Title: "Emotional Intelligence, Critical Thinking and Effective Clinical Interviewing"

Abstract: The ***broad, long-term objective*** of this proposal is to develop effective teaching protocols that can be used by pre-clinical programs to improve the clinical skills of allied health professionals. The ***health-relatedness*** of the project is the relationship between well-trained clinicians and clinical outcomes. If programs can effectively improve the communication skills of students by implementing research-tested pedagogical methods and protocols, allied health professional will be better equipped to meet the needs of their patients. In order to achieve our ***research outcomes***, we have developed a specific training protocol for teaching the clinical interview based on the framework of Routines-Based Interview training. This protocol was created according to evidence-based practices in the field of adult education, specifically Participatory Adult Learning Strategy. Graduate students from graduate Speech-Pathology Program will participate in a training program designed to increase their clinical interviewing skills. The program will employ hands-on activities, skills-based practice, formative feedback, peer evaluation, self-reflection, and the use of simulated interviewing with standardized patients. The researchers will evaluate the participants using checklists, rating scales, and behavioral event coding. This data will be compared to the students' academic records and the results of standardized emotional intelligence and critical thinking assessments. The current project will be an exploratory study using graduate students in the Speech-Language Pathology program with the intent to utilized the results to inform an expanded study.

Purpose: The ***specific aims*** are 1) Determine the relationship between specific Emotional Intelligence (EI) traits, critical thinking, and effective clinical interviewing; 2) Determine the effect of using the Participatory Adult Learning Strategy (PALS) on effective clinical interview skills; and 3) Examine the interaction between EI abilities, critical thinking, and clinical learning outcomes. The overall ***impact*** of this research is evaluate whether certain emotional intelligence traits have a significant relationship with clinical interviewing skills and whether emotional intelligence is related to the ability to acquire clinical interviewing skills. Specific trainings can then be developed using tested techniques to enhance those traits in students. The proposed work is innovative because it combines the research coming from the adult education field with pre-clinical training. If effective training protocols can be developed, there is the potential for improved patient outcomes.

Background:

Those who train the next generation of clinicians, whether in the medical or allied health fields, have a responsibility to prepare students based on the most established methods of instruction. This depends on lines of inquiry concerned with both the traits of a good clinician and the most effective ways of training them. A recent topic of interest in clinical education programs is how to produce practitioners with emotional intelligence that rivals their technical knowledge [1, 2, 3, 4, 5]. The relationship between the soft skills associated with emotional intelligence and clinical competency is becoming an important area of

research for the medical and allied health fields. There has been little research produced yet on the interaction of emotional intelligence, critical thinking, and better clinical outcomes; however, the current underlying theory is that greater emotional intelligence and better critical thinking skills should yield better patient-provider relationships [6].

When considering the quality of the health care practitioner - patient relationship, EI is a fundamental component of effective practice and is generating increased interest in the field of health care [7]. From hospital administrators and physicians and nurses to allied health practitioners, collaboration is needed not only to improve cost effectiveness of practice but also to ensure patient compliance and satisfaction.

Intelligence is a concept that can be defined in various ways, such as dependent on memories or processes, verbal intelligence, or spatial intelligence. The traditional classification of intelligences divides them into (a) verbal and propositional and (b) perceptual and organizational areas, although for decades investigators have been searching for the hard-to-define third intelligence that adequately accounts for individual differences in intelligence [8]. Early definitions of social intelligence alluded to these differences in a person's ability to successfully manage human relationships, but it was not until the early 1980s that the idea of multiple intelligences began to surface [9]. During this same time, research on emotions was growing, most notably investigations into Darwin's ideas regarding the universality of expression of emotion [10]. As emotions convey such valuable information regarding individuals and their relationships with others, the effective understanding and managing of emotions is now considered a type of intelligence. Mayer and Salovey highlighted the difference between personality traits and EI, in that the former may rely on various social skills or preferences, "whereas truly knowing what a person feels is a mental ability" [11]. The theory of EI is based on several key ideas. From the field of intelligence, it takes the idea that intelligence must include the ability to think abstractly. From research on emotions it takes that emotions are signals that give meaning regarding relationships. Another key idea is that many emotions can be considered universal in that they are recognized through basic emotional expressions across various cultures.

Salovey and Mayer contended that EI is a set of abilities that allows individuals to engage in complex processing regarding their own and others' emotions, as well as to use that information to guide thoughts and behavior. To this end, individuals with high EI are able to use, understand, and manage emotions effectively, which works to their own and others' benefit [12]. Emotional Intelligence is defined as an ability-based skill. Which means that adults can improve their emotional intelligence through education and training [6, 13]. When EI is conceptualized as an ability that can be taught, learned, and changed, it may be used to address the specific aspects of the clinician–patient relationship that are not working well.

In addition to EI, the concept of critical thinking skills has been closely tied with clinical competency in the pre-clinical medical training literature [14]. Critical thinking is the process by which we parse complex situations into simpler components to deeper our

understanding and create novel solutions. It is a skill that clinicians rely on when applying their technical background knowledge to clinical situations. It is important for developing effective diagnostic and treatment plans. However, like EI, the research into the specific nature of the relationship between critical thinking skills and clinical skills is limited.

We know that incorporating certain instructional methods leads to better learning outcomes in adult students [e.g., 15, 16]. Research has shown that adult learning is most effective when it includes trainer introduction, demonstration, and explanation of the benefits of mastering content knowledge or practice, active and authentic student learning experiences, opportunities for students to reflect on their learning experiences, instructor or mentor supports and feedback during training, and extended follow-up supports to reinforce learning. Dunst and Trivette have also determined that the effects of these methods are significantly moderated by using at least 4 methods in one training and keeping the training group to less than 40 participants.

It is clear that creating effective preservice training can be done using the above research-based methods; however, we do not yet know if those instructional methods are effective in improving clinical skills. If this link can be established, it will aid in advancing the state of education for all pre-clinical skills. In addition, if the relationship between EI, critical thinking, and clinical competency can be understood, this would inform the aim and construction of educational experiences.

Methodology

A. Subjects: Subjects for the pilot study will be 33 first-year students in the Speech Pathology graduate program.

B. Data collection procedures:

MSCEIT Testing. The *Mayer-Salovey-Caruso Emotional Intelligence Test™* is an independently validated measure of emotional intelligence. It is widely used in a variety of settings, most relevantly in research and education. It is self-administered online.

Cornell Critical Thinking Test (CCTT) Level Z. The CCTT Level Z is a general –content, multi-aspect, critical thinking ability test. It has normative data from high-school age throughout adulthood. It is widely used in educational research to measure the critical thinking factors of induction, deduction, observation, credibility, assumptions, and meaning. It is also self-administered, but in paper format.

Routines-Based Interview (RBI) Implementation Checklist. The RBI was developed by Dr. Robin McWilliam and colleagues as a method of conducting effective interviews with the caregivers of young children with developmental concerns. The checklist was developed in conjunction with a rigorous training institute in order to establish practitioner fidelity. For our purposes, we have

adapted both the structure of the interview and the checklist to fit the current participants (i.e., graduate students). The checklist will be utilized by the co-investigator to score the students' pre- and post-training interviews. The students will score themselves and their peers during mock interviews to identify areas in need of improvement.

Standardized Patients Rating Scale. This scale was adapted from the Revised UIC Communication and Interpersonal Skills scale created by Iramaneerat and colleagues. Since the scale was originally used to evaluate clinical interviews completed by medical students, some adjustments were made to more closely reflect the conditions of an allied health therapist's clinical interview. This scale will be used by the standardized patients to evaluate the students during their pre- and post-training interviews.

Study Instruments. Because there is no validated self-efficacy scale for clinical interview, a simple scale has been developed for this project in order to gauge the participants' confidence in their abilities before and after instruction. A set of event codes will be created in order to analyze the video recordings of the simulated interviews for specific behaviors such as eye contact, head nodding, recasting as well as other forms of active listening and engagement. Reliability testing will be employed to ensure an acceptable interrater reliability of video coders.

Instruction Procedures. Instruction in this project will consist of a combination of short pre-recorded lectures that will be presented as webinars, video recordings of an RBI conducted to fidelity, individual and group in-class activities, self-reflection activities, individual feedback sessions and improvement plans, mock interviews with peers, peer feedback and group debriefing. These activities were created in accordance with PALS [15].
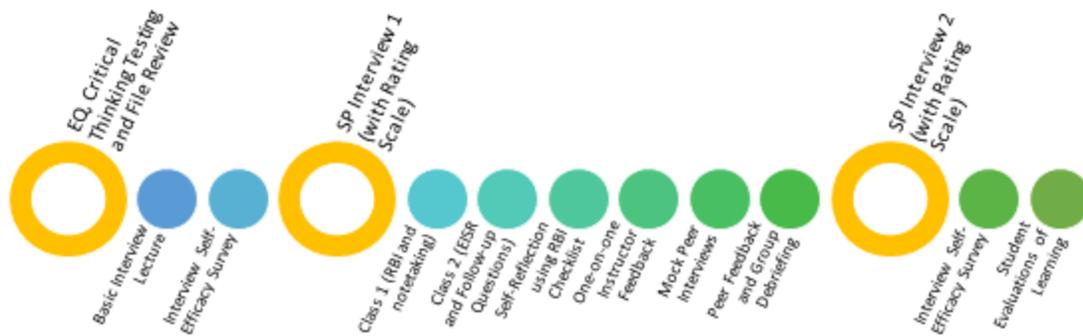
Figure 1. Testing and Instruction Protocol for Pilot

Using the protocol illustrated above, researchers will collect participants' academic records (GPA, GRE Scores). Participants will then be directed to complete the MSCEIT online before the beginning of training. During the first class on clinical interviewing, an introductory lesson on the basic concepts of clinical interviewing will be provided using a pre-recorded PowerPoint lecture. Participants will complete an Interview Self-Efficacy Scale Survey at the conclusion of this lecture. Participants will then be assigned reading materials that include an explanation of the Routines-Based Interview and its protocol. The first round of standardized patient interviews will occur within 48 hours of the introductory lesson. These interviews will last no more than 30 minutes and will be video and audio recorded and saved for viewing by the researchers. Standardized patients will score the participants on a rating scale of several traits including how successful they believe the participant was in completing their interview. The recorded interviews will be event coded for specific behaviors. Researchers will score the participants using an implementation checklist adapted from the Routines-Based Interview Implementation Checklist and the event coding data.

Participants will return to the classroom and receive instruction on the Routines-Based Interview through short pre-recorded lectures interlaced with in-class activities that allow them to practice note-taking skills, question development, and evaluating the quality of an interview. They will be assigned short readings and skills-based practice to complete between class periods. They will be given their interview recordings to view and evaluate based on the information they were given in class and asked to produce a self-reflection on their strengths and weaknesses and possible goals for improvement. They will then

meet with the researchers, who will provide individualized feedback and consult on their improvement plan.

In the next class period, they will conduct mock peer interviews in groups of three with students playing the roles of interviewers, family members (using prepared vignettes), and evaluators. They will run through three interviews so that each student is able to participate in each role. They will be expected to prepare a peer review of the interview they evaluated and provide constructive criticism that they will share during the next class period. The final class time will be spent debriefing the entire class on the interview experience and answering any questions that may have come up. The students will then complete a second round of standardized patient interviews under the same conditions as the first round.

Participants will then be asked to complete the Interview Self-Efficacy Scale Survey again as well as an evaluation of their learning in the training.

> **C. Confidentiality:** All data collected will be labeled only by participant number and stored in locked file cabinets, if in hard copy, or a password protected data storage device. A master file containing the names of participants and their participant number will be stored electronically in a separate file. All activities are required course activities for CSAD 664 However, the students will be briefed on the project and given the option to have their data removed from the aggregate. The Principal Investigator will monitor the consent process and keep the Co-Investigator blind to which students have given consent. The testing and instruction procedures will be conducted solely by the Co-Investigator.

> **D. Potential risks or discomforts to participants:** There are no potential risks or discomforts associated with this project beyond what would be expected from a typical course experience.

> **E. Identify any potential financial or other conflicts of interest:** There are no conflicts of interest.

> **F. Data analysis:** We will use multiple regression to determine the effects of EQ, Critical Thinking, and instruction on post-instruction interview scores. Student GPA, GRE scores, self-efficacy scores, and pre-instruction interview scores will be controlled for. Data will be used to refine the study and instruction materials and procedures for future studies. There is no intent on publishing the material from this pilot study.

> **G. Timeframe:** The training and data collection should take place over a three-week period.

Principal and Co-Investigators: Dr. Jayne Brandel, Chair of the Communication Sciences and Disorders Department; Allegra Cornaglia, Doctoral Student and GTA.

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