DirInst	IndTh	Mem	ProBs	RolePlay	# Selected (6)
P1	√	√	√	√			4
P2	√	√		√			3
P3		√		√			2
P4	√	√	√	√			4
P5	√	√	√	√	√	√	6
P6	√	√		√			3
P7	√	√		√			3
P8	√	√	√	√			4
Total (8)	7	8	4	8	1	1	

Frequency of Teaching Methods Used

From most to least frequent, the following teaching methods were identified: direct instruction, memorization, group investigation, inductive thinking, problem-based learning, and role-play. Direct instruction was ranked first by 5 participants (ranging from first to second) with the mean ranking being 1.38 (SD=.48). Memorization was ranked second by 3 participants, with a range from first to fourth, and a mean rank of 2.38 (SD=1.11). The third most frequently used method was group investigation, ranked third by 4 participants, ranging from first to fourth, with the mean rank of 2.71 (SD=.88). Inductive thinking was ranked fourth by 1 participants ranging from second to fourth most frequent with the mean ranking being 3.00 (SD=.71). Problem-based learning was ranked fifth by one participant with a mean of 5.00 (SD=0.00). Role-play was ranked sixth by one participant with the mean ranking being 6.00 (SD=0.00). It should be noted that this was a carry forward question; therefore, the respondents only ranked the teaching

methods that were selected in the previous question as being used in the classroom. These data are shown in Table 3.2.

Table 3.2. The minimum, maximum, and mean (standard deviation) frequency ranking of each teaching methods used.

	Minimum	Maximum	Mean (SD)
Group Investigation	1	4	2.71 (.88)
Direct Instruction	1	2	1.38 (.48)
Inductive Thinking	2	4	3.00 (.71)
Memorization	1	4	2.38 (1.11)
Problem-Based Learning	5	5	5.00
Role-Play	6	6	6.00

Effectiveness of Teaching Methods Used

When arranged most-to-least effective, the teaching methods were arranged in the following order: group investigation, direct instruction, inductive thinking, memorization, role-play, and problem-based learning. Group investigation was reported to be the most effective method of instruction by 5 participants, ranging from first to fourth, with a mean of 1.71 (SD=1.16). Direct instruction was ranked second by 4 participants, ranging from first to third, with a mean of 2.00 (SD=0.71). Inductive thinking was ranked third by one person, ranging from second to fourth, with a mean of 2.60 (SD=0.80). Memorization was ranked fourth by two people, ranging from first to fourth, with a mean ranking of 2.86 (SD=.99). Role-play was ranked fifth by one person with the mean ranking being 5.00 (SD=0.00). Problem-based learning was ranked sixth by one person with the mean ranking being 6.00 (SD=0.00). These data are shown in Table 3.3.

Table 3.3. The minimum, maximum, and mean (standard deviation) effectiveness rankings of the teaching methods used.

	Minimum	Maximum	Mean (SD)
Group Investigation	1	4	1.71 (1.16)
Direct Instruction	1	3	2.00 (0.71)
Inductive Thinking	2	4	2.60 (0.80)
Memorization	1	4	2.86 (.99)
Problem-Based Learning	6	6	6.00
Role-Play	5	5	5.00

Relationship Between Frequency and Effectiveness

Table 3.4 shows comparison data between frequency and effectiveness. Using nonparametric methods, Pearson correlation coefficients were used to identify the statistically significant relationships existing between frequency and effectiveness. Specifically, the correlation coefficient squared (R^2) was determined which described the correlation between two variables. In this study, the two variables were the instructional methods average rankings of frequency and effectiveness. R^2 measured the percent of variation that frequency could be attributed to the effectiveness of the teaching method used. After computing the data, R^2 was determined to be 0.7895, which suggested a moderate to strong correlation between frequency and effectiveness. Specifically, 79% of the variation in frequency is due to the variation in effectiveness, indicating that they are moderately to strongly correlated.

Table 3.4. Data comparing rank for frequency and effectiveness from 1 (most frequent, most effective) to 6 (least frequent, least effective).

	Frequency	Effectiveness
Group Investigation	3	1
Direct Instruction	1	2
Inductive Thinking	4	3
Memorization	2	4
Problem-Based Learning	5	6
Role-Play	6	5

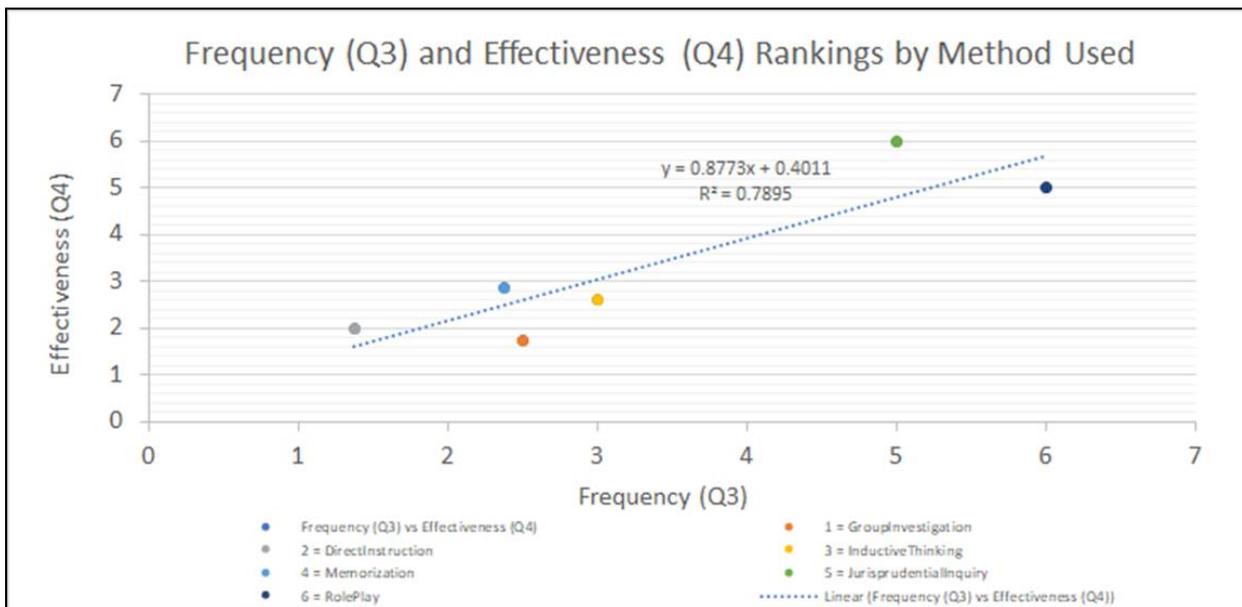


Figure 3.1. Correlation between frequency and effectiveness, with lower values suggesting higher frequency and effectiveness ratings.

CHAPTER 4: DISCUSSION

Conclusion and Implications

This study gathered initial data regarding the frequency and effectiveness of instructional methods used in aphasia curriculum as perceived by speech-language pathologists holding the temporary licensure to practice. Given the current data, participants reported that direct instruction and memorization were used most frequently in the graduate aphasia classroom. Direct instruction emphasizes clearly developed objectives and monitoring of progress on those objectives (Joyce et al., 2000) by incorporating critical thinking and problem solving (Price, 2003), whereas memorization is often a means by which that information is initially stored for later recall. Thus, it could be argued that direct instruction and memorization are useful to ensure the student has acquired specific, foundational clinical knowledge that would be relevant to clinical application and problem solving, and the impact of memorization may not be fully understood or appreciated by students. Bottom line, in the healthcare field and within clinical training, students must be able to recall core information about a clinical profile or management approach and apply it in a relatively novel context.

Group investigation and inductive reasoning models were less frequently reported as being used; however, were indicated as being fairly effective, especially group investigation which was ranked most effective. Given this era of interdisciplinary practice, it is somewhat surprising that this method is not more frequently utilized. Group investigation naturally employs inductive thinking in which the student learns through asking questions, creating answers and interpreting knowledge (Gredler, 2001). Students are required to think critically to improve problem-solving skills because healthcare expects clinicians to function in a more

complex, ever-changing clinical environment (Lusardi, Levangie, & Fein, 2002). Masters, O'Toole, and Jodon (2013) found that the students who were prepared with this method were more equipped to assume their roles and responsibilities as an effective team member. However, group investigation poses some challenges, notably in grading. To address this, Winchester-Seeto (2002) suggested that when grading group work, the instructor can choose to assess either the product or the process, and these judgments can be made by the instructor or the group members. A shared group grade can be given in which the group submits one product and all group members receive the same grade. Other methods include group average grade, individual grade per assigned tasks, or individual grade through examination. Ultimately, students in speech-language pathology will be working within their interdisciplinary teams throughout their careers, and they need to develop team-based skills (Riddle, 2016). Perhaps the clearly defined grading methods could alleviate some concerns when utilizing the group investigation model (Winchester-Seeto, 2002).

Role-play was ranked sixth most frequent and fifth most effective, indicating that it is not used primarily in the classrooms; however, literature is now emerging on the use of standardized patients which would allow for more realistic role-play experiences. A standardized patient can be a trained actor to replicate certain symptoms or a patient who has been taught to present his/her symptoms (Zraick, 2014). The use of standardized patients allows for a controlled condition for instruction, assessment, and/or practice of communication. In addition, it allows for a standard clinical experience and the provision of immediate real-time feedback (Zraick, 2014). This process allows students to build knowledge and experience through practice in a learning environment where harm to a patient is minimized. Zraick (2014) explained that clinical education in speech-language pathology has expanded problem-based learning methods to

include role-play via simulation using these standardized patients. Specific to speech-language pathology, standardized patients have been able to portray children and adults with a variety of speech, language, hearing and swallowing disorders, and cases have been presented as a single patient in the context of a case study to multiple cases for assessing clinical competencies. The relatively low frequency of use in this current study and in the study completed by Hadley and Fulcomer (2010), despite showing significant reported effectiveness, suggests a need for additional research on the impact of role play and the standardized patient in graduate level speech-language pathology programs.

Considering all of these findings, there appears to be a disconnect between what is considered to be the role of the academic curricula (e.g., academic coursework) compared to the clinical curricula (e.g., clinical practicum). It has yet to be prescribed the knowledge and skills students are expected to acquire in these different settings, whether academic or clinical. In other words, is the classroom meant to provide students with the foundations of theory, terminology, and clinical profiles, as examples, or should students acquire experiences with assessment tools and treatment approaches in this academic context? Or, is the clinical practicum where students learn to interpret assessment findings and design a treatment to meet those individual client needs? Because speech-language pathology education includes both acquisition of knowledge and development of skill, perhaps the anticipated outcomes of each learning environment should be more clearly defined. This would ensure that faculty and students understand the purpose and expectations of myriad learning opportunities towards the ultimate goal of practicing speech-language pathology. Togher and colleagues (2011) argue that there is a difference in classroom and clinical teaching. In the classroom, the content is established. Without the content, there is nothing upon which clinical skills can be developed.

Limitations

The researchers have identified several limitations regarding the study. First, and importantly, the sample from which data were obtained unintentionally became a sample of convenience. Every attempt was made to recruit participants from a state-wide population. However, only mailing addresses were obtained for the target group, and that resulted in a less ideal method of recruitment: postcards. The sample was very small, and more than likely, participants were those who had a connection to the primary investigators academic institution. Obviously, a more heterogeneous sample of practicing SLPs is necessary for broader application of findings. Second, there is always a concern that respondents might not have truly understood the instructional methods in question. Although definitions and examples were provided, participants misunderstood methods or misidentified them given the amount of time since the aphasia graduate course was completed. Including those definitions and examples throughout each page of the survey would increase the likelihood that participants remembered the correct definition and examples of each.

Future Directions

Understanding how to best train speech-language pathologists for independent clinical practice is important. Exploring this in the context of specific patient populations is also important because preparing for one disorder type will differ from another. Future studies need to focus on the same questions, but recruitment must expand. These data have very little to contribute to the greater body of knowledge because of the limitations previously described regarding recruitment and sampling. Collaborating with graduate speech-language pathology programs across the country to survey recent graduates would likely result in a more robust data set from which true implications can be discussed.

Conclusion

SoTL directly relates to the profession of speech-language pathology. There are numerous models of instruction that can be chosen by professors of higher education. The purpose of this study was to investigate the frequency and effectiveness of six models of instruction. Findings of this pilot suggest that faculty use a number of methods when targeting educational objectives, which is encouraging, but these methods may not be the most appropriate for eventual clinical practice. The role of classroom and clinical education settings should be more clearly defined so that expectations of faculty and students are understood, and so that students graduate with the knowledge and skills needed to begin a career as a speech-language pathologist.

REFERENCES

- Alkin, M. C., & Christie, C. A. (2002). The use of role-play in teacher evaluation. *American Journal of Evaluation, 23*, 2009-218.
- ASHA (2016). 2014 Standards and implementation procedures for the certificate of clinical competence in speech-language pathology. Retrieved from <http://www.asha.org/Certification/2014-Speech-Language-Pathology-Certification-Standards/>
- Banyard, V. L., & Fernald, P. S. (2002). Simulated family therapy: A classroom demonstration. *Teaching of Psychology, 29*, 223-226.
- Bender, E., & Gray, D. (1999). The scholarship of teaching. *Indiana University Research & Creative Activity, 22* (1).
- Bligh, D. A. (2000). What's the use of lectures? San Francisco: Jossey-Bass.
- Carroll, E., Willimas, R. L., & Hautau, B. (2006). Cooperative learning contingencies: Unrelated versus related individual and group contingencies. *Journal of Behavioral Education, 15*, 191-202.
- Franz, D. P., Hopper, P. F., & Kritsonis, W. A. (2007). National impact: Creating teacher leaders through the use of problem-based learning. *National Forum of Applied Educational Research Journal, 20*(3), 1-9.
- Friberg, J. (2015, April). Framing SoTL: Understanding the scholarship of teaching and learning and its role in CSD (part 1). Retrieved from <https://www.asha.org/Articles/Framing-SoTL-Part-1/>.

- Gage, N. L. T. (1978). *The scientific basis of the art of teaching*. New York: Teachers College Press.
- Good, T. L. (1979). Teacher effectiveness in the elementary school. *J O*, 0(2), 52-64.
- Gredler, M. E. (2001). *Learning and instruction: Theory into practice* (4th ed.). Upper Saddle River, NJ: Prentice Hall.
- Gunter, M. A., Estes, T. H., & Mintz, S. L. (2007). *Instruction a models approach* (5th ed.). Boston: Allyn & Bacon.
- Hadley, A. J., & Fulcomer, M. C. (2010). Models of instruction used in speech-language pathology graduate programs. *Communication Disorders Quarterly*, 32(1), 3-12.
- Harten, A. C. (2012). Role-Playing and its carryover to practice in speech-language pathology. *Perspectives on Issues in Higher Education*, 15(1), 29-37.
- Hill, A.E., Davidson, B.J., & Theodoros, D. (2010). A review of standardized patients in clinical education: Implications for speech-language pathology programs. *International Journal of Speech-Language Pathology*, 12(3), 259–270.
- Huber, M., & Hutchings, P. (2005). *The Advancements of Learning: Building the teaching commons*. The Carnegie Foundation Report on the Scholarship of Teaching and Learning. The Carnegie Foundation for the Advancement of Teaching, San Francisco, Jossey-Bass.
- Ironside, P. M. (2005). Teaching thinking and reaching the limits of memorization: Enacting new pedagogies. *Journal of Nursing Education*, 44(10), 441-449.
- Joyce, B., Calhoun, E., & Hopkins, D. (2009). *Models of learning - tools for teaching*. Maidenhead: Open University Press.

- Joyce, B., Weil, M., & Calhoun, E. (2000). *Models of teaching* (6th ed.). Boston: Allyn & Bacon.
- King, P. E., & Behnke, R. R. (2005). Problems associated with evaluating student performance in groups. *College Teaching*, 53(2), 57-61.
- Kreber, Carolin. (2007). What's it really about? *International Journal for the Scholarship of Teaching and Learning*, 1(1), 1-4.
- Lane, C., & Rollnick, S. (2007). The use of simulated patients and role-play in communication skills training: A review of the literature to August 2005. *Patient Education and Counseling*, 67(1/2), 13-20. Retrieved January 8, 2008, from Science Direct database.
- Lusardi, M., Levangie, P., & Fein, B. (2002). A problem-based learning approach to facilitate evidence-based practice in entry-level health professional education. *Journal of Prosthetics & Orthotics (JPO)*, 14(2), 40-50.
- Magliaro, S., Lockee, B., & Burton, J. (2005). Direct instruction revisited: A key model for instructional technology. *Educational Technology Research and Development*, 53(4), 41-56. (ERIC Document Reproduction Service No. EJ732692)
- Masters, C., O'Toole Baker, V., & Jodon, H. (2013). Multidisciplinary, Team-Based Learning: The Simulated Interdisciplinary to Multidisciplinary Progressive-Level Education (SIMPLE©) Approach. *Clinical Simulation in Nursing*, 9(5), e171-8.
doi:10.1016/j.ecns.2011.11.007
- Medley, D. M. (1979). The effectiveness of teachers. In P. L. Peterson, & H. J. Walberg (Eds). Berkeley, California: McCutchan.
- Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A comprehensive guide*. San Francisco: Jossey-Bass.

- Miller-Young, J. (2015, February 11). *How to tell the story of SoTL*. Retrieved from <http://blogs.mtroyal.ca/isotl/2015/02/11/how-to-tell-the-story-of-sotl/>.
- Mok, C., Dodd, B., & Whitehill, T. (2009). Speech-language pathology students' approaches to learning in a problem-based learning curriculum. *International Journal of Speech-Language Pathology, 11*(6), 472-481. doi:10.1080/17549500903003052
- Munter, C., Stein, M. K., & Smith, M. A. (2015). Dialogic and Direct Instruction: Two Distinct Models of Mathematics Instruction and the Debate(s) Surrounding Them. *Teachers College Record, 117*(11).
- Peterson, P. L. (1978). Direct instruction: Effective for what and for whom? *Association for Supervision and Curriculum Development, 1*(1), 46-48.
- Pilav, S. (2014). Evaluation of Three Models of Instruction for 9th Grade Turkish Literature Course and Implications for Teachers. *Educational Research and Reviews, 9*(12), 346-355.
- Price, K. M. (2003). *Daily planning for today's classroom: A guide to writing and activity plans* (2nd ed.). Belmont, CA: Thomson/Wadsworth.
- Qualtrics. (2013). *Qualtrics Survey Software (Version 39660)* [Computer software]. Provo, UT: Qualtrics.
- Riddle, R. (2016). Ideas for great group work. [Web log comment]. Retrieved from <https://learninginnovation.duke.edu/blog/2016/10/ideas-great-group-work/>
- Rosenshine, B. V. (1979). Content, time, and direct instruction. In: P. L. Peterson & H. J. Walberg (Eds). Berkeley, California: McCutchan.
- Samuels, H. (2013). 20th-Century Humanism and 21st-Century Technology: A Match Made in Cyberspace. *English Teaching Forum, 51*(3), 2-9.

- Scudder, R.R. (2006, May 5). The pedagogy of university teaching. Retrieved February 6, 2006, from <http://www.asha.org/memebrs/phd-faculty-research/teach-tools/scudder.html>
- Solis, M., Vaughn, S., Swanson, E., & McCulley, L. (2012). Collaborative models of instruction: The empirical foundations of inclusion and co-teaching. *Psychology in The Schools, 49*(5), 498-510. doi:10.1002/pits.21606
- Strohmetz, D. B., & Skleder, A. A. (1992). The use of role-play in teaching research ethics: A validation study. *Teaching of Psychology, 19*, 106-108.
- Thompson, W. B., Vermette, P. J., & Wisniewski, S. A. (2004). Ten cooperative learning activities for the cognitive psychology course. *Teaching of Psychology, 31*, 134-136.
- Togher, L., Yiannoukas, C., Lincoln, M., Power, E., Munro, N., McCabe, P., & ... Douglas, J. (2011). Evidence-based practice in speech-language pathology curricula: A scoping study. *International Journal of Speech-Language Pathology, 13*(6), 459-468. doi:10.3109/17549507.2011.595825
- Winchester-Seeto, T. (April 2002). Assessment of collaborative work – Collaboration versus assessment. Invited paper presented at the Annual Universe Science Symposium, The University of Sydney
- Whitehill, T. L., Bridges, S., & Chan, K. (2014). Problem-based learning (PBL) and speech-language pathology: A tutorial. *Clinical Linguistics & Phonetics, 28*(1/2), 5-23. doi:10.3109/02699206.2013.821524
- Zraick, R.I. (2012). A review of the use of standardized patients in speech pathology clinical education. *International Journal of Therapy and Rehabilitation, 19*(2), 112–118.

Zraick, R. I. (2014, March). The Use of Standardized Patients in Communication Sciences and Disorders. Retrieved February 26, 2018, from <https://www.asha.org/Articles/Use-of-Standardized-Patients-in-CSD/>

APPENDIX A: CONSENT FORM

From Teaching to Practice: Pedagogical Models for Clinical Aphasia

What is the purpose of this research?

You are invited to participate in a research study to better understand instructional methods currently used in graduate-level adult language disorders (i.e., aphasia) courses, and the extent to which you feel these methods prepared you for clinical practice with this population.

What will be expected of me?

Information will be gathered using an online survey.

How long with the research take?

This survey will take approximately 5-minutes of your time to complete.

How will you use my information?

Data will be collected anonymously. It may be presented at a state or national convention or in a peer-reviewed publication at which time summary data for the whole group will be reported. Your identity and privacy will be protected.

Can I withdraw from the study if I decide to?

Participation in this research is voluntary, and you may stop at any time. If you choose to stop, you have the right to request that your data not be included in the study. If you choose not to participate or to withdraw from the study, there are no consequences to you.

Is there any harm that I might experience from taking part in the study?

There are no foreseeable risks to participating in this study.

How will I benefit from taking part in the research?

There are no direct benefits to you; however, your responses will be used to better understand current instructional methods in graduate level aphasia courses and how they best prepare students for later clinical practice.

Who should I contact if I have questions or concerns about the research?

Please feel free to ask questions regarding this study or your rights; questions may be directed to Dr. Leigh Odom, Associate Professor in the Department of Communication Sciences and Disorders at Western Carolina University, at KMomod@email.wcu.edu or (828) 227-3834.

If you have concerns about your treatment as a participant in this study, contact the chair of WCU's Institutional Review Board through the office of Research Administration at WCU (828-227-7212).

APPENDIX B: SURVEY

Operational definitions:

Below is a list of instructional methods commonly used in graduate-level speech-language pathology courses. Please review the definitions and examples of each to ensure your understanding of what is meant by each term.

- Cooperative learning: Work to achieve a common task within a group. For example, sharing information on readings or working on a long term project within a group.
- Direct instruction: Curricular material is broken down into steps and presented in order; objectives are stated and are related to learner outcomes. For example, having lecture and discussion as a whole class.
- Induction: Work through concepts via thorough investigation, logic, and reasoning. For example, observation, classification, inference, prediction, and verification.
- Memory strategy instruction: The instructor includes facilitation of the learner's interacting with and encoding new knowledge. For example, use of mnemonic strategies through rehearsal or use of external cues such as organizers and other visual aids.
- Problem-based learning: The instructor serves as a facilitator but not as the transmitter or sole source of knowledge. For example, work in groups to solve real-life problems or situations.
- Role-Play: Problem solving through delineating the problem, acting out a situation, and discussing the results.

Teaching Methods Used

For the question that follows, please respond as it pertains specifically to your graduate-level adult language disorders (i.e., aphasia) course(s).

1. Select all of the teaching methods used by the instructor of your graduate-level adult language disorders (i.e., aphasia) course(s).
 - Cooperative learning
 - Direct instruction
 - Induction
 - Memory strategy instruction
 - Problem-based learning
 - Role-Play

Ranking of Teaching Methods Used by Frequency

For the question that follows, please respond as it pertains specifically to your graduate-level adult language disorders (i.e., aphasia) course(s).

1. Below are the instructional methods that you indicated were used in your adult language disorders graduate course(s). Of those presented, arrange them to represent the frequency of use

in the classroom (i.e., which were predominantly used or less frequently used). The most frequently should be listed first (at the top) and then ordered to least frequently used.

LIST DEPENDS ON THEIR SELECTIONS

Ranking of Teaching Methods Used by Effectiveness

For the question that follows, please respond as it pertains specifically to your graduate-level adult language disorders (i.e., aphasia) course(s).

1. Now arrange them to represent the effectiveness of each method in preparing you for clinical practice with the aphasia population after graduation. If you are not currently practicing with this population, respond as it relates to your confidence in your ability should the opportunity arise. The most effective should be listed first (at the top) and then ordered to least effective used.

LIST DEPENDS ON THEIR SELECTIONS

Demographics

1. In which state/territory did you earn your degree in Speech-Language Pathology?
 - _____
2. What is the month/year of your graduation from the Speech-Language Pathology program?
 - _____
3. How many months have you been in clinical practice with your temporary license?
 - _____
 - I currently hold the permanent license in my state.
4. What was the approximate number of students in your cohort (i.e., your class) while in the graduate program?
 - _____
5. What percentage of your caseload is spent working with persons with aphasia?
 - 0% of the time
 - 1%-20% of the time
 - 21%-40% of the time
 - 41%-60% of the time
 - 61%-80% of the time
 - 81%-100% of the time
- How well did your graduate-level adult language disorder course(s) prepare you for working with persons with aphasia? In other words, how prepared did you feel upon graduation?
 - Not at all prepared
 - A little bit prepared
 - Somewhat prepared
 - Quite a bit prepared

- Very much prepared
- Completely prepared

APPENDIX C: POSTCARD

**From Teaching to Practice: Pedagogical Models
for Clinical Aphasia**

As a newly licensed Speech-Language Pathologist, you are invited to participate in a research study sponsored by Western Carolina University's Department of Communication Sciences & Disorders.



Western Carolina University

Department of Communication Sciences & Disorders
4121 Little Savannah Road
Cullowhee, NC 28723

The purpose of this study is to determine which instructional methods are used in graduate-level speech-language pathology courses and how effectively they prepared you for clinical practice.

**We hope you will go online and
complete this quick survey.
Responses are anonymous.**

<http://commdis.wcu.edu>

**FOR MORE INFORMATION CONTACT:
DR. LEIGH ODOM
KMODOM@WCU.EDU | 828-227-3834**