

2014

Evaluating the Efficacy and Acceptability of Videoconferencing in School-Based Behavioral Consultation

Aaron Jason Fischer

Louisiana State University and Agricultural and Mechanical College, afisch4@lsu.edu

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_dissertations

 Part of the [Psychology Commons](#)

Recommended Citation

Fischer, Aaron Jason, "Evaluating the Efficacy and Acceptability of Videoconferencing in School-Based Behavioral Consultation" (2014). *LSU Doctoral Dissertations*. 596.

https://digitalcommons.lsu.edu/gradschool_dissertations/596

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Doctoral Dissertations by an authorized graduate school editor of LSU Digital Commons. For more information, please contact gradetd@lsu.edu.

EVALUATING THE EFFICACY AND ACCEPTABILITY OF VIDEOCONFERENCING IN
SCHOOL-BASED BEHAVIORAL CONSULTATION

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Psychology

by

Aaron J. Fischer

M.A., Louisiana State University, 2012

August 2014

TABLE OF CONTENTS

| | |
|--|----|
| LIST OF TABLES..... | v |
| ABSTRACT..... | vi |
| INTRODUCTION..... | 1 |
| Mental Health Consultation..... | 1 |
| The “Behavioral” in Behavioral Consultation..... | 3 |
| BC as a problem-solving model..... | 7 |
| Participant’s roles in BC..... | 7 |
| School-based BC..... | 8 |
| Advantages of school based BC..... | 10 |
| Verbal interactions and school-based BC..... | 11 |
| Consultation Analysis Record..... | 14 |
| Consultation Analysis Checklist..... | 14 |
| Assumptions and the reconceptualization of BC..... | 15 |
| Response to Intervention..... | 16 |
| Advantages of RTI..... | 18 |
| Rural School Psychology..... | 19 |
| Individuals with Disabilities Education Improvement Act..... | 21 |
| School Resources and BC..... | 23 |
| Videoconferencing..... | 24 |
| Effectiveness of videoconferencing..... | 26 |
| Technology and videoconferencing in schools..... | 29 |
| Acceptability of videoconferencing..... | 30 |
| Evidence-based practice for videoconferencing..... | 31 |
| Legal and ethical considerations during videoconferencing..... | 32 |
| Technical considerations during videoconferencing..... | 35 |
| Cost-effectiveness of videoconferencing..... | 36 |
| Purpose and Hypotheses..... | 38 |
| METHOD..... | 39 |
| Participants and Setting..... | 39 |
| Measures..... | 40 |
| Consultation Analysis Record..... | 40 |
| Consultation Analysis Checklist..... | 40 |
| Fast Form of the Technology Acceptance Model..... | 41 |
| Distance Communication Comfort Scale..... | 42 |
| Research Design and Power Analysis..... | 43 |
| Procedure..... | 44 |
| Transcription..... | 46 |
| Verbalization Coding..... | 46 |
| Treatment Integrity..... | 47 |
| Multivariate Statistics..... | 47 |

| | |
|---|----|
| RESULTS..... | 50 |
| Efficacy..... | 50 |
| Acceptability..... | 52 |
| Moderators of the Acceptability..... | 53 |
| Interview Duration..... | 53 |
| DISCUSSION..... | 55 |
| Acceptability..... | 55 |
| Efficacy..... | 56 |
| Efficiency of Videoconferencing..... | 59 |
| Implications for School Psychologists..... | 60 |
| Limitations..... | 61 |
| Student Outcomes and Efficacy..... | 61 |
| Consultative Services..... | 62 |
| Including All of the Interviews of BC..... | 63 |
| Wi-Fi Network and Bandwidth..... | 63 |
| Heterogeneity of the Sample..... | 63 |
| Future Research..... | 64 |
| Contingent Videoconferencing for Students..... | 64 |
| Contingent Videoconferencing to Enhance Treatment Integrity..... | 64 |
| Parent Training Across Videoconferencing..... | 65 |
| Remote Trial-Based Functional Analyses..... | 66 |
| Conclusion..... | 67 |
| REFERENCES..... | 68 |
| APPENDIX A: DEMOGRAPHIC INFORMATION..... | 77 |
| APPENDIX B: RECRUITMENT FLYER..... | 78 |
| APPENDIX C: VIDEOCONFERENCING SETUP AND TROUBLESHOOTING..... | 79 |
| APPENDIX D: CONSULTATION ANALYSIS RECORD..... | 80 |
| APPENDIX E: CONSULTATION ANALYSIS CHECKLIST..... | 81 |
| APPENDIX F: DISTANCE COMMUNICATION COMFORT SCALE..... | 82 |
| APPENDIX G: TECHNOLOGY ACCEPTANCE MODEL INSTRUMENT FAST FORM..... | 85 |
| APPENDIX H: PROBLEM IDENTIFICATION INTERVIEW (PII) SCRIPT..... | 86 |
| APPENDIX I: COMMON BEHAVIOR PROBLEMS IN SCHOOLS..... | 87 |
| APPENDIX J: CAR VERBALIZATION CODES..... | 88 |

| | |
|------------------------------------|----|
| APPENDIX K: IRB APPROVAL FORM..... | 90 |
| VITA..... | 92 |

LIST OF TABLES

| | |
|---|----|
| 1. Participant Demographic Information..... | 39 |
| 2. Significant Consultant Verbalizations on the CAC..... | 50 |
| 3. Significant Teacher Verbalizations on the CAC..... | 51 |
| 4. Means and Standard Deviations of Acceptability Ratings Pre-/Post- Interviews | 53 |

ABSTRACT

School-based behavioral consultation is a way of providing psychological services to students through their teachers. This indirect service delivery model has been shown to be effective for improving academic and behavioral concerns. Typically, school-based behavioral consultation is conducted face-to-face (in-vivo) between consultants (psychologists) and consultee's (teachers); however, current technologies have provided an alternative medium to communicate, via videoconferencing. Videoconferencing has been shown to be an effective alternative to face-to-face communication across many different practice domains and applications.

Videoconferencing in schools, particularly for school-based behavioral consultation, may be a viable alternative. The proposed study evaluated the efficacy and acceptability of videoconferencing with teachers as an alternative means of conducting the problem identification interview of school-based behavioral consultation. A school psychology doctoral student interviewed teachers on two occasions (face-to-face and via videoconferencing) to obtain information about student problem behavior. The videoconferencing interviews were conducted across iPads using the videoconferencing software FaceTime. All interviews were video recorded and transcribed into text to code verbalizations, using the Consultation Analysis Record (CAR). Frequencies of verbalizations were totaled on the Consultation Analysis checklist (CAC) into 14 required categories. Data from the CAC was used to evaluate the efficacy of the interviews. Additionally, teachers completed two brief measures, the Fast Form of the Technology Acceptability Model (FF-TAM) and the Distance Communication Comfort Scale (DCCS) pre and post interviews. Data from The FF-TAM and DCCS was used to evaluate the acceptability of videoconferencing. Finally, moderators of the acceptability of videoconferencing were evaluated using a multiple regression analysis.

INTRODUCTION

Consultation has been used in the mental health field across different professionals including: Educators, physicians, nurses, clergy, social workers, law enforcement personnel, and other government workers (Caplan, 1995). Erchul and Sherdian (2008) described the traditional elements associated with consultation as the following: triadic in nature (i.e., a consultant works with a consultee to improve a problem of a client), optimal working relationship between the consultant and consultee, focus on problem related to the client and not personal issues, consultee has ultimate responsibility for the client, consultee has voluntary decision to implement information provided by the consultant, and situational confidentiality of conversations between the consultant and consultee. Throughout the past half-century psychological consultation has evolved, with many different forms of consultation being used. Two of the most prominent consultation models are mental health consultation (Caplan, 1970) and behavioral consultation (Bergan & Kratochwill, 1990).

Mental Health Consultation

Psychological consultation originated in post WWII Israel, where children and their families were enduring an extremely challenging transition from Nazi Germany to their own country, Israel, free of the devastation of the Holocaust. 16,000 immigrant adolescents arrived in Israel, 1,000 of which were referred for mental health services. Gerald Caplan, a psychiatrist, and his team of social workers and psychologists sought to provide those crucial mental health services (Caplan, Caplan, & Erchul, 1994). Caplan and his team attempted to provide direct services to his clients (i.e., his team would work individually with each adolescent); however, this daunting task posed a dilemma. How could Caplan and his team reach the numerous children in need of services with his limited resources? After much consideration he decided to

work with the children's caregivers; in turn, the caregivers would provide services and support to their children.

Caplan's application of an indirect service model made it possible for a consultant (e.g., social worker, psychologist, etc.) to work with a consultee (e.g., parent, caregiver, teacher, etc.), to affect outcomes for a client (e.g., children) (Caplan, Caplan, & Erchul, 1994; Caplan, Caplan, & Erchul, 1995). Gutkin and Connoly (1990) described two fundamental goals of an indirect service delivery model: to enhance services to a client and to improve the consultee's ability to work with similar problems in the future (i.e., they will generalize the skills). Also, it is crucial that consultants, using the indirect service delivery model, are able to work well with caregivers to improve the lives of clients (Gutkin & Connoly, 1990). Caplan's style of consultation is known as the mental health consultation model (Caplan, Caplan, & Erchul, 1994).

The primary goal of mental health consultation is to determine why the consultee is having a problem with the client, which is achieved predominantly through information provided by the consultee (Erchul & Marten, 2002). Once the consultant is able to determine why the consultee is having the problem, the goal shifts from trying to figure out *why* the problem is occurring to *how* the consultant and consultee can solve the problem (Erchul & Martens, 2002). Considering the emphasis placed on the problems of the consultee, the mental health consultation model has been described as a consultee-focused model (Gresham & Kendell, 1987). Erchul and Martens (2002) described the possible reasons for problems within a mental health consultation framework: lack of professional knowledge/skills, lack of self-confidence, and lack of objectivity. Consultee's may lack of professional knowledge or skills because they have not been taught or have forgotten important information that can be used to improve a client's problem. Lack of

self-confidence is due to inexperience or being uncomfortable while dealing with certain problems. Lastly, A problem associated with a lack of objectivity is due to theme interference.

Caplan (1970) described theme interference as a problem that is unresolved in the consultee that manifests itself as the same problem within the client. Since the consultee sees the problem within the client, the consultee views the client differently (i.e., that something is *wrong* with the child) and is unable to effectively provide treatment (McGreedy, 1985; Gutkin & Curtis, 1999). Gresham and Kendell (1987) found that there was no empirical evidence to support Caplan's theme interference hypothesis; however, teachers may prefer the idea of theme interference in mental health consultation because it has a consultee centered focus (Gresham & Kendell, 1987), which takes accountability away from the teacher. Caplan's mental health consultation model was based on a psychodynamic orientation of psychology. Even though psychodynamic theory was popular during the time that Caplan provided services, it relied heavily on inference, lacked evidence-based treatments (e.g., used talk therapy to solve problems), and did not measure treatment integrity (Erchul & Martens, 2002). Research on mental health consultation has not shown evidence to support its effectiveness (Gutkin & Curtis, 1999). That being said, an evidence-based form of consultation was developed to provide services in the triadic model, which is known as behavioral consultation.

The “Behavioral” in Behavioral Consultation

Bergan (1977) first described behavioral consultation (BC) and outlined its procedures. BC is an alternative way to conduct consultation that also uses an indirect and triadic service delivery model (Bergan, 1977; Bergan & Kratochwill, 1990). However, contrary to mental health consultation, BC uses the principles of behavioral theory (Bergan & Kratochwill, 1990) and is client-centered, rather than consultee centered (Bergan & Kratochwill, 1990). BC is

conducted within behavioral theory, specifically with applied behavior analysis (ABA; Cooper, Heron, & Heward, 2006; Baer, Wolf, & Risley, 1968). ABA is directly based on Skinner's (1953) work regarding human behavior, specifically with operant conditioning.

Operant conditioning is defined as the selective effects of consequences (i.e., reinforcement and punishment) on behavior (Cooper, Heron, & Heward, 2006); those changes allow people to learn how to behave in the future. Skinner (1953) explained that the goal of studying human behavior was to determine the functional relationship between the variables in the three-term contingency. The three-term contingency of behavior (Gresham, 2004) is comprised of antecedents-behaviors-consequences (i.e., ABCs). The ABC's of behavior allow for an understanding of behavior based on its occurrence over time. Antecedents are stimuli/conditions that occur before a behavior is emitted (Cooper, Heron, & Heward, 2006). Behaviors (related to humans) are anything that people physically do, "...including how they move and what they say, think, and feel" (Cooper, Heron, & Heward, 2006). Consequences are stimuli/conditions that occur after a behavior is emitted (Cooper, Heron, & Heward, 2006). In ABA, you evaluate the antecedents and consequences of behavior to determine the underlying function that is maintaining behavior.

Skinner (1953) explained the importance of determining the function of behavior versus identifying the form of behavior (i.e., topography). Topography can be similar across behaviors (e.g., speaking out of turn in class); however that behavior could be maintained by different functions (e.g., to get attention from the teacher or to be sent to the principal's office to get out of class). Behavior can be maintained (i.e., function) based on positive reinforcement (e.g., access to preferred items/activity, attention) or negative reinforcement (e.g., escape/avoidance). Positive reinforcement is defined as the presentation of a stimulus, after the occurrence of a

behavior that increases the likelihood of that behavior/class of behavior occurring in the future. An example of operant conditioning is when teacher praises a student who is sitting quietly and raising his/her hand. If the student found the teachers praise reinforcing, he/she may be more likely to engage in raising his/her hand to speak in the future. Negative reinforcement is defined as the removal of a stimulus, after the occurrence of a behavior that increases the likelihood of that behavior/class of behavior occurring in the future. An example of negative reinforcement is a student who calls out in class, during a non-preferred academic task, who gets sent to the principal's office. The student continues to talk out in class because he/she knows that they will be sent to the principal's office for talking out, in turn escaping from work completing.

Identifying the underlying function of behavior can be challenging at times, and it tends to require systematic observation and precise data collection and analysis. Currently there are three different functional behavior assessment strategies for evaluating behavioral function: indirect functional behavior assessment, descriptive functional behavior assessment, and experimental functional analysis (Cooper, Heron, & Heward, 2006). Indirect functional assessment procedures rely on information from people familiar with the person you providing services. This method does not use direct observation strategies and includes measures such as rating scales, checklists, and interviews (Cooper, Heron, & Heward, 2006). Descriptive functional behavior assessment utilizes direct observation strategies of people in their natural environment (i.e., noting is experimentally manipulated) and uses methods such as ABC continuous/narrative recordings, conditional probabilities, and scatterplots (Cooper, Heron, & Heward, 2006). Experimental functional analysis is a procedure that systematically manipulates variables (e.g., attention, demand, play, alone, tangible) that could maintain behavior. The experimental functional analysis has been shown effective for assessing behavioral function for

individuals who exhibit severe problem behavior (Iwata, Dorsey, Slifer, Bauman, & Richman, 1994). Experimental functional analysis is the strongest method for drawing conclusions about behavioral function (Cooper, Heron, & Heward, 2006); however, the other strategies for functional assessment may be easier to conduct in naturally occurring settings, like classrooms (Cooper, Heron, & Heward, 2006).

In addition to the principles of operant learning and determining behavioral function, ABA is focused on adhering to seven basic principles. Baer, Wolf, and Risley (1968) described the seven dimensions of ABA that guide the practice within the field; the dimensions are: applied, behavioral, analytic, technological, conceptually systematic, effective, and generality. ABA should be applied to socially significant behaviors (Wolf, 1978) with participants/clients who are experiencing deficits (e.g., working with a child with autism, who is nonverbal, and implementing functional communication training). ABA should be behavioral, meaning that target behaviors should be operationally defined, measureable, and observable. ABA should be analytic by demonstrating a functional relationship between the manipulated variables and the target behavior. Also, by being analytic, it should be able to show experimental control, which adds to the believability of the behavior change. ABA should be technological in the way that all the procedures used are clearly identified and adequately described (i.e., the results can be replicated). ABA should be conceptually systematic, meaning that relevant principles are used to describe the procedures and interpretations of the efficacy of results yielded from its work. ABA should be effective, in the sense that the behavior change is clinical or socially significant, rather than statistically significant. Finally, ABA should have generality, meaning that a target behavior maintains across time, in different environments, or spreads to other behaviors. These

guiding principles allow for consultants to effectively assess and treat a variety of presenting problems.

BC as a problem-solving model. BC has been described as a problem-solving consultation model (Bergan & Kratochwill, 1990), because it aims to identify and solve problems using thorough assessment of problems and logical reasoning to obtain the best possible outcome for the parties involved in the consultation process. Bergan and Kratochwill (1990) described salient features of a problem-solving consultative process: active collaboration to solve problem between the consultee and consultant, client learns to apply problem solving strategies to their own problems, consultative process disseminates useful psychological knowledge about principles and strategies, uses data based decision making, and defines problems in the client based on interactions with the environment. BC is an empirically driven approach to consultation, meaning that it requires operationally defining procedures, conducting the procedures with high integrity, and collecting data on the implementation of the procedures. Data based decision-making aids in the problem-solving process of consultation by incorporating evidence from data to make treatment decisions for the client, while making limited inferences about the problem. A benefit of the problem-solving approach is that it is dynamic because it allows for changes in the treatment plan/goals, if needed (Bergan & Kratochwill, 1990). Another benefit of the problem-solving approach to BC is that it can be applied to parents helping their children, administrators/teachers helping teachers/students respectively, and students with issues regarding peers/teachers (Bergan & Kratochwill, 1990).

Participant's roles in BC. During BC each participant has a different role along the consultative process (Bergan & Kratochwill, 1990). The consultant is responsible for controlling the relationship between the consultee and him/herself across all stages of the consultative

process (Erchul, 1987) and for providing psychological and educational knowledge (Bergan & Kratochwill, 1990). The consultee is expected to collaborate in the consultative process, implement interventions, and monitor the client's progress (Bergan & Kratochwill, 1990). Finally, the client is responsible for changing his/he behavior (i.e., making changes that align with the goals of the consultative process) by actively participating in the programs implemented by the consultee (Bergan & Kratochwil, 1990).

School-based BC. School-based mental health has become predominant in schools since children who require services tend not to receive treatment (Burns, Costello, Angold, Stangl, Farmer, & Erkanli, 1995). The school system is a consistent environment that allows children to access services, and more importantly, they are legally mandated to attend. This notion has allowed schools to become a primary source of treatment (Rones & Hoagwood, 2000) and these school-based mental health services provide many benefits. First, as mentioned before, children are required by law to attend school, which allows easier access to screening and treatment (Shirk & Jungbluth, 2008). Second, working with children in the school setting can be preventative, since professionals can treat problems proactively, saving future costs and resources (Shinn & Walker, 2010). Finally, the use of progress monitoring can be implemented easier in schools since children spend most of their day in that setting with constant supervision (Shinn & Walker, 2010). Since BC has received the most empirical support and attention regarding consultation effectiveness (Sheridan, Welch, & Orme, 1996) the following discussion of school-based consultation will focus on that method and expand on the specific process of BC relative to working in schools.

School-based BC is a method of implementing mental health services, in which a psychologist works with teachers to solve academic and behavioral concerns for children

(Bergan & Kratochwill, 1990; Wilkinson, 1997). The two main goals of an indirect service delivery model, related to schools, are to enhance psychological services to students and to increase the ability of teachers to deal with similar problems in the future (Gutkin & Connoley, 1990). Since school-based BC follows a problem-solving framework, it functions under four stages: Problem identification, problem analysis, plan implementation, and problem evaluation (Bergan & Kratochwill, 1990). Each of those stages has corresponding interviews/meetings and different responsibilities. The initial step in school-based behavioral consultation is to conduct a problem identification interview (PII, Bergan & Kratochwill, 1990). The purpose of this interview is to establish a relationship with the teacher, collect information from the teacher about the proposed problem and define it, set goals, and develop a plan to monitor progress (Bergan & Kratochwill, 1990; Sheridan & Cowan, 2004). The next step is to conduct a problem analysis interview (PAI; Bergan & Kratochwill, 1990). The purpose of this interview is to conduct a comprehensive assessment of academic and behavioral deficits and to try to determine the function of the behavior.

Following the PAI, the psychologist finalizes a treatment plan and meets with the teacher to discuss it, answer any questions, and demonstrate steps. This meeting is called the treatment plan implementation (TPI; Bergan & Kratochwill, 1990). The last stage of school-based BC is the problem evaluation interview (PEI; Bergan & Kratochwill, 1990). During the PEI, the psychologist presents data regarding the progress of target student(s) to the teacher and discusses the intervention efficacy, potential changes to the interventions, and sustainability of the intervention beyond working with the psychologist (Frank & Kratochwill, 2008). The current study will focus solely on the PII, since it is the initial step in BC and a crucial first step in identifying a problem to improve.

School-based BC has received a considerable amount of attention in the research literature. School-based BC has been shown to be a highly effective form of consultation (Sheridan, Kratochwill, & Bergan, 1996). Research shows that school-based BC is effective at lowering the level of disruptive behavior in children (Wilkinson, 1997), improving academic gains (Jackson, Cleveland, & Merenda, 1975), and for decreasing the number of referrals for psychological testing (Fuchs, Fuchs, & Bahr, 1990). Also, Sheridan, Kratochwill, and Bergan (1996) showed that school-based BC was enhanced even more when parents were involved, which they called Conjoint BC. In summary, BC in schools is a preferred method to implement consultation in schools with administrators, teachers, and parents; it has been shown to improve outcomes for students in academic and behavioral areas.

Advantages of school based BC. Sheridan and Cowen (2004) described advantages of using school based BC: Improved performance, enhanced communication and coordination among mental health professionals and education staff, continuity in programs across contexts, shared ownership and commitment of educational goals, increased understanding and conceptualization of the child and their situation, and pooling of resources across home and school. Improved performance refers to ability of school staff to develop skills for working with children and to become proficient in using those skills (Sheridan and Cowen, 2004). This allows school staff to become more effective as educators and generalize those skills without the assistance of a mental health professional in the future. Enhanced communication and coordination among mental health professionals and school staff provides a comprehensive application of skills sets, maximizing consultation effectiveness, while increasing knowledge across participants (Sheridan and Cowen, 2004). Continuity in programs across contexts is an

advantage because it promotes consistency of services for a client, inherently improving generalization and maintenance of skills (Sheridan & Cowen, 2004).

A shared ownership and commitment of educational goals places responsibility and accountability on the consultant and the consultee to work together to solve client's difficulties (Sheridan & Cowen, 2004). This evenly distributes responsibility and potential stress across a group, which may ease the pressure to improve outcomes for the client. An increased understanding and conceptualization of the child and their situation helps understand the reason why the client is having difficulties and individualizes services for the client based on their need and current situation.

Sheridan and Cowen (2004) described three benefits of pooling of resources across home and school. First, it increases the range and quality of the solutions that can be made to help solve the problem of the client. Second, different resources may be available from different people and in different contexts; which makes it important to include as many people as possible that could contribute to improved outcomes. Last, mental health providers and parents have the ability to monitor the integrity of education programs when they are involved in consultative services. Since treatment integrity is linked to improved student outcomes (Noell et al., 2005), it is an aspect that should be monitored to ensure quality.

Verbal interactions and school-based BC. Consultation in its most fundamental form is based on verbal interactions between the consultant and consultee (Bergan & Kratochwill, 1990; Erchul, 1987; Erchul, 1999). Those interactions influence the ability a consultee can effectively provide services to the client. Considering how important verbal interactions are for BC, it's not surprising that there is considerable amount of research evaluating the importance of verbal interactions and its implications. Bergan and Kratochwill (1990) explain that having

sufficient training learning to elicit information about the proposed problem is pivotal for success treating the client and solving the proposed problem. To ensure the training and efficacy of interviews, Bergan and Kratochwill (1990) developed a message classification system and related coding system.

Bergan and Kratochwill (1990) described verbal interactions under four categories: message source, message content, message process, and message control. Each of those categories has a varying number of subcategories. First, message source refers to *who* made the verbalization (i.e., who is speaking), the consultant or the consultee. Second, message content is related to the *information* being discussed. Content related subcategories include: Background environment, behavior setting, behavior, individual characteristics, observation, plan, and ‘other’. Background environment information is related to variables that may have occurred earlier in life or at home (e.g., early medical procedures or homework routine). Behavior setting information refers to the ABC’s of behavior, which provide insight into variables that set the occasion or maintain behavior. Behavior information is related directly to the overt actions the client engages in and client described thoughts/feelings (e.g., student eloping or a student saying “I feel angry.”). Individual characteristics refer to specific, individual, qualities of a client (e.g., age, height, ethnicity). Observation information pertains to information related to the data collection process used throughout the consultation process (e.g., “record the students behavior during math class.”). The plan subcategory refers to verbalizations about broad and specific strategies, and how to implement them, used in the consultative process (e.g., “do you think that self-monitoring would help the student stay on task?”). The last subcategory in the in the content related area is “other.” Information in the “other” subcategory is related to verbalizations not covered by the

other subcategories. Bergan and Kratochwill (1990) describe this category as “catchall.” An example of the “other” category is, “Did you watch the Saints game last night?”

The third verbal interaction category described by Bergan and Kratochwill (1990) is message process, which refers to the *purpose* or type of action the verbalization intends to accomplish. Process related subcategories include: Specification, evaluation (positive or negative), inference, summarization, and validation (positive and negative). The specification subcategory provides information that clarifies the description of behavior (e.g., “What strategies do you use for classroom management?”), or labels nonverbal behavior (e.g., “Let’s look at this treatment integrity graph.”). The evaluation subcategory refers to the feelings, attitudes, or emotional response of the person making a verbalization (e.g., “When the student bangs his head against the wall I feel scared and upset.”). This category can be evaluated as positive or negative. The inference subcategory provides information related to conclusions that are drawn about behavior and are subjective (e.g., “I think the student calls out during class because of his impulsivity.”) This subcategory uses words like “think,” “feel,” or “infer.” The summarization subcategory refers to information that is repeated from a previous point during the interview, and functions as a review (e.g., “You said that the student hits other students when you take away their favorite toy.”). The last subcategory within the process area is validation. The validation subcategory refers to the agreement or disagreement with factual information. This subcategory can be considered a positive validation or a negative validation and aims for consensus between the consultant and consultee about a certain topic (e.g., “Did you mention that the student only engages in aggression with the paraprofessional?”).

The fourth verbal interaction category is message control, which indicates the *potential impact*, or result of a verbalization. This category has implications for a future behavior or

verbalization to occur, by the consultant or consultee. Message control refers to verbalizations that function as an elicitor or emitter. An elicitor is a verbalization that encourages a response from one of the content subcategories and a specific process subcategory (e.g., “ Could you tell me where the student shows deficits in academic achievement.”). An emitter is a type of verbalization that provides information about content and process; however, it does not encourage a certain response (e.g., “The student does poorly reading comprehension.”) and is typically a declarative statement (Bergan & Kratochwill, 1990).

Consultation Analysis Record. Bergan and Kratochwill (1990) developed a coding system to train and evaluate effective consultants during the interviews of BC and developed a coding instrument to analyze the verbalizations. The coding instrument, the Consultation Analysis Record (CAR; Bergan & Tombari, 1975), is used to systematically record verbalizations across the four message classification categories. The verbalizations are coded from either audio or video taped recording of the interviews (Bergan & Kratochwill, 1990). During the coding process each individual utterance is evaluated, by placing check marks in each row for the corresponding classification categories and subcategories. Typically, the CAR is used to evaluate consultant verbalizations; however, it can be applied to consultee (i.e., teacher) verbalizations as well. An example of the CAR is in appendix D.

Consultation Analysis Checklist. Once the interview verbalizations are coded on the CAR, a second coding instrument can be used to evaluate if the required types of verbalizations during the interviews of BC were used. This measure is called the Consultation Analysis Checklist (CAC; Bergan & Kratochwill, 1990). The CAC is individualized for each interview of behavioral consultation and allows for experimenters to record the frequency of required verbal units. The CAC for PII has 14 required verbalization units; the need for each verbal unit is

briefly described, in parenthesis, for each item in the CAC in appendix E. Though the CAC only describes required verbalizations made by the consultant; reciprocal verbalizations (i.e., responses) made by the consultee can be evaluated using the CAC as well.

Assumptions and the reconceptualization of BC. Noell and Witt (1996) described five fundamental assumptions that are made by Bergan and Kratochwill (1990) about BC: (1) consultation is a superior use of resources, compared to direct intervention services, (2) consultation is most effective when conducted collaboratively, (3) talking to teachers is enough to cause them to change their own behavior, (4) teachers will generalize problem solving skills developed in consultation to new problems with other students, (5) direct contact between the consultant and client is unnecessary.

Witt, Gresham, and Noell (1996) re-conceptualized BC by addressing the fundamental assumptions (Noell & Witt, 1996) in an attempt to make BC more behavioral in nature. First, they proposed that the consultee's verbal description of behavior should be supported by direct observations of a client's behavior. Second, Witt, Gresham, and Noell (1996) discussed how collaboration between the consultant and consultee might not be the best way to identify target behaviors. Instead of being collaborative, the consultant should be directive in their approach; however, the consultant should consider the information the consultee provides about the client's behavior (Witt, Gresham, & Noell, 1996). Third, consultants should be available on the first day a new treatment is implemented to ensure that the consultee understands the procedures and that the intervention is being implemented as planned (i.e, treatment integrity; Witt, Gresham, & Noell, 1996). This is different from typical BC, in which the consultant makes weekly follow up meetings with the consultee. Fourth, consultants should use direct observations and permanent products to measure treatment integrity, instead of anecdotal reports/checklists completed by the

consultee (Witt, Gresham, & Noell, 1996). Fifth, Witt, Gresham, and Noell (1996) suggested that consultants use methods of social influence to promote treatment integrity (e.g., referent and expert power). Last, assessment and treatment procedures should not be separate entities; instead they should be linked to one another and the client's behavior (Witt, Gresham, & Noell, 1996).

The reconceptualization of BC (Witt, Gresham, & Noell, 1996) advances the original ideas of BC Bergan and Kratochwill (1990) in beneficial ways, by identifying that there is a need for critical analysis to improve the way school psychologists provide mental health services to children. It is important to note that the reconceptualization of BC (Witt, Gresham, & Noell, 1996) acknowledged the research support of BC and the authors agree with its use. A more behavioral approach to BC only strengthens its procedures and allows for stronger conclusions about its effectiveness.

Response to Intervention

Response to Intervention (RTI) is a problem-solving process for assessing and treating academic and behavioral concerns for students (Sugai, Horner, & Gresham, 2002). RTI is based on a 3-tiered model of service delivery that places a heavy emphasis on screening and prevention as well as providing increasingly individualized support for students. RTI is a decision-making framework for providing services rather than a specific *type* of intervention. RTI places an emphasis on keeping students out of special education (Yell, 2012). The focus of tier 1 is to provide universal screening and interventions for *all* students. Typically, about 80% of students respond to tier 1 interventions and do not require any additional services (Hawken, Vincent, & Schumann, 2008). Tier 2 aims to identify students who are at risk for developing academic/behavioral problems, or who have not responded to tier 1. Approximately 15% of

students are identified as at risk and require additional services to improve their academics or behavior (Hawken, Vincent, & Schumann, 2008). The goal of tier 3 is to provide intensive individualized interventions for students who have not responded to the interventions implemented in the two previous tiers and who display severe problem behavior or academic deficits. About 5% of students require the intensive services of tier 3 (Hawken, Vincent, & Schumann, 2008). Once a child moves from a lower tier to a higher tier, the support services from the previous tier continue to be implemented. A benefit of using an RTI model is that the intensity of the intervention is matched with the severity of the area of concern and magnitude of the problem (Gresham, 2005). The major components of RTI include: Screening, continuous progress monitoring, treatment integrity, and evidence based interventions.

Screening occurs at the initial level of the RTI framework (i.e., tier 1) a universal screening process takes place to identify students who may be at risk for developing/have developed behavioral problems. Initial screening acts as a proactive way to identify students with potential problems and prevent them from experiencing any further problems by providing them with access to intervention (Chafouleas, Riley-Tillman, & Sugai, 2007). Continuous progress monitoring is a procedure in which data is frequently collected for target behaviors (Chafouleas, Riley-Tillman, & Sugai, 2007). The continuous nature of progress monitoring means that it is ongoing; this allows for comparisons to be made in regard to a person's behavior as an intervention is implemented. This aspect is important for an RTI framework because without ongoing progress monitoring teachers/psychologists would not be able to evaluate if a change in intervention is needed. There is a greater opportunity to make data based decisions about the efficacy of an intervention the more frequent progress monitoring is collected (Chafouleas, Riley-Tillman, & Sugai, 2007). However, in schools there are barriers to frequent

use of progress monitoring (e.g., time, money, personal). Treatment integrity (TI) is described as the degree to which intervention procedures are implemented as planned (Yeaton & Sehcrest, 1981; Gresham, 1991). In regard to TI one must consider the accuracy and consistency that an intervention was implemented (Gresham, 2005). “Treatment integrity is an essential ingredient in a RTI model because effective treatments can be rendered ineffective simply because they were either implemented poorly or not implemented at all” (Gresham, 2005). TI is necessary, especially because it has bearing on the eligibility decisions for students being considered for special education services. Evidence based interventions (EBIs) are considered efficacious treatments that have been validated through research. It is important to consider the following criteria presented by Chambless, et al. (1998) when determining if a treatment is a well-established EBI: Characteristics of the client sample are clearly specified, experiments must be conducted with treatment manuals, the effects must have been demonstrated by at least two different investigators or investigating teams. In addition to those criteria, Chambless, et al. (1998) differentiate the guideless based on research design. Group design studies must be replicated at least twice and be statistically significant in superiority to a control group/other treatment, or equivalent to EBI. Single-case design studies must demonstrate an efficacious effect with greater than nine cases, have sound experimental design, and compared the intervention to another treatment.

Advantages of RTI. RTI has benefits including the following: Early identification of learning and behavior problems (Barnett, et al. 2006; Batsche et al., 2005), learning and behavior problems based on level of risk rather than level of deficit (Hawken, Vincent, & Schumann, 2008), reduces identification biases (Hawken, Vincent, & Schumann, 2008; Torgesson, 2009), and focuses on positive student outcomes (Walker, et al., 1996). Gresham (2008) explained that

early identification avoids the wait-to-fail issues associated with the discrepancy approach for identification and closes the gap between identification and intervention (i.e., students get identified and receive services quicker). Conceptualizing problems from a risk perspective is beneficial because interventions are matched to problem severity and the risk model implements evidence-based treatments (Gresham, 1991). The deficits model does not provide a link to intervention, besides aptitude by treatment interactions, which are not empirically supported (Gresham, 2008). Teachers tend to be biased on their referrals on non-academic factors (e.g., minority status, gender, socio-economic status, [Podell & Soodak, 1993]) and the RTI approach emphasizes the focus on directly observable factors (e.g., classroom behavior, academic progress, etc.), which encourages objectivity in the identification process. Since the RTI approach focuses on positive student outcomes, it takes the blame away from the child and promotes changing aspects of the environment to improve outcomes (i.e., the teacher changes their behavior which effects the students behavior). Considering all of the major components advantages of RTI, it is apparent that the framework is focused on sound research based practice, prevention, data-based decision making, and above all helping students to improve by providing them with interventions while they are in general education.

Rural School Psychology

The first question that may come to mind when discussing rural schools is how to define 'rural.' The U.S. Census Bureau (2010) defined rural areas as places of open country and settlements with a population less than 2,500. In 2010, the census identified over 59 million people living in rural areas. That number relates to 19.3% of the overall U.S. population. Surprisingly, rural areas exist in all 50 states (Beebe-Frankenberger, 2008). Like urban and suburban areas, rural communities have unique issues that they must deal with on a regular basis.

The issues that affect rural communities include poverty, disproportionate numbers of children with disabilities, and substance abuse (Beebe-Frankenberger, 2008). Students from rural areas are less likely to attend and finish college compared students from urban and suburban areas (Frontier Education Center, 2003). Rural school settings provide benefits, which include small class size (i.e., more opportunities for direct instruction and teacher attention), more collaboration between teachers, and a cohesive sense of community (Beebe-Frankenberger, 2008). Also, rural schools have components of RTI already in place (Beebe-Frankenberger, 2008).

In a 2003-2004 survey by the National Center for Education Statistics, a mean of 31% of all public schools were located in rural areas. Considering how many schools are located in rural areas, student access to mental health services must be considered. “The number of mental health providers in rural areas is critically low; that is, in excess of 85% of the 1,669 federally designated mental health professional shortage areas are rural,” (Beebe-Frankenberger, 2008) and geographically isolated (Graeff-Martins, Flament, Fayyad, Tyano, Jensen, & Rohde, 2007). Not only is there a shortage of mental health specialists, Beebe-Frankenberger (2008) discussed that schools psychologists in rural areas have unique challenges including the amount of travel time between schools, in potentially tumultuous weather conditions (e.g., extreme snow storms and icy roads). Considering the challenges for school psychologists in the rural areas, any means to ameliorate those difficulties could improve the efficiency of the services they provide.

Children with an autism spectrum disorder are an example of a population of students the need mental health professionals and specialists, in rural areas. The rise in the prevalence of autism (Centers for Disease Control and Prevention, 2012), 1 in 88 children, has increased the need for specialists (i.e., behavior analysts, speech pathologists, psychologists) at rural schools, because they have limited access to those service providers (World Health Organization, 2007).

However, mental health providers and specialists may not be able to travel the distances required because logistic or fiscal restraints (Boisvert, Lang, Andrianopoulos, & Boscardin, 2010). Since there are few mental health care providers in rural area and related services are in need, it is crucially important to find ways for mental health providers and specialists to visit schools and provide services (Boisvert, Lang, Andrianopoulos, & Boscardin, 2010).

Boisvert, Lang, Andrianopoulos, and Boscardin (2010) conducted a systematic review of eight peer-reviewed journal articles that focused on providing consultative services (i.e., assessment, training, and supervision), through videoconferencing, to parents and teachers of children with an autism spectrum disorder (ASD). The services provided included: Classroom-based brief functional analysis, functional behavioral assessment, functional communication training, teacher performance feedback, preference assessment, treatment integrity checks, and assistance in creating an individualized education plan. The services conducted in the articles included in the review occurred in schools, homes, and rural community-based clinics (Boisvert, Lang, Andrianopoulos, & Boscardin, 2010). All but one of the studies in the review found videoconferencing to be an effective strategy to provide the previously mentioned services to children with ASD and improve their outcomes (Boisvert, Lang, Andrianopoulos, & Boscardin, 2010). Considering this example of the application of videoconferencing to students with ASD, it may be used as a desirable alternative to deliver mental health services to children with a range of disabilities and academic difficulties in rural areas.

Individuals with Disabilities Education Improvement Act

The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) is the reauthorization of the Individuals with Disabilities Education Act (IDEA, 1975) and is a federal law that mandates all students with disabilities between the ages of 3-21 receive a free and

appropriate public education (FAPE). IDEIA provides students, who qualify for services based on eligibility in at least one of the 13 qualifying IDEIA disabilities, with additional accommodations to better serve their needs and give them the opportunity to succeed as compared to their peers who are typically developing. The right of a FAPE is privilege that all children have the opportunity to receive; denial of a FAPE to any student is reprehensible and schools are legally responsible to provide the FAPE (Yell, 2012). There are additional key provisions that are required by IDEIA besides providing a FAPE: Students must be educated in the least restricted environment (i.e., with peers who are typically developing to the maximal level), students must have access to procedural due process (i.e., rules and procedures for conducting all activities related to the education of students), and non-discriminatory assessment (i.e., tests must be appropriate and valid for the population they are used to evaluate). These provisions ensure that students are protected and have the opportunity to participate with their peers.

Additionally, IDEIA explains the process in which students with disabilities are able to receive supplemental services (i.e., consent, assessment, evaluation, placement, and individualized education plan). Before a school can provide services to students, and after receiving parental consent, it must facilitate an assessment to determine if a student meets a disability criterion and requires additional services. A new aspect included during the reauthorization of IDEIA (2004), which was different from the IDEA (1975), was the ability of schools to use a Response to Intervention (RTI) approach to identify children with a specific learning disability (SLD). Including the RTI approach as an acceptable alternative to assessment placed an emphasis on student performance and outcomes (Maag & Katsiyannis, 2008).

Currently, IDEIA allows schools to use the RTI approach exclusively for identification of SLD,

however, Local Education Agencies (LEAs) have the right to obtain a waiver that allows the use of RTI as a procedure for determining eligibility for the other IDEIA qualifying disabilities (Yell, 2012).

The reauthorization of IDEIA (2004) to include the use of RTI to make eligibility decisions for students SLD can be credited to the work of Velluntino (1996) on reading remediation in children. Velluntino (1996) found that most students with children with reading difficulties could be remediated using a three-tiered model of reading support. This placed a large emphasis on pre-referral screening and interventions could be provided through consultation with school psychologists. The increase of RTI in schools intuitively will increase the demand for qualified consultants to provide mental health services, including services for academic and behavioral concerns. Considering the legal responsibility to provide every child with a FAPE and the potential increases in school-based consultation, one may questions how schools across the country will accomplish that task with the amount of resources they have.

School Resources and BC

Gutkin and Curtis (1999) explained that school-based BC maximizes the use of limited school resources through the indirect service delivery model. A direct service delivery model (i.e., therapist-client) is not practical for schools because effective behavioral therapies require a great deal of time to collect and monitor data, which may be difficult for the psychologists that serve students across many schools (Gutkin & Curtis, 1999). School resources, including personnel, funding, and access to services are an area of concern for many schools. The goal in schools is to maximize the use of school resources to improve student outcomes.

Traditionally, school-based BC is conducted face-to-face, however, challenges exist that could interfere with the ease of these interviews being conducted in that manner. Some of these

issues include teachers' busy schedules (i.e., time restraints), number of schools served by a school psychologist, distance between schools, number of students requiring services, and lost hours working due to travel (Simpson, 2009). If a school psychologist did not have to worry about issues such as traveling, caseload, and teacher schedules, they may have more time to provide students with beneficial services (e.g., social skills groups, behavioral interventions, academic interventions, psychological assessments). A potentially acceptable alternative to the face-to-face may be videoconferencing.

Videoconferencing

Videoconferencing connects two (or more) people through video cameras in real time (i.e., live, not previously recorded), across the Internet (Antonacci, Bloch, Saeed, Yildirim, & Talley, 2008; Dudding, 2009). Videoconferencing can be used across any geographical distance, whether short (e.g., in different rooms) or long (e.g., in other states or countries). Research utilizing videoconferencing has labeled the procedure in many different ways. Some examples include telemedicine, telecommunication, telehealth, telepractice, teleconferencing, teleconsultation, and telepsychology (Grady et al., 2009). The current study will use the term videoconferencing. This term was chosen because of its clarity in describing the process being carried out.

There are different ways transmission methods to conduct videoconferencing, which are based on the speed of the Internet connection (Bischoff, 2004). The speed of the Internet connection refers to bandwidth, the rate at which data can be transferred (Dudding, 2009). Videoconferencing can be used through satellite, integrated services digital network (ISDN) lines, and broadband connection (Bischoff, 2004; Barretto, Wacker, Harding, Lee, & Berg, 2006; Dudding, 2009). Satellite connections are secure and reliable but are not practical for individuals because

of the cost to operate (Bischoff, 2004). ISDNs are connected through phone lines, which allow for high quality and secure direct connections (Bischoff, 2004; Barretto, Wacker, Harding, Lee, & Berg, 2006). Broadband connections have become increasingly available because of user demand and government expansion programs (Dudding, 2009). This connection is beneficial because it is available to many individuals, schools, and businesses; however, this type of Internet connection requires that bandwidth is shared across network users, subsequently reducing available bandwidth and lowering the quality of the videoconference (Dudding, 2009).

Current videoconferencing technology uses devices with built in cameras (e.g., laptops, tablet computers, and smartphones) as well as external cameras that attach onto a desktop computer monitor. These methods are conducted between two (or more) people and are relatively inexpensive once the appropriate hardware, software, and Internet connection are obtained. Some disadvantages with these methods are the quality of the videoconference and amount of the person seen on screen (i.e., typically on a headshot) (Dudding, 2009). Another type of videoconferencing is group conferencing (Dudding, 2009). This type of conferencing can accommodate large groups across many sites, but requires high equipment costs and need large amounts of bandwidth (Dudding, 2009)

Videoconferencing is available for any person who uses an electronic device capable of accessing the Internet, with a video camera (i.e., webcam), and with the required software program (e.g., CISCO® network, Skype®, FaceTime). Since videoconferencing is available for most people to communicate with others, it is not surprising that videoconferencing has been applied to the health care field to provide consultation and specific services to clients and patients.

Effectiveness of videoconferencing. Videoconferencing to provide a variety of services (i.e., medical, mental health, specialty) has been evaluated in empirical studies dating back to the 1990's. The availability of this technology allowed for access to services beyond telephone and email; however, similar, but not identical to face-to-face. Over the years the technology has improved and more people have access to the services, which make it a viable option for providing services. Videoconferencing has been used across many different facets of psychological research and practice: Assessment interviews (Hyler, Gangure, Batchelder, 2005), treatment studies (Hassija & Gray, 2011; Gibson, Pennington, Stenhoff, & Hopper, 2010), teacher trainings (Machalicek et al., 2009), brief functional analysis of behavior (Barretto, Wacker, Harding, Lee, & Berg, 2006; Frieder, Peterson, Woodward, Crane, & Garner, 2009) and clinical supervision (Heafner, Petty, Hartshorne, 2011).

Psychological assessment includes testing measures (e.g., Wechsler Intelligence Scales for Children-IV, Woodcock-Johnson III Tests of Achievement) behavior rating scales (e.g., Child Behavior Checklist, Connors Rating Scale Revised), interviews (e.g., Vineland Adaptive Behavior Scales) and observations. Many studies have evaluated the application of videoconferencing during psychological assessment. Ruskin et al. (1998) assessed depression through face-to-face and videoconferencing and found that both were effective methods. Yoshino et al. (2001) evaluated direct behavior observations through videoconferencing, which was challenging as compared to face-to-face observations. Baer et al. (1995) assessed depression and obsessive-compulsive disorder, using self-report measures and interviews, using videoconferencing. That study found high reliability between self-report and interviews for assessing depression and obsessive-compulsive disorder (Baer et al., 1995). Also, studies have attempted to conduct neuropsychological testing over videoconferencing (Troster, Paolo, Glatt,

Hubble, & Koller, 1995; Biggins, 1998) and found it as effective as face-to-face; however, those studies had a psychometrician onsite, which practically defeats the purpose of using videoconferencing. The previously described studies have used videoconferencing to conduct psychological assessment; however, those studies did not randomly select participants, which places in questions the validity of the results for psychological assessment (Simpson, 2009).

Simpson (2009) wrote a review article on psychotherapy treatments using videoconferencing. The treatment studies reviewed were based on cognitive behavioral therapy (CBT) and targeted disorders including Anxiety and Depression (Manchanda and McLaren (1998), Obsessive Compulsive Disorder (OCD; Himle et al., 2006) and combat-related posttraumatic stress disorder (PTSD; Deitsch, Frueh, & Santos, 2000), and bulimia nervosa (Bakke, Mitchell, Wonderlich, & Erikson, 2001; Simpson et al., 2006). The evidence from those studies (including case studies, single case studies, and randomized control trails) found videoconferencing to be a viable option and could be considered to provide treatments for the previously described disorders and should be researched further for treating other psychopathology.

In addition to being shown as an effective treatment, videoconferencing has also been effectively used to train teachers to conduct behavior assessment and provide behavioral services for their students. Barretto, Wacker, Harding, Lee, and Berg (2006), Machalicek et al. (2009), and Machalicek et al. (In Press) evaluated the training and implementation of functional analysis in schools. Those studies had qualified clinicians/behavior analysis's consult with teachers to conduct the analyses and collect data on problem behaviors. Those studies found that videoconferencing to implement services was an effective alternative and showed promising use in the future. Machalicek et al. (2009) showed that behavior analysts could effectively train

teachers to conduct a paired-choice preference assessment through videoconferencing. Gibson et al. (2010) effectively used videoconferencing to consult with teachers to conduct a functional behavioral assessment, develop and train teachers to implement a behavior intervention plan including functional communication training, and provide performance feedback. These behavioral assessment and treatment strategies are commonly used in schools (besides functional analysis), and the application of videoconferencing is an advantage for schools that may not have access to specialists that typically provide those services. Videoconferencing has not only been used for consulting with teachers and school staff, but it has also been used to effectively supervise graduate students.

Simpson (2009) explained that clinical supervision (through consultation and by supervising graduate students) has become a more common and cost-effective way of providing psychological services. Gammon, Sorlie, Bergvik, and Hoifodt (1998) evaluated psychotherapy supervision using videoconferencing for psychiatric interns. This study found that the interns and supervisors reported videoconferencing as an effective mode of supervision delivery; however, their ratings of satisfaction were variable (Gammon, Sorlie, Bergvik, & Hoifodt, 1998). Heafner, Petty, and Hartshorne (2011) evaluated teacher supervision through remote videoconferencing. In this study, university professors observed education graduate students (who were full time teachers) through videoconferencing and face-to-face. They found that both methods were comparable but not equivalent, but could be used to provide supervision and measure teacher effectiveness (Heafner, Petty, & Hartshorne, 2011).

Videoconferencing has been effectively used in other disciplines including nursing (Lindberg, Axelsson, & Öhring, 2009), speech pathology (Grogan-Johnson, Alvares, Rowan, & Creaghead, 2010), business (Chapman & Webster, 2001), social work (Berger, Stein, & Mullin,

2009), psychiatry (Fortney et al., 2007), and education (Machalicek et al., 2009). In Summary, videoconferencing has been shown as an effective means to consult, train, interview, and provide medical/psychological assessment/treatment.

Technology and videoconferencing in schools. Schools have access to the innovative technologies through federal funds, grants, or their local education agencies. Many schools use these technologies to bolster involvement and interest in education using items such as electronic whiteboards, electronic learning tables, and tablet computers (Baloian & Zurita, 2009; Higgins, Beauchamp, & Miller, 2007). Specifically, schools use tablet computers (e.g., iPad) to enhance learning for students in general/special education (Kagohara, Sigafos, Achmadi, O'Reilly, & Lancioni, 2012). In particular, the iPad has access to many software programs (i.e., applications) that target learning across subjects (e.g., reading, math, science) and incorporate an interactive, engaging interface for children and adults. Academic applications for the iPad have been created to address the needs of children in general education and children with disabilities in special education. Many applications are specifically created for the iPad, and since its ubiquitous, innovative technologies are available to most schools, they should be utilized to their full potential. Another benefit of the iPad, which would maximize its utility, is the ability for videoconferencing through the application called FaceTime. This application is designed for videoconferencing through Apple products such as the iPad. Other videoconferencing applications may be used on the iPad (e.g., Skype); however, FaceTime is suggested in the proposed study to maximize the utility of iPads in schools and because it is a HIPPA compliant form of videoconferencing. "The positive impact technology has had on education in rural areas cannot be overstated" (Beebe-Frankenberger, 2008). This supports the need for current technologies (i.e., videoconferencing) to be used in schools, especially those in rural areas.

Acceptability of videoconferencing. The acceptability of videoconferencing (i.e., satisfaction) is based on the idea that consumers (i.e., clients) find the delivery of mental health services adequate through videoconferencing. Simpson (2009) suggested that some extent of satisfaction with the model of service delivery is necessary to provide effective services. There are a limited number of studies evaluating the acceptability of videoconferencing as a means to deliver treatment (Williams, May, & Esmail, 2001). A limitation to those studies was that the participants never actually experienced a comparison between face-to-face and videoconferencing, so their choice was influenced by their experience with the format that therapy was conducted (Simpson, 2009). The differences in satisfaction and preference for treatment methods (i.e., face-to-face and videoconferencing) are idiosyncratic to each client; just because one is rated higher than another it does not necessarily indicate what is best for the client (Simpson, 2009).

Many clients prefer videoconferencing to face-to-face treatment (Simpson, 2009). Simpson (2009) discussed that clients may prefer videoconferencing during treatment because the clients feel more control and less intimidated during that method. Allen, Roman, Cox, and Cardwell (1996) explained that client might feel more control because they can engage in the session from an environment that is familiar (e.g. using their own computer/videoconferencing device, comfortable chair/workspace). Contrary to the previous study, Omodei & McLennan (1998) explained that if clients were unfamiliar with the videoconferencing technology, they might feel less control and become anxious. Satisfaction research on videoconferencing, during psychological treatment, indicates that many people find it an acceptable method for providing treatment (Bose, McLaren, Riley, & Mohammedali, 2001; Simpson, Doze, Urness, Hailey, & Jacobs, 2001). Other studies on satisfaction have found that there was no difference in

satisfaction between face-to-face and videoconferencing (Kopel, Nunn, & Dossetor, 2001; Ruskin et al., 2004). Additional findings on satisfaction in videoconferencing research include Manning, Goetz, and Street (2000) who found that females might be more likely to prefer videoconferencing to face-to-face treatment; Rohland, Saleh, Rohrer, and Romitti (2000) found that younger participants might be more willing to participate in videoconferencing versus older participants.

Evidence-based practice for videoconferencing. Psychologists are concerned with providing evidence-based practice to their clients. The focus of evidence-based practice is to provide care medical/mental health care to individuals, based on evidence from research that supports the applications of certain assessment/treatment strategies (Hamilton, 2006). Since videoconferencing has been used for mental health services, standards for evidence-based practice must be considered. Grady et al. (2009), members of the American Telemedicine Association, established guideless for researchers and practitioners to conduct mental health services over videoconferencing. Rooms used for videoconferencing should be private, comfortable (e.g., seating and lighting) and distraction free (Grady et al., 2009). Interruptions in the videoconference (i.e., lost calls) should be avoided at all costs (Grady et al., 2009). Maximal quality sound and video should be used for the most effective videoconference. The critical way to improve connectivity is to increase bandwidth (i.e., rate which data is transferred). Also, increasing resolution (i.e., level of image detail) and increasing display (i.e., size of the image) influence the interaction during videoconferencing (Grady et al., 2009). Another aspect that must be considered is video clarity, which can be improved by adjusting the brightness (i.e., perceived brightness) and contrast (i.e., differences in color) of the dynamic image (Grady et al., 2009). Audio during videoconferencing should be flexible for the individual using it, which can

be achieved by having access to controls for microphone and speaker volume (Grady et al., 2009). Clothing worn by the service provider should be carefully planned when conducting videoconferencing. Certain designs (e.g., stripes and patterns) require more bandwidth and could be detract from the focus of patient (Grady et al., 2009). Grady et al. (2009) suggest wearing pale solid color clothing for the best result. Also, providers using videoconferencing should be familiar with the technology before using it to supply mental health services.

Legal and ethical considerations during videoconferencing. Technology progresses exponentially, which poses a challenge for the legal system to create laws that match the rate the new technologies are applied. In the psychological community, the advancement of technology allows for innovative ways to provide mental health services. Despite the promising aspects of using technology in psychology for assessment, consultation, and treatment, there is not much information to help guide practice from a legal and ethical standpoint. Baker and Bufka (2011) discussed the ethical and legal implications of using technology, in particular videoconferencing.

Many states do not have specific laws for the use of videoconferencing during psychological practice (Baker & Bufka, 2011); however certain organizations have created guidelines for best practice (e.g., Grady et al., 2009). Baker and Bufka (2011) advise that mental health providers should consider the relevant ethical and legal issues associated with videoconferencing during mental health services, even though insurance companies, policy makers, and legislators have not created overarching guideless. Some of the issues associated with videoconferencing for mental health services include informed consent, privacy and confidentiality, insurance coverage, and reimbursement for mental health services.

Informed consent is the first step to providing mental health services to clients. The purpose of informed consent is to ensure that that the client understands the services that are

going to be provided and the implications of receiving those services. Many states have created statutes/regulations to give guideless on the type of information that must be disclosed when using videoconferencing for providing mental health services (Baker & Bufka, 2011). These guideless tend to vary across states but keep the best interest of the client in mind (Baker & Bufka, 2011). Some states have specific informed consent requirements (e.g., Arizona, California, Kentucky, Oklahoma, Texas, Vermont, and Wisconsin) that must be completed before using videoconferencing for mental health services (Baker & Bufka, 2011). Baker and Bufka (2011) explain that state licensing boards have provided policy statements emphasizing that psychologists should give consideration to the potential risk (ethical and technical) unique to videoconferencing. Those risks include: informed consent, patient confidentiality, competency, security, technology failure, and storage of electronic data (Baker & Bufka, 2011). Besides considering the risks and providing informed consent, privacy and confidentiality is another issue for mental health providers that use videoconferencing to implement services.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) is an important law for mental health providers because it sets forth federal guideless for security and confidentiality of patient records (e.g., data, reports, medical charts, etc.). HIPAA explains provides strict rights for patients, especially when copies of the records are being transferred to other service providers. Specifically, HIPAA states that service providers must use caution and care to ensure that patient's records and identity are protected from harm and misuse. Using videoconferencing to provide mental health services poses a unique threat, because of the transfer of data across the Internet. Kumekawa (2001) suggested specific strategies that practitioners could use to promote security and confidentiality including, passwords, digital signatures, firewalls, data encryption, and data backup. Baker and Bufka (2011) explain that the

important notions of HIPAA to keep in mind are, “*what* potential risks to confidential patient information might using telehealth technology pose and *how* those risks can be appropriately minimized” (Baker & Bufka, 2011). Privacy must be considered when using videoconferencing, especially for providing mental health services. Grady et al. (2009) emphasized that precautions must be taken to ensure that information (auditory and visual) is not accessed by anyone who is not directly involved with the services being provided. Grady et al. (2009) suggested privacy features including audio/video muting. Despite the ability for mental health care providers to confidentially practice effective services using videoconferencing, there have not been many policies for coverage mental health services (Baker & Bufka, 2011).

Many private insurance companies are not required to cover mental health services conducted over videoconferencing; however, federal Medicare and Medicaid do reimburse for videoconferencing services (with restrictions). A restriction to these services is that the client cannot receive services in their own homes (i.e., they must go to a community center or clinic), which practically defeats the purpose of providing mental health services through videoconferencing (Baker & Bufka, 2011). Also, regarding Medicaid, each individual state can decide if they would like to reimburse for services conducted over videoconferencing (Baker & Bufka, 2011). Private insurance companies are begging to endorse the use of videoconferencing and many states have drafted legislation to include those services (Baker & Bufka, 2011)

As practicing mental health care providers, keeping high regard for patient’s rights and confidentiality should be on the forefront of the mind. By practicing within the ethical guidelines of specific organizations (e.g., American Psychological Association, Behavior Analyst Certification Board, National Association of School Psychologists) and including the previously mentioned safeguards, any service provider should be practicing within acceptable

ethical and legal limits. Since providing mental health services through videoconferencing is a growing trend in research and practice, the legal and ethical restrictions are likely to change. It will be important to stay current with any changes in insurance reimbursement policies and guidelines/laws that are created as its use increases.

Technical considerations during videoconferencing. There are many considerations a practitioner must consider when using videoconferencing to provide mental health services, many which have been previously described. An important consideration that will impact the effectiveness of mental health services is rapport and therapeutic alliance (Yuen, Goetter, Herbert, & Forman, 2012). Grady et al. (2009) explains that rapport “ allows for the patient to be more forthcoming with past and current history, cognitive experience, emotional experience, and symptoms” (Grady et al., (2009). If the therapist is able to build rapport than the patient will be more likely to engage in in treatment and work with the therapist to solve their problems (Grady et al., 2009). Simpson (2001) and Ghosh, McLaren, and Watson (1997) found that patients were able to establish rapport with a therapist during videoconferencing. Also, research has shown that clients provide similar information using videoconferencing as they would if they were face-to-face (Jermone & Zaylor, 2000; Urness, Wass, Gordon, Tian, & Bulger, 2006). Simpson (2001) discussed that clients may have difficulty feeling comfortable and building rapport during videoconferencing; however, therapists could promote rapport building using an empathic tone of voice. Additionally, Grady et al. (2009) explained that therapists could use nonverbal cues to build rapport and show empathy (e.g., head nodding).

Another consideration during videoconferencing regards the social subtle social nuances we experience during conversation. These social nuances also affect rapport building and therapeutic alliance. During videoconferencing it is impossible to make actual eye contact. This

limitation occurs because the therapist and client look at their monitor (which the other person is displayed) rather than the camera (which would simulate true eye contact). Tam, Cafazzo, Seto, Salenieks, and Rossos (2007) studied the previously described phenomenon, which they called gaze angle. Gaze angle is the angle between the camera and point of visual fixation on the screen (Tam, Cafazzo, Seto, Salenieks, & Rossos, 2007). Gaze angles of approximately 5 to 7 degrees (between the camera and point of visual fixation) are small enough that most people will not notice (Tam, Cafazzo, Seto, Salenieks, & Rossos, 2007), so small eye movements away from the camera are preferred. Grady et al. (2009) explained that the gaze angle phenomenon poses a challenge when conducting mental status exams. Last, it is crucial that practitioners conducting mental health services through videoconferencing have cultural competence regarding the populations they provide services (Shore, Savin, Novins, & Mason, 2006).

Rapport building to ensure a therapeutic alliance can be achieved through videoconferencing by incorporating the previously described considerations during mental health services provided through videoconferencing. This type of service delivery is not identical to face-to-face; however, it has been shown to be a similarly effective alternative. Practitioners using this service delivery method should be explicit about the limitations of videoconferencing with their clients, so that there is nothing unexpected during the services (Grady, et al., 2009)

Cost-effectiveness of videoconferencing. Videoconferencing has been shown to be a promising alternative for many facets of practice across psychology. However, it is important to consider the cost of the services for providers and clients. Simpson (2009) explained that the equipment cost, set up, and training could be significant, depending on the type of videoconferencing method used. Despite the possible limitations previously mentioned, Ruskin et al. (2004) found that it was cost-effective to provide services through videoconferencing, as

long as services were provided beyond a distance of 22 miles. Bose et al. (2001) and Jones et al. (2001) found that providing mental health services through videoconferencing have potential cost savings for providers and clients. Also, using videoconferencing to provide a variety of mental health services has the potential to save client and providers thousands of dollars per year (Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009). Smith et al. (2007) conducted a study to evaluate the cost savings for mental health providers and patients in rural Queensland. The study found that mental health services provided through videoconferencing saved resulted in a net savings of \$420,000 patient travel to the mental health provider and a net savings of \$70,000 for service providers to travel to patients homes and for outreach services (Smith et al., 2007). Considering these savings, mental health providers who consult in rural areas or need to travel great distances should consider the option of videoconferencing in their practice. A similar savings to those in clinics or mental health centers may be applicable for school-based mental health providers.

Using videoconferencing for School-based BC would be beneficial for school districts because it would save time and money associated with travel. For example, in rural communities a school psychologist may be responsible for providing services to students in schools that are separated by hundreds of miles. A school psychologist may only be able to make face-to-face visits to each school in his jurisdiction once a week; however, by implementing videoconferencing, he/she could access many teachers across many schools all within one day. Eliminating drive time would save the district thousands of dollars in travel reimbursement and also would allow school psychologists time to provide students with beneficial services (e.g., social skills groups, behavioral interventions, academic interventions, psychological

assessments). Also, videoconferencing for specialist services may provide a cost-effective alternative for consultation during low incidence/unique disabilities/behavior difficulties.

Purpose and Hypotheses

Videoconferencing could be extremely useful in connecting teachers and students with needed services. Videoconferencing could have a significant impact on the way school psychologists consult with teachers. The purpose of the proposed study was to evaluate the efficacy and acceptability of videoconferencing as an alternative to the face-to-face PII during School-based behavioral consultation. If videoconferencing during the PII is equivalent/ greater in its efficacy and compared to the face-to-face PII, and it is rated acceptable, then the application of videoconferencing should be explored during more aspects of school-based BC. It was hypothesized that:

1. There will not be a significant difference between the acceptability of videoconferencing pre- /post- interviews.
2. Videoconferencing will be rated as acceptable pre- and post-interviews.
3. Videoconferencing will be a more efficacious method of conducting PII's as compared to face-to-face interviews.

METHOD

Participants and Setting

Participants of the current study were general and special education teachers from public elementary schools across Southeastern Louisiana. Participant descriptive statistics are shown in Table 1. Participants were provided an incentive to participate in the study by being entered in a lottery to win a \$100 Visa® gift card. Two gift cards were available as prizes for participation, and participants were only eligible to enter the gift card lottery after completing both required PII's. All sessions occurred in the elementary schools, in each teacher's classroom. During the videoconferencing interviews the experimenter was also at the school; however, a separate room from the teacher was used.

Table 1. Participant Demographic Information

| Category | Frequency | Category | Frequency |
|------------------|-----------|---------------------------|-----------|
| Sex | | Worked with Experimenter? | |
| Male | 3 | Yes | 25 |
| Female | 57 | No | |
| Race | | Setting | |
| Caucasian | 56 | Rural | 13 |
| African American | 4 | Suburban | 35 |
| Hispanic/Latino | 0 | Urban | 9 |
| Asian American | 0 | Grade | |
| Age | | Pre-Kindergarten | 5 |
| 20-25 | 9 | Kindergarten | 9 |
| 26-30 | 19 | 1 st | 14 |
| 31-35 | 8 | 2 nd | 10 |
| 36-40 | 6 | 3 rd | 8 |
| 41-45 | 8 | 4 th | 3 |
| 46-50 | 5 | 5 th | 4 |
| 50+ | 5 | Spec. Ed./Gifted | 7 |
| Degree | | Used Videoconferencing? | |
| Bachelor's | 43 | Yes | 47 |
| Master's | 17 | No | 13 |

Table 1. Participant Descriptive Statistics (Continued)

| Category | Frequency | Category | Frequency |
|----------------|-----------|--------------------------|-----------|
| Years Teaching | | Used Touchscreen Device? | |
| 1-5 | 29 | Yes | 60 |
| 6-10 | 10 | No | 0 |
| 11-15 | 10 | | |
| 16-20 | 5 | | |
| 21-25 | 4 | | |
| 26-30 | 0 | | |
| 30+ | 2 | | |

Measures

Consultation Analysis Record. The text data collected from verbalizations made during the interviews was analyzed using the Consultation Analysis Record (CAR; Bergan & Kratochwill, 1990); this data was used to evaluate the efficacy of videoconferencing. The CAR is a direct measure of verbal behavior that provides a rater the opportunity to collect frequencies of specific types of verbalizations emitted during each of the interviews in BC. A description of the CAR and the process for coding verbalizations was previously discussed in the introduction, and a copy of the CAR can be found in appendix D.

Consultation Analysis Checklist. The Consultation Analysis Checklist (CAC) is an extension of the CAR that provides a list of the required verbalizations in each interview during BC. The CAC for the PII has 14 required verbalizations, each serving a different purpose (e.g., the behavior-specification-elicitor would be a questions about the strength of the behavior). Two of the items on the CAR for the PII are redundant, which means that the frequencies of specific verbalizations were analyzed across 13 categories. The frequencies recorded on the CAR were tallied and automatically entered in to a spreadsheet with the 13 verbalizations categories. The frequencies on the CAC were compared across interview conditions (i.e., VC and F-to-F) to determine if one form of interviewing yielded a more efficacious outcome (i.e., you are able to

gather more information from one interview). A description of the CAC was previously discussed in the introduction, and a copy of the CAC can be found in appendix E.

Fast Form of the Technology Acceptance Model. The Fast Form of the Technology Acceptance Model (FF-TAM, Chin, Johnson, & Schwarz, 2008) measures attitudes towards perceived efficiency/effectiveness, usefulness, and ease in learning to use technology (Davis, 1989; Chin, Johnson, & Schwarz, 2008). The FF-TAM is an improvement from the original TAM (Davis, 1989) because it more efficient (i.e., more concise and quicker to complete), allows for customization of the scale for individual use, and uses a semantic differential scale (i.e., polar opposite labels) instead of a likert scale (i.e., extent of agreement) (Chin, Johnson, & Schwarz, 2008). The FF-TAM is a scale that uses one statement about a specific technology to evaluate acceptability across 12 items rated on a semantic differential. The semantic differential scales from -3 (negative pole), e.g., inefficient, to a +3 (positive pole), e.g., efficient. This scaling format allows for a 7-point degree of ratings.

The FF-TAM has high internal consistency levels, with Chronbach's alpha ranging from .93 to .95. Chin, Johnson, and Schwarz (2008) conducted structural equation modeling on the FF-TAM and found, through he measurement model, that the factors all loaded above .707 on the their relevant constructs. Chin, Johnson, and Schwarz (2008) found, through structural modeling, that the FF-TAM and original TAM were not statistically different in the construct "ease of use," but were statistically different in the construct "usefulness." Chin, Johnson, and Schwarz (2008) explained that even though there was a significant difference of .13, it only accounted for 0.01 of the variance in the model. Overall, the FF-TAM had strong psychometric qualities with the original TAM and was shown to be a more efficient measure (Chin, Johnson, & Schwarz, 2008).

One of the ways that the FF-TAM is efficient is its ability to customize the scale for individual technologies. The FF-TAM is customizable by inserting three different statements into a sentence with specific words left blank, which researchers can complete (e.g., “To aid me in my (accomplishment of tasks), overall, I feel (system) as a (technology type) is:”). First, “accomplishment of tasks” refers to the certain activity the experimenter wants to study (i.e., dependent variable). This blank was filled in with “discussion of academic/behavioral concerns,” (i.e., school-based BC). Second, “system” refers to the actual technology that an experimenter is studying (e.g., online surveys, cellular telephones, Microsoft Word®). This blank was filled in with “videoconferencing.” Third, “technology type” refers to the larger category that the specific technology being studied falls into. This blank was filled in with “method for a consultation interview.” The complete prompt used in the proposed study is, “To aid me in the discussion of student academic/behavior concerns, overall, I feel that videoconferencing as a method for a consultation interview is.” An average score is collected from this measure to evaluate the acceptability of the technology being evaluated. An average score of +3 is highly acceptable and an average score of -3 is highly unacceptable. A copy of the FF-TAM is in appendix G.

Distance Communication Comfort Scale. The Distance Communication Comfort Scale (DCCS, Schneider, 2001) is a 36-item questionnaire that asks respondents to answer statements about their comfort with communicating across different mediums (e.g., face-to-face, telephone, videoconferencing). Each item is rated on a six point likert rating scale (1 = strongly disagree and 6 = strongly agree). The DCCS has high internal consistency levels, with Cronbach’s alpha ranging from .81 to .88 (Schneider, 2001). Also, Schneider (2001) showed that the DCCS has adequate discriminatory validity with an anchor measure, the NEO Five

Factor Inventory (NEO-FFI; Costa & McCrae, 1992), which measures personality aspects including: Extraversion, agreeableness, openness to experience, neuroticism, and conscientiousness. Correlations between the DCCS and the NEO-FFI scales ranged from .01 to .26 (Schneider, 2001).

The DCCS was used to evaluate participant's comfort (i.e., acceptability) pertaining to different communication methods. The methods included in the scale are face-to-face, telephone, and videophone (i.e., videoconferencing); however, the current study only evaluated the videoconferencing items. An average score of the videoconferencing items was collected from this measure to evaluate the acceptability of videoconferencing. An average score of 7 is highly acceptable and an average score of 0 is highly unacceptable. The DCCS was administered pre-/post- treatment (i.e., before and after the two PIIs were conducted). A copy of the DCCS is in appendix F.

Research Design and Power Analysis

The study employed a 2 x 2 mixed factorial design. The independent variable was the interview condition (face-to-face and videoconferencing) and the dependent variables were frequencies or ratings. The between subjects condition was the frequencies of verbalizations made during videoconferencing and face-to-face interviews. These frequencies were tallied using the CAC. The within subjects condition was the acceptability ratings on the FF-TAM and DCCS. These measures were collected before the first interview (i.e., pre) and after the second interview (i.e., post) for each participant.

Meehl (1991) suggested that all studies conduct power analysis before beginning a study to determine the appropriate number of participants. A power analysis was conducted with GPower to determine the number of participants needed to find a significant effect. GPower is a

free software program that is available on for download on the Internet (Buchner, Erdfelder, Faul, 1997). The power analysis determined that a sample size of 46 (power = 0.80, effect size = 0.30) would be needed to find an effect with 95% confidence; however, 60 participants will be used in the proposed study as a safeguard against attrition.

Procedure

Initially, the experimenter contacted elementary school principals and described the study goals and the responsibilities of the teachers who participate. Once the elementary school principals gave general consent to conduct the study in their school, the experimenter passed out recruitment flyers (appendix B.) to the general and special education teachers. After identifying interested participants for the study (using responses from the flyer), the experimenter e-mailed the participants reiterating the goals/responsibilities associated with the study and set up times to conduct the PII's.

Concurrently, undergraduate research assistants and introductory level graduate students were trained in the interview procedures and conducted "dry-runs" of the procedure with the experimenter until they reached 100% procedural reliability across three independent training sessions. The use of a research assistant was critical; this allowed for minimal interaction between the experimenter and teacher prior to conducting the interview. After being trained, the undergraduate and graduate level research assistants were responsible for greeting the teachers at the beginning of the interviews. Before initiating the first interview the research assistant conducted informed consent with the teacher and answered any questions. Once the participant provided consent, the research assistant provided the teachers with procedures and/or paperwork related to the appropriate interview modality. During the initial meeting, the teacher completed the FF-TAM and DCCS and demographic questionnaire before interviewing with the

experimenter. Regardless of starting condition, all participants were given a list of common student problem behaviors in the classroom (appendix H.). After reading this list the research assistant informed the teacher that they would be discussing the problem behavior of a previous or current student in their class. If the participant was conducting the interview face-to-face, no other information was provided; however if the participant was conducting the interview through videoconferencing, an additional sheet of videoconferencing procedures and troubleshooting was provided (appendix C). The research assistant did not provide any information about how to use the iPad or videoconferencing software; rather they prompted the participant to refer back to the informational sheet. After the second interview (regardless of condition), the research assistant provided the participant with the FF-TAM and DCCS to complete.

The interviewing starting condition (i.e., videoconferencing or face-to-face) was randomly counterbalanced across participants. Counterbalancing controlled for effects that could occur due to the order the interviews were conducted. After reading all required lists and procedures, the participant met with the experimenter, an advanced graduate student in school psychology, who conducted the PII. The experimenter was held constant across all interviews for each participant and across participants. The PIIs were conducted using a script suggested by Bergan and Kratochwell (1990), which is located in appendix H. All PII's were recorded using a digital video camera on a tripod (e.g., FlipCam). The research assistant positioned the digital video camera on the periphery the participant on both conditions. The decision to have the digital video camera in the same room as the participant was to control for any reactivity of being filmed.

Transcription

After conducting the PII's, the recorded videos were transcribed by research assistants. The research assistants watched the videos and simultaneously transcribed the verbalizations verbatim into an Excel spreadsheet; if needed the research assistant paused and rewound the video to listen to the verbalization again. Each row of the spreadsheet contained a different verbalization; verbalizations were defined as a word (e.g., "Yes," "Okay," "Nope," "mhmm") or group of words (e.g., "What are some of the behaviors he engages in?" "He hits other students," "You can start collecting data tomorrow."). During the transcription process a new verbalization was transcribed at every natural pause in the conversation and when a different speaker made a verbalization. The experimenter and a school psychology graduate student independently transcribed a random sample of 25% of all videos (i.e., 30 videos) to ensure the transcription reliability. Inter observer agreement (IOA) was calculated using a point-by-point agreement ratio (Cooper, Heron, & Heward, 2006). IOA for video transcription was 99.38%, and ranged from 96.80%-100%).

Verbalization Coding

Next, The transcribed verbalization text was coded using a unique coding system derived from the categories of the CAR specifically for the current study. The codes for the verbalization are shown in appendix J. Each verbalization was assigned a code and those codes were automatically summed using the summation formula in Excel. The experimenter and school psychology graduate student independently coded a random sample of 25% of all videos (i.e., 30 videos) to ensure the coding reliability. IOA was calculated using a point-by-point agreement ratio (Cooper, Heron, & Heward, 2006); IOA for coding was 96.11%, and ranged from 93.70%-98.40%.

Treatment Integrity

Treatment integrity is the extent to which the procedures in a treatment plan are carried out as intended (Gresham, 1989; Peterson, Homer, & Wonderlich, 1982). To ensure that the procedures of the study were carried out, measures of treatment integrity were collected on different aspects of the study. Before beginning any of the procedures of the study with actual participants, the experimenter conducted a “dry-run” of the procedures with the graduate and undergraduate research assistants involved in the study. The procedures were considered mastered when the integrity of the experimenter and research assistants was 100% across three interviews.

Once the experimenters and research assistants were reliable with the procedures, the study will began and treatment integrity measures were collected for all procedures. The treatment integrity of research assistants was monitored using a checklist of the required steps. The experimenter used a similar checklist during the interviews to ensure procedural integrity (i.e., the consultation steps and PII are conducted identical across participants). A manualized interview was used for each participant as a way to guarantee consistency between participants and control for any variability in the interviews due to the consultant verbalizations. The video recorded of the interview was scored for treatment integrity at the conclusion of each interview. The treatment integrity for research assistants was $M = 100\%$ for both videoconferencing and face-to-face interviews. The treatment integrity for the experimenter was $M = 99.67\%$ for videoconferencing (range 85%-100%) and $M = 99.83\%$ for face-to-face (range 95%-100%).

Multivariate Statistics

After manually transcribing the audio, from the recorded videos, into text a school psychology graduate student and the experimenter coded all the verbalizations with the CAR.

The specific verbalization codes were summed into a frequency count across the 14 categories of the CAC (Only 13 categories due to redundancy in items on the CAC). Those frequencies were treated as separate dependent variables to evaluate the efficacy of videoconferencing. A series of paired sample t-tests (Tabachnick & Fidell, 2007) were conducted using the SPSS software program. The independent variable was the interviewing condition (i.e., videoconferencing or face-to-face) and the dependent variables were each of the 13 items on the CAC. A Holm-Bonferroni correction was used to control for the increase error associated with conducting multiple paired sample t-tests (Abdi, 2010).

The acceptability of videoconferencing was analyzed using repeated measures Multiple Analysis of Variance (MANOVA; Tabachnick & Fidell, 2007). The independent variable of the MANOVA's was the PII starting condition (face-to-face or videoconferencing). One MANOVA used the pre-/post-interviews average ratings from the FF-TAM and the other MANOVA used pre-/post-interviews average ratings from the DCCS as the dependent variables of acceptability. Acceptability data was analyzed using the SPSS software program. The pre-/post-interview analysis evaluated the participants overall acceptability of videoconferencing before interviewing, as well as after experiencing both face-to-face-and videoconferencing PIIs. The MANOVA's also evaluated any interaction effects due to the starting condition (i.e., if experiencing videoconferencing first accounted for the variance in the acceptability).

The moderators of the acceptability of videoconferencing were also evaluated. A multiple linear regression (Tabachnick & Fidell, 2007) was conducted to evaluate if any of the demographic variables significantly moderated the acceptability ratings on the FF-TAM and DCCS. The moderators of the acceptability data were analyzed using the SPSS software program. The potential moderators were the demographic variables (e.g., age, sex, years

experience, etc.) and the dependent variables were the average ratings on the acceptability measures.

RESULTS

Efficacy

Data from the paired sample t-tests showed that 4 of the 13 consultant (i.e., experimenter) verbalizations were significantly different in their frequency across videoconferencing and face-to-face interviews. Table 2 shows the significant consultant verbalizations. These significant findings all showed a higher mean frequency of verbalizations made in the face-to-face interview as compared to the videoconferencing interview. In contrast, the mean frequency for 9 of the 13 consultant verbalizations was not significantly different across interview methods.

Table 2. Significant Consultant Verbalizations on the CAC

| Consultant Verbalization | <i>t</i> | Sig | Holm-Bon. | Mean VC | Mean F-to-F |
|--|----------|--------|-----------|---------|-------------|
| Behavior Setting-Specification-Elicitor | 4.19 | 0.000* | 0.003 | 5.78 | 7.22 |
| Observation-Specification-Emitter | 3.76 | 0.000* | 0.004 | 3.48 | 5.10 |
| Individual Characteristic-Specification-Elicitor | 3.65 | 0.001* | 0.005 | 1.30 | 2.20 |
| Other-Specification-Emitter | 3.11 | 0.003* | 0.005 | 1.23 | 2.58 |

The significant consultant verbalizations included questions that clarified the antecedents and consequences of target behaviors (e.g., “Is there anything that triggers the student to throw his chair?” and, “What do you do after the student speaks without raising his hand?”). They also included questions that clarified individual characteristics of a student (e.g., “How old is the student?” and, “Does the student have a disability?”). Additionally, there were significant verbalizations that clarified responses including statements about data collection methods (“You will collect data at the end of each class.” and, “We collect data before beginning the

intervention so we know if our intervention work.”) and statements that were unrelated information to the conversation about the student (e.g., “I did see the Saint’s game last night.”)

Also, data from the paired sample t-tests showed that 6 of the 13 consultee (i.e., teacher) verbalizations were significantly different in their frequency across videoconferencing and face-to-face interviews. Table 3. shows the significant consultee verbalizations. These significant findings all showed a higher mean frequency of verbalizations made in the face-to-face interview as compared to the videoconferencing interview. In contrast, the mean frequency for 7 of the 13 consultant verbalizations was not significantly different across interview methods.

Table 3. Significant Teacher Verbalizations on the CAC

| Consultant Verbalization | <i>t</i> | Sig | Holm-Bon. | Mean VC | Mean F-to-F |
|---|----------|--------|-----------|---------|-------------|
| Behavior Setting-Specification-Emitter | 7.91 | 0.000* | 0.003 | 13.48 | 26.18 |
| Behavior-Specification-Emitter | 5.57 | 0.000* | 0.004 | 6.35 | 10.23 |
| Other-Specification-Emitter | 3.77 | 0.000* | 0.005 | 1.87 | 8.07 |
| Behavior Setting-Summarization-Emitter | 3.62 | 0.001* | 0.005 | 0.48 | 1.05 |
| Behavior Setting-Pos. Validation-Emitter | 3.61 | 0.001* | 0.006 | 0.72 | 1.40 |
| Individual Characteristic-Specification-Emitter | 3.57 | 0.001* | 0.006 | 4.38 | 7.03 |

The significant consultee verbalizations included statements that clarified, summarized and validated. The first clarifying statement responded about the antecedents and consequences of target behaviors (e.g., “The student throws his chair when he is told to math problems,” and, “I tell the student to move his conduct clip.”). The second clarifying statement responded about the topography, intensity, and frequency of the target behavior (e.g., “The student hits her peers,” and, “The student breaks pencils 12 times per day.”). The third clarifying statements about

unrelated information to the conversation about the student (e.g., “My kids were sick last night, I’m not feeling well,” and, “I’m going to New Orleans for Mardi Gras next week!”). The fourth clarifying statement provided responses about the individual characteristics about the student (e.g., “The student is 6 years old,” “The student was retained in 1st grade,” and “The student has autism.”). In addition to the clarifying (i.e., specification) statements, there were significant verbalizations made by the consultee that positively validated the consultants’ summarization of the antecedents and consequences of the target behaviors (e.g., “Right, the student does throw the chair when I tell him to do his work.”). Finally, there were significant verbalizations made by the consultee that summarized the antecedents and consequences of the target behavior. These statements were repeated information about the antecedents and consequences of the target behavior that were previously discussed in the interview.

Acceptability

Mean acceptability ratings on the DCCS and FF-TAM are shown in Table 4. This table separates acceptability ratings by starting condition and measure. The mean ratings before experiencing any interviews (i.e., pre) were considered moderately acceptable across starting conditions and measures. However, after experiencing both interviewing conditions, and completing the measures (i.e., post), the mean ratings for acceptability were significantly higher ($p < 0.001$). Mean acceptability ratings for both measures, despite the starting condition, were shown to be highly acceptable. Participants rated videoconferencing moderately acceptable before experiencing videoconferencing and highly acceptable after experiencing it.

Additionally, the interaction of the starting condition on acceptability was evaluated. There was not a significant interaction effect, which means that the starting condition does not account for the variance found in the significant effect of acceptability. Considering that finding,

the groups (based on starting condition) were combined. Within subject contrasts on the MANOVA showed both measures had significantly higher acceptability ratings after experiencing both interview conditions (DCCS: $F(1, 58) = 26.77, p < 0.001$; FF-TAM: $F(1, 58) = 16.32, p < 0.001$).

Table 4. Means and Standard Deviations of Acceptability Ratings Pre-/Post- Interviews

| Measure | Starting Condition | | | |
|---------|--------------------|-----------|--------|-----------|
| | VC | | F-to-F | |
| | Mean | Std. Dev. | Mean | Std. Dev. |
| FF-TAM | | | | |
| Pre | 1.56 | 0.98 | 1.80 | 1.27 |
| Post | 2.39* | 0.75 | 2.29* | 1.21 |
| DCCS | | | | |
| Pre | 4.67 | 1.11 | 5.33 | 1.08 |
| Post | 5.54* | 0.93 | 5.73* | 1.01 |

Moderators of the Acceptability

The multiple linear regression did not yield any significant moderators of the acceptability of videoconferencing on either the FF-TAM or the DCCS. Since none of the demographic variables moderated the acceptability of videoconferencing on either measure, data shows that those variables (e.g., age, sex, years teaching, etc.) did not influence the acceptability of videoconferencing during the PII. This data shows that for the participants in this study, videoconferencing was acceptable for everyone equally. The implications of this finding, for school psychologists, are discussed further in the discussion section.

Interview Duration

The duration of the interviews was calculated to determine if there was a significant difference in the in the duration of the interviews. A t-test showed that there was no significant

difference between the duration of the interviews. The average duration for face-to face interviews was 11 minutes and 30 seconds and the average duration for videoconferencing interviews was 11 minutes and 24 seconds. On average, the interviews only differed from one another by 6 seconds.

DISCUSSION

Since the treatment was conducted at a high level of integrity (i.e., the experimenter asked all necessary questions across interviews) and the interviews were on average almost the same duration, it is fair to conclude that both methods of conducting a PII take almost the same time to compete. So, the interviews were functionally equivalent, which means that whichever method used during consultation will effectively serve the same purpose in the same amount of time. That being said it becomes relevant to delve into the specific areas evaluated in the study, acceptability and efficacy, to further understand which method to use and when to use them.

Acceptability

Teachers rated videoconferencing as an acceptable alternative to F-to-F interviews for the PII pre- and post-interviews on both the DCCS and FF-TAM. Additionally, teachers rated videoconferencing as an acceptable alternative to F-to-F interviews for the PII significantly higher after experiencing the videoconferencing interview. This shows that teachers were willing to discuss student problem behavior across videoconferencing, and they were even more willing to discuss student problem behavior after they participated in an interview across videoconferencing. Since these teachers found videoconferencing as acceptable as they did, practicing school psychologists should consider using it as an alternative to F-to-F interviews, when feasible, during consultation with teachers. In other words the technology must be available and the bandwidth must be adequate.

Additionally, none of the demographic information significantly moderated the acceptability of videoconferencing, which means those demographic variables (age, sex, race, age, years teaching, experience with the experimenter, experience with touchscreen device, experience with videoconferencing, setting, grade taught, and degree) did not influence teacher's

acceptability of videoconferencing. This is particularly important, especially since previous research showed that that younger individuals might have higher acceptability of videoconferencing, compared to older individuals (Rohland, Saleh, Rohrer, & Romitti, 2000). This information should be conveyed to teachers if they seem apprehensive about conducting a PII across videoconferencing.

Efficacy

The efficacy of videoconferencing as an alternative to face-to-face interviewing with teachers during the PII was inconclusive; however, the data showed promise for the use of videoconferencing as an alternative to the face-to-face PII. Data showed that the consultant made more verbalizations on 4 of the 13 verbalization categories on the CAC (i.e., 31%). The majority of the verbalizations categories were not significant, which means that for those verbalization categories the information gathered was statistically the same. This finding was the same for the consultee verbalization categories; however, teachers made more verbalizations on 6 of the 13 verbalization categories (i.e., 46%). Although more than half of the teacher verbalization categories were not significantly different in the frequency of verbalizations, a larger proportion (as compared to the consultant verbalizations) was significantly different. The verbalization categories that were significant for the consultant and consultee may have an effect on the efficacy of the interview; however, there were not any outcome variables measured to evaluate this component.

Moreover, the verbalization categories that were significant focused on aspects of the interview that have potentially great implications on the ability of the consultant to understand the problem behavior, and the conditions in which the behavior occurs (i.e., the antecedents and consequences). These details help understand function of the problem and allow the consultant

to conceptualize an appropriate intervention and data collection method for the problem behavior. Though there was a difference in the frequency of behavior and behavior setting specification verbalizations, favoring face-to-face interviews, the consultant was able to collect the required information in the PII. The question remains if the additional verbalizations made during the face-to-face interviews add to the understanding of the problem behavior, especially above and beyond the information obtained during videoconferencing. If the those verbalizations add to the understanding of the problem behavior, then one could the argument that face-to-face interviews are more efficacious than videoconferencing during the PII. However, if consultants are able to understand the problem behavior using only the information in the videoconferencing interview, and in turn effectively treat student problem behavior, then one could argue that videoconferencing is an efficacious method of conducting the PII.

Another potential implication of the differences in the verbalization categories pertains to the “other” category. Although this category is not pertinent to the student or the problem behavior, those verbalizations may impact the ability to build rapport and develop a strong therapeutic alliance. Ideally, these verbalizations would be kept to a minimum, as to keep on-task during the interview; however, many teachers and the consultant in this study found themselves making these comments. Since both the consultant and consultee made a significant number of these verbalizations during face-to-face, it shows that they are more inclined to make these verbalizations when in person. Hence, from a practical standpoint the videoconferencing interviews presented as a more efficacious method to conduct the PII since they reduced these “other” verbalizations while maintaining teacher acceptability. The data seems to indicate that videoconferencing promotes more a formalized meeting that encourages a sense of structure and professionalism that can be easily deviated from in person. A possible explanations of this

phenomenon is being perceived as video recorded (i.e., seeing themselves on the screen) encouraged more self-monitoring of their own behavior; promoting the teachers and consultant to stay on topic. Another explanation could be that although teachers reported that videoconferencing was acceptable, the absence of subtle social nuance (e.g., body proximity, hand shakes, eye contact, non-verbal behavior) could have impacted the rapport and therapeutic alliance. Although the “other” verbalization category can be considered extraneous, it allows the opportunity to socialize and empathize with teachers/the consultant.

As a school psychology consultant, it is important to demonstrate social competency and empathy with the teacher. Some of the empathy is achieved by actively listening to the teacher describing the student and the target behavior; however, other instances require empathic listening (e.g., “My son was sick yesterday”) that would be socially awkward and rapport degrading if the consultant didn't respond, or if they responded empathically. Since this type of verbalizations has implications on therapeutic alliance, treatment integrity, and intervention/consultant acceptability, future research should address how much “other” verbalizations are needed to build therapeutic alliance and improve outcomes with students, especially during videoconferencing.

The limited nature of the interaction between the consultant and consultee (i.e., only conducting PII's and not the entire consultative process) makes it challenging overall to understand the impact of the “other” verbalizations. Additionally, the other significant categories showed a difference favoring the face-to-face interviews; however the implications of these comments seem to carry a lighter weight and possible less of an impact than the previously described significant verbalizations.

Efficiency of Videoconferencing

Efficiency can be defined as the ability to accomplish a task with a minimum expenditure of time and effort. Efficiency also speaks to the effectiveness of task and the competency of the individual implementing the task. The purpose of this study was to evaluate the efficacy (i.e., a preliminary form of effectiveness) and acceptability of videoconferencing as an alternative to the face-to-face PII. The application of videoconferencing during the PII was found to be acceptable by teachers--especially after they experienced videoconferencing. Also, the acceptability was not moderated by any of the demographic variables of the teachers.

Besides the acceptability of videoconferencing, the efficacy of videoconferencing during the PII was shown to be efficacious for collecting the required information about the student and the student's problem behavior. There was some inconclusiveness if the videoconferencing was truly equivalent to face-to-face PII's; however, there was enough evidence to support using videoconferencing.

Since all the required questions were asked (based on the consultant standardized interview form) and that the interviews were about the same length, both could be equally efficient. During the videoconferencing interviews consultants and teachers made less verbalizations on 4 and 6 categories respectively. If the consultant and consultee made fewer verbalizations during videoconferencing, while conveying questions and information about the student, then one could conceptualize that the videoconferencing condition was more efficient. Another consideration about efficiency is the reduced number of "other" or off topic verbalizations made by the consultant and consultee during videoconferencing. As discussed previously, this may have impaired the ability for the consultant and consultee to build rapport, or it could be accounted to the professional and focused nature of videoconferencing. Regardless

of the reason, fewer “other” verbalizations were made, making the interview during videoconferencing more efficient (i.e., less time was spent talking about “other” topics and more time spent on the student and their problem behavior).

Other considerations for efficiency include less time spent traveling, flexibility in scheduling, more time for consultants to work on other tasks. These and the previously described factors support that videoconferencing was more *efficient* than face-to-face PII’s. Based on the definition described in the beginning of this section, since videoconferencing was considered efficient, there is reason to conclude that it is also more efficacious. However, this is likely the case, this conclusion should be interpreted with caution and future research must be conducted to confirm its efficacy and efficacy through systematic replications and extensions.

Implications for School Psychologists

Research shows that if a mental health service provider is traveling beyond 22 miles to provide their service, and have the ability to use videoconferencing, then they you should take advantage of that technology. Also, based on this study, teachers will find using videoconferencing for PII acceptable, especially after conducting an interview with a school psychology consultant about a student who engages in problem behavior. Not only will teachers find videoconferencing acceptable but also it will save the district money, save on fees for consultative travel reimbursement, and maximizes technology that is ubiquitous across schools (i.e., tablets, webcams, smartphones, etc.).

The practicing school psychologist should feel confident that videoconferencing would be well received by teachers. Based on the fact there were no significant moderators of acceptability, all teachers should find videoconferencing a viable alternative. It doesn't matter if teachers are in rural or urban areas, are young or old, or have experience with videoconferencing;

all of them are likely to embrace videoconferencing for conducting interviews about their students. Practicing school psychologists should consider videoconferencing if they have time restraints, have great distances to travel, or if they have many teachers to see in one day across many schools.

Merely offering the alternative will promote the use of videoconferencing; however, it is important to follow all state and provincial guidelines for the use of videoconferencing. The American Psychological Association recently published guidelines for using videoconferencing during psychological practice, which they described as telepsychology (APA, 2013). The National Association of School Psychologists (NASP) has not formally announced guidelines for the practice of videoconferencing; however, practicing school psychologists should be vigilant to learn the guideless when they are created.

Finally, videoconferencing with teachers scrapes the surface of the budding opportunities for practitioners to use technology in their practice. As technology advances and psychology continues to incorporate cutting edge technology, the jobs of school psychologists will become more efficient, organized, and allow for opportunities to engage in the preferred responsibilities (e.g., direct services for students and consultation with teachers and other service providers).

Limitations

The current study has limitations that need to be addressed through future research focusing on the continued application of videoconferencing in school based behavioral consultation.

Student Outcomes and Efficacy. The current study did not have an outcome measure related to student problem behavior, particularly because teachers had the option to talk about

previous or current students. Since this study lacked student behavior outcome measurement, it is premature to conclude that videoconferencing is truly efficacious as an alternative to face-to-face interviews. Future research should evaluate study behavior outcomes in the following way.

The interviews included in the consultative process outlines by Bergan and Kratochwil (1990) should be conducted solely by videoconferencing. In other words, the PII, PAI, treatment-planning meeting, and PEI should be carried out using FaceTime or VSee, depending on the available devices. Any observations of the student in the classroom could be conducted in vivo, or using videoconferencing (though this would be another possible research topic in and of itself). While the consultative process is carried out through videoconferencing, student behavior data should be collected to (e.g., direct behavior ratings, school-home notes, good behavior game progress monitoring). In theory, if an evidence-based intervention is used within the consultative process, and teacher have high levels of treatment integrity; future research could evaluate the efficacy of videoconferencing on student outcomes.

Consultative Services. There were no consultative services provided to teachers (if they described a current student in their class) beyond a handout about basic behavior management strategies (i.e., antecedent-based strategies) to improve student behavior. This limitation presents an issue of social validity, since teachers were not provided direct consultative services to help improve behavior of a student in their class. However, the social validity of using videoconferencing has great potential. The previously mentioned outcome study would address the concern of social validity by improving student outcomes and helping teachers. Also, future studies can directly assess social validity by asking teachers questions about their perceived social validity of videoconferencing (i.e., “Do you find videoconferencing acceptable as an alternative to F-to-F in the consultative process?” and “Would you videoconference again?”)

Including All of the Interviews of BC. The current study only focused on the PII, which restricts the ability to generalize the results across the other interviews. Future research should include all interviews in BC (i.e., PII, PAI, treatment-planning meeting, PEI) to ensure that the results found in this study generalize across all interviews. As previously mentioned, a study that uses videoconferencing across the entire consultative process will allow for data to be collected across interviews.

Wi-Fi Network and Bandwidth. The videoconferencing sessions were conducted on same Wi-Fi network as teachers (i.e., in the same school using the same internet connection); however, the experimenter was in a separate room. Ideally, a school psychology consultant and the teacher would conduct the videoconferencing interviews in separate Internet and Wi-Fi connections, and be located in different settings. This limitation speaks to the internal validity of the study. To truly know the limitations that could arise regarding the quality of a videoconference interview, future studies to ensure that separate Internet connections are used. Also, bandwidth information should be collected in future studies to aid in replication and to provide information about required quality needed to have a successful interview across videoconferencing. This study failed to collect bandwidth data, though the limited connection problems that occurred did not impact the acceptability of videoconferencing, which suggests that the interviews across videoconferencing had adequate levels of bandwidth.

Heterogeneity of the Sample. The current study had a Heterogeneous sample (i.e., not all participants were rural teachers), which is a beneficial when considering the external validity (i.e., generalization) of the results. However, the current study was conceptualized to aid rural teachers who have trouble accessing services of behavior specialists and school psychologists. Future studies should include participants from only rural areas to insure the internal validity of

the results and confirm the application of videoconferencing for rural teachers and school psychologists engaged in BC.

Future Research

Contingent Videoconferencing for Students. Parents tend to be called on the phone or are called to school when students receive an office discipline referral. At times it can be difficult for parents to come up to schools (i.e., they are attending work). An alternative for parents going to their students' school could be that student's videoconference with their parents as a contingent consequence for classroom problem behavior or office discipline referrals. This would be highly effective if the student wanted to avoid videoconferencing with their parents (i.e., negative reinforcement).

Conversely, this idea could be approached from a positive behavioral perspective. If students engage in appropriate behavior throughout the school day they could have the opportunity to videoconference with their parents during certain points of the day. Specifically, this idea would fit well with the Behavior Education Program/Check-in/Check-out (Hawken, 2006; Hawken, MacLeod, & Rawlings, 2007). In this tier-2 behavior system, students have a mentor that they check in with at the beginning of the school day and check out with at the end of the school day. The mentor is responsible for reviewing replacement behaviors providing reinforcement at the end of the school day. Throughout the day students are rated across target behaviors by their teachers. Videoconferencing with parents would compliment this program by incorporating parent involvement, and it could function as an opportunity for the student to gain reinforcement during the school day.

Contingent Videoconferencing to Enhance Treatment Integrity. Treatment integrity is a crucial component for intervention success. Overall, teachers tend to struggle with treatment

integrity; however, research has evaluated this phenomenon and found evidence-based strategies for improving their integrity. The current literature shows that the best way to improve treatment integrity of teachers is to meet with them weekly, provide them with constructive performance feedback, and show graphs of the student's behavior and their treatment integrity (Noell et al., 1997; Noell et al., 2005). To enhance these procedures, videoconferencing could be conducted with teachers, especially based on the benefits described in the current study.

Additionally, contingent videoconferencing with teachers could be used to improve treatment integrity when teachers' level of treatment integrity falls below a certain threshold. They may have to videoconference with the school psychologists until the level of treatment integrity improves. This follows the idea that teachers find the contingent videoconferencing negatively reinforcing (i.e., they try to improve to avoid have the videoconference). Another way to approach this idea is again through a positive behavioral lens. School psychologists could provide videoconferencing when levels are maintained at a high level; otherwise, teachers would continue to meet face-to-face. This follows the notion that face-to-face meetings are less efficient for the teacher and in turn more inconvenient.

Parent Training Across Videoconferencing. An area of needed intervention is around child behavior management. Conjoint Behavioral Consultation (Sheridan, Kratochwill, & Bergan, 1996) is a system of BC that incorporates parent involvement. Parents need to provide continuity at home with their child's behavior intervention plan from school. Many parents are unable to work with the school psychologist due to their work responsibilities, and videoconferencing would allow an opportunity to connect with school psychologists at different times of the day, while improving access. Once parents connect with the school psychologists,

they can learn behavior management strategies, ask questions about the program, and receive performance feedback.

Additionally, videoconferencing for behavior parent training could be used for an outpatient population. In other words, psychologists could videoconference with parents remotely to provide the service they would typically receive in an outpatient clinic. In rural areas, this is particularly important, since individuals living there have a greater challenge of receiving much needed mental health services. Primary care providers from rural and other populous areas have nearly 50% of referrals for behavior management problems.

Videoconferencing would allow practitioners to see more patients across more areas, and meet the staggering need of behavioral parent training.

Specifically, parents with children with ASD have high levels of reported stress and their children may have behavioral problems. This adds increased difficulty pertaining to parenting. Videoconferencing would help services reach this target demographic and allow for stress management strategies to be taught to parents, in addition to the behavior management strategies previously discussed.

Remote Trial-Based Functional Analyses. Applied behavioral analysis has a focused on evaluating the function of behavior as a core principle of its practice. The brief functional analysis has developed from the traditional functional analysis as an alternative and effective method to determine behavioral function. The brief functional analysis has even been used across videoconferencing as an effective alternative to the in-vivo brief functional analysis (Barretto, Wacker, Harding, Lee, & Berg, 2006). This study provided brief functional analyses to rural areas and successfully evaluated behavioral function, which in turn allowed for implementation of appropriate evidence-based treatment.

Another type of functional analysis is the trial-based functional analysis, which is being evaluated in schools due to its brevity and setting (Rispoli, Ninci, Neely, & Zaini, 2013). Typically trial-based functional analyses are under 5-minutes per trial and are conducted in the students classroom setting. This allows for strong external validity (in comparison to the systematic functional analysis in a empty room). This method is becoming more popular and should be evaluated using videoconferencing. The success of videoconferencing during brief functional analyses provides a strong foundation for future research to focus on trial-based functional analysis in school conducted through videoconferencing. If effective, rural school would have access to evidence-based assessment of problem behavior and the school could maximize their technology (e.g., iPads, webcams smartphones)

Conclusion

Videoconferencing is a viable alternative for interviews with teachers and should be considered during the practice of school psychology. This study found videoconferencing acceptable and efficient. Also the study preliminarily found videoconferencing to be potentially efficacious; however, more research is required to confirm its efficacy. Technology and school psychology is a budding area within the psychology overall, and continued research must be conducted to ensure that school psychologists are performing their daily responsibilities in the most efficient and effective manor. Of course, as a newer area in school psychology there will be many questions and concerns along its development; however, many governing bodies are aware of the changes and are actively writing guidelines to ensure ethical practice. The potential for videoconferencing is great, and this study establishes a foundation in school psychology for its expansive use.

REFERENCES

- Allen, A., Roman, L., Cox, R., & Cardwell, B. (1996). Home health visits using a cable television network: User satisfaction. *Journal of Telemedicine and Telecare*, 2, 92-94.
- Antonacci, D. J., Bloch, R. M., Sy Atezaz, S., Yildirim, Y., & Talley, J. (2008). Empirical evidence on the use and effectiveness of telepsychiatry via videoconferencing: Implications for forensic and correctional Psychiatry. *Behavioral Sciences & The Law*, 26, 253-269.
- Baker, D. C. & Bufka, L. F. (2011). Preparing for the telehealth world: Navigating legal, regulatory, reimbursement, and ethical issues in an electronic age. *Professional Psychology: Research and Practice*, 42, 405-411.
- Bakke, B., Mitchell, J., Wonderlich, S., & Erickson, R. (2001). Administering cognitive-behavioral therapy for BN via telemedicine in rural settings. *International Journal of Eating Disorders*, 30, 454-457.
- Baloian, N., & Zurita, G. (2009). MC-Supporter: Flexible mobile computing supporting learning though social interactions. *Computer*, 15, 1833-1851.
- Barnett, D. W., Elliott, N., Wolsing, L., Bungler, C., Haski, H., McKissick, C., & Meer, C. (2006). Response to intervention for young children with extremely challenging behaviors: What it might look like. *School Psychology Review*, 35, 568-582.
- Barretto, A., Wacker, D. P., Harding, J., Lee, J., & Berg, W. K. (2006). Using telemedicine to conduct behavioral assessments. *Journal Of Applied Behavior Analysis*, 39, 333-340
- Batsche, G., Elliot, J., Graden, J. L., Grimes, J., Kovaleski, J. F., Prasse, D., et al. (2005). *Response to intervention: Policy considerations and implementation*. Alexandria, VA: National Association of State Directors of Special Education.
- Baer, L., Cukor, P., Jenike, M.A., Leahy, L., O'Laughlen, J., & Coyle, J.T. (1995). Pilot studies of telemedicine for clients with obsessive-compulsive disorder. *American Journal of Psychiatry*, 152, 1383-1385.
- Beebe-Frankenberger, M. (2008). Best practice in providing school psychology services in rural settings. In A. Thomas & J. Grimes (Ed.), *Best practices in school psychology V* (pp. 1785-1808). Bethesda, MD: National Association of School Psychologists.
- Bergan, J. R. (1977). *Behavioral Consultation*. Columbus, OH: Charles E. Merrill.
- Bergan, J. R. & Kratochwill, T. R. (1990). *Behavioral Consultation and Therapy*. Plenum Press. New York, New York.

- Bergan, J. R., & Tombari, M. L., (1975). The analysis of verbal interactions occurring during consultation. *Journal of School Psychology*, 13, 209-226.
- Bischoff, R. J. (2004). Considerations in the use of telecommunications as a primary treatment medium: The applicant of behavioral telehealth to marriage and family therapy. *The American Journal of Family Therapy*, 32, 173-187.
- Boisvert, M., Lang, R., Andrianopoulos, M., & Boscardin, M. (2010). Telepractice in the assessment and treatment of individuals with autism spectrum disorders: A systematic review. *Developmental Neurorehabilitation*, 13, 423-432.
- Bose, U., McLaren, P., Riley, A., & Mohammedali, A. (2001). The use of telepsychiatry in the brief counselling of non-psychotic patients from an inner-London general practice. *Journal of Telemedicine and Telecare*, 7, 8-10.
- Buchner A, Erdfelder E, Faul F. (1997) *How to use GPower*. Heinrich-Heine- Universität: Düsseldorf. See: www.psychu.uniduesseldorf.de/aap/projects/gpower/how_to_use_gpower.html (accessed 20 November 2007).
- Caplan, G. (1970). *The theory and practice of mental health consultation*. New York: Basic Books.
- Caplan, G. (1995). Types of mental health consultation. *Journal of Educational and Psychological Consultation*, 6, 7-21.
- Caplan, C., Caplan, R. B., & Erchul, W. P. (1994). Caplanian mental health consultation: Historical background and current status. *Consulting Psychology Journal*, 46, 2-12.
- Caplan, C., Caplan, R. B., & Erchul, W. P. (1995). A contemporary view of mental health consultation: Comments on "types of mental health consultation" by Gerald Caplan (1963). *Journal of Educational and Psychological Consultation*, 6, 23-30.
- Centers for Disease Control and Prevention. (2012). Prevalence of autism spectrum disorders - Autism and Developmental Disabilities Monitoring Network, 14 Sites, United States, 2008. *Morbidity and Mortality Weekly Report*, 61, 1-19.
- Chafouleas, T., Riley-Tillman, C., Sugai, G., (2007). *School-based behavioral assessment: Informing intervention and instruction*. New York: Guilford Press.
- Chambless, D. L., Baker, M. J., Baucom, D. H., Beutler, L. E., Calhoun, K. S., Crits-Christoph, K., Daiuto, A., DeRubeis, R., Detweiler, J., Haaga, D. A. F., Johnson, S. B., McCurry, S., Mueser, K. T., Pope, K. S., Sanderson, W. C., Shoham, V., Stickle, T., Williams, D. A., & Wood, S. R. (1998). Update on empirically validated therapies, II. *The Clinical Psychologist*, 51, 3-16.

- Chapman, D. S. & Webster, J. (2001). Rater correction processes in applicant selection using videoconference technology: The role of attributions. *Journal of Applied Social Psychology*, 31, 2518-2537.
- Chin, W. W., Johnson, N., & Schwarz, A. (2008). A fast form approach to measuring technology acceptance and other constructs. *MIS Quarterly*, 32, 687-703.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13, 319-340.
- Deitsch, S.E., Frueh, B.C., & Santos, A.B. (2000). Telepsychiatry for post-traumatic stress disorder. *Journal of Telemedicine and Telecare*, 6, 184-186.
- Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey" and "Local Education Agency Universe Survey," 2003–04.
- Dudding, C. C. (2009). Digital videoconferencing: Applications across the disciplines. *Communication Disorders Quarterly*, 30, 178-182.
- Erchul, W. P. (1987). A relational communication analysis of control in school consultation. *Professional School Psychology*, 2, 113–124.
- Erchul, W. P. (1999). Two steps forward, one step back: Collaboration in school-based consultation. *Journal of School Psychology*, 37, 191-203.
- Erchul, W. P., & Martens, B. K. (2002). *School consultation: Conceptual and empirical bases of practice (2nd ed.)*. New York, NY US: Kluwer Academic/Plenum Publishers.
- Erchul, W. P. & Sheridan, S. M. (2008). Overview: The State of Scientific Research in School Consultation. In W. P. Erchul & S. M. Sheridan (Eds.), *Handbook of research in school consultation: Empirical foundations for the field*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Fortney, J. C., Pyne, J. M., Edlund, M. J., Williams, D. K., Robinson, D. E., Mittal, D., & Henderson, K. L. (2007). A randomized trial of telemedicine-based collaborative care for depression. *Journal Of General Internal Medicine*, 22, 1086-1093.
- Frieder, J. E., Peterson, S. M., Woodward, J., Crane, J., & Garner, M. (2009). Teleconsultation in school settings: Linking classroom teachers and behavior analysts through web-based technology. *Behavior Analysis In Practice*, 2(2), 32-39.
- Frontier Education Center. (2003). *Frontier youth: Living on the edge*. Ojo Sarco, NM: Author. Retrieved September 1, 2012, from www.frontierus.org.

- Fuchs, D., Fuchs, L. S., & Bahr, M. W. (1990). Mainstream Assistance Teams: A scientific basis for the art of consultation. *Exceptional Children*, 57, 128-139.
- Gammon, D., Sorlie, T., Bergvik, S., & Hoifodt, T.S. (1998). Psychotherapy supervision conducted by videoconferencing: A qualitative study of users' experiences. *Journal of Telemedicine and Telecare*, 4, 33-35.
- Ghosh, G. J., McLaren, P. M., Watson, J. P. (1997) Evaluating the alliance in videolink teletherapy. *Journal of Telemedicine and Telecare*, 3, 33-35.
- Gibson, J. L., Pennington, R. C., Stenhoff, D. M., & Hopper, J. S. (2010). Using desktop videoconferencing to deliver interventions to a preschool student with autism. *Topics In Early Childhood Special Education*, 29, 214-225.
- Grady, B., Myers, K., Nelson, E., Belz, N., Bennett, L., Carnahan, L., & ... Voyles, D. (2011). Evidence-based practice for telemental health. *Telemedicine And E-Health*, 17, 131-148
- Graeff-Martins A. S., Flament M. F., Fayyad J., Tyano S., Jensen P., Rohde, L. A. (2007) Diffusion of efficacious interventions for children and adolescents with mental health problems. *Child Psychology and Psychiatry*, 49, 335-352.
- Gresham, F. M. (1989). Assessment of treatment integrity in school consultation and prereferral intervention. *School Psychology Review*, 18, 37-50.
- Gresham, F.M. (1991). Conceptualizing behavior disorders in terms of resistance to intervention. *School Psychology Review*, 20, 23-36.
- Gresham, F.M. (2005). Response to intervention: An alternative means to identifying students as emotionally disturbed. *Education and Treatment of Children*, 28, 328-344.
- Gresham, F.M. & Elliott, S.N. (2008). *Social Skills Improvement System: Rating Scales*. Minneapolis: Pearson Assessments.
- Gresham, F. M., & Kendell, G. K. (1987). School consultation research: Methodological critique and future research directions. *School Psychology Review*, 16, 306-316
- Grogan-Johnson, S., Alvares, R., Rowan, L., & Creaghead, N. (2010). A pilot study comparing the effectiveness of speech language therapy provided by telemedicine with conventional on-site therapy. *Journal Of Telemedicine And Telecare*, 16, 134-139.
- Guidelines for the practice of telepsychology. (2013). *American Psychologist*, 68, 791-800.
- Gutkin, T. B., & Conoley, J. C. (1990). Reconceptualizing school psychology from a service delivery perspective: Implications for practice, training, and research. *Journal Of School Psychology*, 28, 203-223.

- Gutkin, T. B., & Curtis, M. (1999). School based consultation theory and practice: The art and science of indirect service delivery. In C. R. Reynolds & T. B. Gutkin (Eds.), *Handbook of school psychology* (3rd ed.). New York: Wiley.
- Hamilton, J. D. (2006). Evidence-Based Practice for Outpatient Clinical Teams. *Journal Of The American Academy Of Child & Adolescent Psychiatry*, 45, 364-370.
- Hassija, C., & Gray, M. J. (2011). The effectiveness and feasibility of videoconferencing technology to provide evidence-based treatment to rural domestic violence and sexual assault populations. *Telemedicine And E-Health*, 17, 309-315.
- Hawken, L. S. (2006). School psychologists as leaders in the implementation of a targeted intervention: the behavior education program. *School Psychology Quarterly*, 21, 91-111.
- Hawken, L. S., MacLeod, K. S., & Rawlings, L. (2007). Effects of the behavior education program (BEP) on office discipline referrals of elementary school students. *Journal of Positive Behavioral Interventions*, 9, 94-101.
- Hawken, L.S., Vincent, C.G., & Schumann, J. (2008). Response to intervention for social behavior: Challenges and Opportunities. *Journal of Emotional and Behavioral Disorder*, 16, 213-225.
- Heafner, T. L., Petty, T. M., & Hartshorne, R. (2011). Evaluating modes of teacher preparation: A comparison of face-to-face and remote observations of graduate interns *Journal of Digital Learning in Teacher Education*, 27, 154-164.
- Health Insurance Portability and Accountability Act of 1996, 42 U.S.C. § 1320d-9 (2010).
- Higgins, S., Beauchamp, G., & Miller, D. (2007). Reviewing the literature on interactive whiteboards. *Learning, Media and Technology*, 32, 213-225.
- Himle, J.A., Fischer, D.J., Muroff, J.R., Van Etten, M.L., Lokers, L.M., Abelson, J.L., & Hanna, G.L. (2006). Videoconferencing-based cognitive-behavioral therapy for obsessive-compulsive disorder. *Behaviour Research & Therapy*, 44, 1821-1829.
- Hyler, S. E., Gangure, D. P., & Batchelder, S. T. (2005). Can Telepsychiatry Replace In-Person Psychiatric Assessments? A Review and Meta-Analysis of Comparison Studies. *CNS Spectrums*, 10, 403-413.
- Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004).
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., & Bauman, K. E. (1994). Toward a functional analysis of self-injury. *Journal Of Applied Behavior Analysis*, 27, 197-209.

- Jackson, R. M., Cleveland, J. C., & Merenda, P. F. (1975). The longitudinal effects of early identification and counseling of underachievers. *Journal Of School Psychology, 13*, 119-128.
- Jerome, L. W. & Zaylor, C. (2000) Cyberspace: Creating a therapeutic environment for telehealth applications. *Professional Psychology: Research and Practice, 31*, 478-483.
- Jones, B.N. III, Johnston, D., Reboussin, B., & McCall, W.V. (2001). Reliability of telepsychiatric assessments: Subjective versus observational ratings. *Journal of Geriatric Psychiatry and Neurology, 14*, 66-71.
- Kagohara, D. M., Sigafoos, J., Achmadi, D., O'Reilly, M., & Lancioni, G. (2012). Teaching children with autism Spectrum disorders to check the spelling of words. *Research In Autism Spectrum Disorders, 6*, 304-310.
- Kopel, H., Nunn, K., & Dossetor, D. (2001). Evaluating satisfaction with a child and adolescent psychological telemedicine outreach service. *Journal of Telemedicine and Telecare, 7*, 35-40.
- Kumekawa, J. (2001). Health information privacy protection: Crisis or common sense? *Online Journal of Issues in Nursing, 6*. Retrieved from www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/T ableOfContents/Volume62001/No3Sept01/ PrivacyProtectionCrisis.aspx
- Lindberg, B., Axelsson, K., & Öhring, K. (2009). Taking care of their baby at home but with nursing staff as support: The use of videoconferencing in providing neonatal support to parents of preterm infants. *Journal Of Neonatal Nursing, 15*, 47-55.
- Maag, J. W. & Katsiyannis, A. (2008). The medical model to block eligibility for students with EBD: A response-to-intervention alternative. *Behavioral Disorders, 33*, 184-194.
- Machalicek W, O'Reilly M, Chan J, Lang R, Rispoli M, Davis T, Shogren K, Sigafoos J, Lancioni G, Antonucci M, Langthorne P, Andrews A, Dkidden R. (2009). Using videoconferencing to conduct functional analysis of challenging behavior and develop classroom behavioral support plans for students with autism. *Education and Training in Developmental Disabilities, 44*, 207-217
- Machalicek, W., O'Reilly, M., Chan, J. M., Rispoli, M., Lang, R., Davis, T., & Langthorne, P. (2009). Using videoconferencing to support teachers to conduct preference assessments with students with autism and developmental disabilities. *Research In Autism Spectrum Disorders, 3*, 32-41.
- Machalicek W, O'Reilly MF, Rispoli M, Davis T, Lang R, Hetlinger-Franco J, Chan J. (In Press). Training teachers to assess the challenging behaviors of students with autism using video tele-conferencing. *Education and Training in Developmental Disabilities*.

- Manchanda, M., & McLaren, P. (1998). Cognitive behavior therapy via interactive video. *Journal of Telemedicine and Telecare*, 4, 53-55.
- Manning, T.R., Goetz, E.T., & Street, R.L. (2000). Signal delay effects on rapport in telepsychiatry. *Cyberpsychology and Behavior*, 3, 119-127.
- McGreedy, K. F. (1985). Differentiation of transference versus theme interference in consultee-centered case consultation. *School Psychology Review*, 14, 471-478.
- Meehl, P. E. (1991). Why summaries of research on psychological theories are often uninterpretable. In R. E. Snow, D. E. Wiley (Eds.) , *Improving inquiry in social science: A volume in honor of Lee J. Cronbach* (pp. 13-59). Hillsdale, NJ England: Lawrence Erlbaum Associates, Inc.
- Noell, G. H., Witt, J. C., Gilbertson, D. N., Ranier, D. D., & Freeland, J. T. (1997). Increasing teacher intervention implementation in general education settings through consultation and performance feedback. *School Psychology Quarterly*, 12, 77-88.
- Noell, G. H., Witt, J. C., Slider, N. J., Connell, J. E., Gatti, S. L., Williams, K. L., Koenig, J. L., Resetar, J. L., & Duhon, G. J. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review*, 34, 87-106.
- Omodei, M., & McLennan, J. (1998). The more I see you?' Face-to-face, video and telephone counselling compared. A programme of research investigating the emerging technology of videophone for counselling. *Australian Journal of Psychology*, 50, 109.
- Peterson. L., Homer, A, L., & Wonderlich. S. A. (1982). The integrity of independent variables in behavior analysis. *Joumai of Applied Behavior Analysis*. 15, 477-492.
- Podell, D. M., & Soodak, L. C. (1993). Teacher efficacy and bias in special education referrals. *The Journal Of Educational Research*, 86, 247-253.
- Richardson, L. K., Frueh, B., Grubaugh, A. L., Egede, L., & Elhai, J. D. (2009). Current directions in videoconferencing tele-mental health research. *Clinical Psychology: Science And Practice*, 16, 323-338
- Rispoli, M., Ninci, J., Neely, L., & Zaini, S. (2013). A systematic review of trial-based functional analysis of challenging behavior. *Journal Of Developmental And Physical Disabilities*.
- Rohland, B.M., Saleh, S.S., Rohrer, J.E., & Romitti, P.A. (2000). Acceptability of telepsychiatry to a rural population. *Psychiatric Services*, 51, 672-674.

- Ruskin, P.E., Silver-Aylaian, M., Kling, M.A., Reed, S.A., Bradham, D.D., Hebel, J.R., Barratt, D., Knowles, F., & Hauser, P. (2004). Treatment outcomes in depression: Comparison of remote treatment through telepsychiatry to in-person treatment. *The American Journal of Psychiatry*, 161, 1471-1477.
- Sheridan, S. M., & Cowan, R. J. (2004). Consultation with school personnel. In R. T. Brown (Ed.), *Handbook of pediatric psychology in school settings*. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Sheridan, S. M., Kratochwill, T. R., & Bergan, J. R. (1996). *Conjoint behavioral consultation: A procedural manual*. New York, NY US: Plenum Press.
- Shore, J. H., Savin, D. M., Novins, D., & Manson, S. M. (2006). Cultural aspects of telepsychiatry. *Journal of Telemedicine and Telecare*, 12, 116-121.
- Simpson S. (2001). The provision of a telepsychology service to Shetland: client and therapist satisfaction and the ability to develop a therapeutic alliance. *Journal of Telemedicine and Telecare*, 7, 34-36.
- Simpson, S., Bell, L., Britton, P., Mitchell, D., Johnston, A.L., Brebner, J., & Morrow, E. (2006). Does video therapy work? A single case series of bulimic disorders. *European Eating Disorders Review*, 14, 226-241.
- Simpson, S. (2009). Psychotherapy via videoconferencing: A review. *British Journal of Guidance & Counseling*, 37, 271-286.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.
- Smith, A. C., Stathis, S., Randell, A., Best, D., Ryan, V., Bergwever, E., Keegan, F., Fraser, E., Scuffham, P., & Wooton, R. (2007). A Cost-minimization analysis of a telepaediatric mental health service for patients in rural and remote Queensland. *Journal of Telemedicine and Telecare*, 13, 79-83.
- Sugai, G., Horner, R.H., & Gresham, F.M. (2002). Behaviorally effective school environments. In M. Shinn, H. Walker, & G. Stoner (Eds.), *Interventions for academic and behavior problems II: Preventive and remedial approaches* (2nd ed., pp. 315-350). Bethesda, MD: National Association of School Psychologists.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th ed.)*. Boston, MA: Allyn & Bacon/Pearson Education.
- Tam, T., Cafazzo, J. A., Seto, E., Salenieks, M. E., & Rossos, P. G. (2007). Perception of eye contact in video teleconsultation. *Journal of Telemedicine and Telecare*, 13, 35-39.

- Torgesen, J. K. (2009). The response to intervention instruction model: Some outcomes from a large-scale implantation in reading first schools. *Child Development Perspectives*, 3, 38-40.
- Urness, D., Wass, M., Gordon, A., Tian, E., Bulger, T. (2006). Client acceptability and quality of life - telepsychiatry compared to in-person consultation. *Journal of Telemedicine and Telecare*, 12, 251-254.
- Walker, H.M., Horner, R.H., Sugai, G., Bullis, M., Sprague, J.R., Bricker, D., & Kaufman, M.J. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, 4(4), 194-209.
- Wilkinson, L. A. (1997). School-based behavioral consultation: Delivering treatment for children's externalizing behavior in the classroom. *Journal of Educational and Psychological Consultation*, 8, 255-276.
- Williams, T.L., May, C.R., & Esmail, A. (2001). Limitations of patient satisfaction studies in telehealthcare: A systematic review of the literature. *Telemedicine Journal and e-Health*, 7, 293-316.
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11, 203-214.
- World Health Organization. (2007). *ATLAS: Global resources for persons with intellectual disabilities 2007*. Geneva: Author.
- Yeaton, W. H., & Sechrest, L. (1981). Critical dimensions in the choice and maintenance of successful treatments: strength, integrity, and effectiveness. *Journal of Consulting and clinical Psychology*, 49, 156-167.
- Yoshino, A., Shigemura, J., Kobayashi, Y., Nomura, S., Shishikura, K., Den, R., Wakisaka, H., Kamata, S., & Ashida, H. (2001). Telepsychiatry: Assessment of televideo psychiatric interview reliability with present- and next-generation internet infrastructures. *Acta Psychiatrica Scandinavica*, 104, 223-226.
- Yuen, E. K., Goetter, E. M., Herbert, J. D., & Forman, E. M. (2012). Challenges and opportunities in internet-mediated telemental health. *Professional Psychology: Research And Practice*, 43, 1-8.

APPENDIX A: DEMOGRAPHIC INFORMATION

Demographic Information

1. Name: _____
2. Preferred Email Address: _____
3. School: _____
4. Sex (circle one):
Female
Male
5. Age: _____
6. Years Teaching: _____
7. Highest Level of Education: _____
8. Please circle one of the following to indicate your primary ethnic identity:
African American
Asian American
White, non-Hispanic
White, Hispanic
Middle Eastern
Other: _____
9. Have you ever used video chat/conferencing (e.g., Skype, FaceTime, etc.)?
Yes If yes, which software? _____
No
10. Have you ever used a touch screen computer, phone, or tablet device?
Yes If yes, which device(s)? _____
No
11. Have you ever worked with LSU school psychology to help a student in your class?
Yes
No



**Participate in an LSU Study
-- Win \$100! --**

**Help advance school psychology to help
teachers and students worldwide!**

Requirements:

- Classroom Teacher
- Participate in two brief (15 min) interviews
- Complete three brief questionnaires

**Meet At Your School, Around Your
Schedule!**

For more information, contact Aaron Fischer
aaronjasonfischer@gmail.com

APPENDIX C: VIDEOCONFERENCING SETUP AND TROUBLESHOOTING

Videoconferencing Setup and Troubleshooting

Read through this document before using the iPad and beginning the videoconference

Setup:

1. Turn on the iPad by pressing the “home” button on the bottom center of the iPad.
2. Slide the arrow to unlock (slide slowly, all the way to the right).
3. Press the application called **FaceTime** on the screen.
4. Move the iPad until you can see the top half of your body on the screen and find a comfortable seated position.
5. Press the “**Favorites**” (★) button right of the screen.
6. Press **aaronjasonfischer@gmail.com** to call Aaron and talk about your student.

Troubleshooting:

Q. What happens if the iPad falls down?

- A. Pick up the iPad and place it vertical ↓; have the cover positioned at an angle so it can support the iPad upright.

Q. What happens if the volume is too loud or quiet?

- A. To adjust the volume, locate the black volume controls on the top right side of the iPad. For louder volume press the button on top, for quieter volume press the button on the bottom.

Q. What happens if the videoconference call is dropped during the meeting?

- A. Wait for Aaron to call you on FaceTime; accept call (**green button**).

Q. What happens if the picture disappears during the videoconference (i.e., you there is only sound and a black screen)?

- A. Keep talking as normal, the picture will return soon. Notify Aaron that the picture has disappeared.

APPENDIX D: CONSULTATION ANALYSIS RECORD

CONSULTATION-ANALYSIS RECORD

| | Message Source | | Message Content | | | | | | Message Process | | | | | | Message Control | | | |
|----|----------------|------------|------------------------|------------------|----------|----------------------------|-------------|------|-----------------|---------------------|---------------------|-----------|---------------|---------------|---------------------|---------------------|----------|---------|
| | Consultee | Consultant | Background Environment | Behavior Setting | Behavior | Individual Characteristics | Observation | Plan | Other | Negative Evaluation | Positive Evaluation | Inference | Specification | Summarization | Negative Validation | Positive Validation | Elicitor | Emitter |
| 1 | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | |

APPENDIX E: CONSULTATION ANALYSIS CHECKLIST

| Problem-Identification Checklist for Problem-Centered Consultation | <i>Required Verbal Units</i> | <i>Frequency of Unit Use</i> |
|---|---|------------------------------|
| 1. | Behavior specification or individual-characteristics specification elicitors (to introduce discussion) | _____ |
| 2. | Behavior specification elicitors (to obtain a behavioral description of client behavior) | _____ |
| 3. | Behavior specification elicitors (to determine behavior strength) | _____ |
| 4. | Behavior summarization emitters (to summarize information about behavior) | _____ |
| 5. | Behavior positive-validation elicitors (to establish agreement regarding specification and strength of behaviors) | _____ |
| 6. | Behavior-setting specification elicitors (to establish antecedent conditions) | _____ |
| 7. | Behavior-setting specification elicitors (to establish consequent conditions) | _____ |
| 8. | Behavior-setting specification elicitors (to establish sequential conditions) | _____ |
| 9. | Behavior-setting summarization emitters (to summarize conditions under which behavior occurs) | _____ |
| 10. | Behavior-setting positive validation elicitors (to validate conditions under which behavior occurs) | _____ |
| 11. | Observation specification elicitors and/or emitters (to establish performance assessment procedures) | _____ |
| 12. | Observation summarization emitters (to facilitate recall of recording procedures) | _____ |
| 13. | Observation validation elicitors (to validate recording procedures) | _____ |
| 14. | Other specification elicitors or emitters * (to arrange next interview and to ensure data collection) | _____ |

FIGURE 2-2. Consultation analysis checklist for a problem-centered problem-identification interview.

APPENDIX F: DISTANCE COMMUNICATION COMFORT SCALE

Identifying Information:

Sex: **M** **F** Age: _____ Ethnicity: _____

A number of statements are given below asking you how you feel about three different types of communication (two-way audio (telephone), two-way video (video phone), and face-to-face) that might be used when receiving consultation. Although you may not have ever seen a therapist or a consultant, please indicate how you anticipate you would feel about each of the statements.

The scale uses a seven point scale, shown below, where 1 = strong disagreement and 7 = strong agreement. Read each statement and indicate how you generally feel using the given scale. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your general feelings.

| | | | | | | |
|--------------------------|----------|----------|----------|-----------------------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Strongly Disagree | | | | Strongly Agree | | |

You can indicate how you feel by choosing a number between 1 and 7. Circle the number that most closely represents how much you agree or disagree with the statement. There are no 'correct' responses; it is your own views that are important.

It is important that you respond to every statement. Please circle the response that you think is the most appropriate.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Talking to a consultant on camera would make me uncomfortable. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think I would enjoy discussing problems with a consultant over the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think meeting and talking with a consultant over a videophone would not detract from my ability to focus. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It's easier to concentrate on what someone is saying when communicating over the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I would prefer to talk to my consultant in person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think a therapist would have a hard time understanding me if we communicated by two-way video. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Paying attention to a consultant who was in the same room would be very easy. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|--|---|---|---|---|---|---|---|
| I think I would dislike talking to a therapist on the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think discussing problems with a consultant over a videophone would be fun and interesting. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I would feel very comfortable talking to a therapist on the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I think my consultant would have an easier time understanding me if we were in the same room. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I often find it hard to express myself when talking on the phone with another person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| It is easier for me to understand someone when I am in their physical presence. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I would probably have some difficulty in understanding my consultant if I met him/her only through a two-way video system. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Being in the same room with my consultant would make me uncomfortable. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I find it easy to maintain my focus when talking to someone over the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I feel self conscious when in front of the camera. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I feel detached or far away when talking on the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| If I were communicating through a videophone I believe it would be easy to maintain my attention. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I become easily distracted when talking with someone on the telephone. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Understanding my consultant over the telephone would probably be difficult. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Using a videophone to discuss problems with a consultant would be distracting. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I would feel quite comfortable discussing my problems with a consultant over two-way video. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am easily distracted when conversing with someone who is in the same room. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| I would enjoy discussing problems with a consultant who was in the same room as I. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I find it easier to concentrate on what someone is saying when we are in the same room. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I would be more comfortable if my consultant was in the same room as I. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

APPENDIX G: TECHNOLOGY ACCEPTANCE MODEL INSTRUMENT FAST FORM

Technology Acceptance Model Instrument-Fast Form

To aid me in the discussion of student academic/behavior concerns, overall, I feel that videoconferencing as a method for a consultation interview is:

| | | | | | | | | | |
|----|--------------------------|----|----|----|---|---|---|---|---------------------------|
| 1 | Inefficient | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Efficient |
| 2 | Performance degrading | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Performance enhancing |
| 3 | Productivity decreasing | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Productivity increasing |
| 4 | Ineffective | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Effective |
| 5 | Unhelpful | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Helpful |
| 6 | Quite useless | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Quite Useful |
| 7 | Difficult to learn | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Easy to learn |
| 8 | Difficult to manipulate | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Easy to manipulate |
| 9 | Obscure to interact with | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Clear to interact with |
| 10 | Rigid to interact with | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Flexible to interact with |
| 11 | Difficult to master | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Easy to master |
| 12 | Very cumbersome | -3 | -2 | -1 | 0 | 1 | 2 | 3 | Very usable |

APPENDIX H: PROBLEM IDENTIFICATION INTERVIEW (PII) SCRIPT

Bergan & Kratochwill (1990) PII Training Script:

1. Opening Salutation
2. General Statement
3. Behavior Specification
 - a. Specify Examples
 - b. Specify Priorities
4. Behavior Setting
 - a. Setting Examples
 - b. Specify Priorities
5. Identify Antecedents
6. Identify Sequential Conditions
7. Identify Consequents
8. Summarize and Validate
9. Behavior Strength
10. Summarize and Validate
11. Tentative Definition of Goal
12. Assets Question
13. Questions Re: Existing Procedures
14. Summarize and Validate
15. Directional Statement Re: Data Recording
16. Data Collection Procedures
17. Summarize and Validate
18. Date to Begin Data Collection
19. Establish Date of Next Appointment
20. Closing Salutation

APPENDIX I: COMMON BEHAVIOR PROBLEMS IN SCHOOLS

Common Behavior Problems in Schools

Think about a student who you previously had in your class or a student that you currently have in your class that did (does) one or more of the following behaviors:

- **Standing without permission**
- **Walking, skipping, or jumping around the classroom.**
- **Out of seat without permission**
- **Rocking or kneeling on chair.**
- **Tapping feet, fingers, or objects**
- **Clapping**
- **Tearing papers**
- **Kicking a desk or chair**
- **Talking with peers**
- **Shouting at the teacher**
- **Talking without permission (i.e., not raising hand to speak)**
- **Screaming, singing, laughing, or whistling.**
- **Pushing, hitting, pinching, or slapping a peer**
- **Destroying property**
- **Taking objects that belong to others**
- **Throwing objects**

We will discuss the student as if they are currently in your classroom

APPENDIX J: CAR VERBALIZATION CODES

| | Coding Item | Definition | Code | Example |
|------------------------|----------------------------|---|-------------|---|
| Message Source | Consultant | Aaron Speaking | 1 | |
| | Consultee | Teacher Speaking | 2 | |
| Message Content | Background Environment | Information is related to variables that may have occurred earlier in life or at home | 3 | Early medical procedures, homework routine, home life, etc. |
| | Behavior Setting | Refers to the ABC's of behavior, which provide insight into variables that set the occasion or maintain behavior | 4 | What happened before the problem behavior occurred (i.e., the trigger), what where the consequences |
| | Behavior | Related directly to the overt actions the client engages in and client described thoughts/feelings | 5 | Student eloping or a student saying "I feel angry." |
| | Individual Characteristics | Refer to specific, individual, qualities of a client | 6 | Age, height, ethnicity |
| | Observation | Pertains to information related to the data collection process used throughout the consultation process | 7 | "Record the students behavior during math class." |
| | Plan | Refers to verbalizations about broad and specific strategies, and how to implement them, used in the consultative process | 8 | "Do you think that self-monitoring would help the student stay on task?" |
| | Other | Related to verbalizations not covered by the other subcategories | 9 | (Catchall); e.g., "Did you watch the Saints game last night?" |
| Message Process | Negative Evaluation | Refers to the negative feelings, attitudes, or emotional response of the person making a verbalization | 10 | "When... I feel scared." or "... is bad." |

| | | | | |
|------------------------|---------------------|---|----|---|
| | Positive Evaluation | Refers to the positive feelings, attitudes, or emotional response of the person making a verbalization | 11 | “When... I feel happy.” or “... is good.” |
| | Inference | Provides information related to conclusions that a drawn about behavior and are subjective, uses words like “think,” “feel,” or “infer. | 12 | “I think the student calls out during class because of his impulsivity. |
| | Specification | Provides information that clarifies the description of behavior, or labels nonverbal behavior | 13 | What strategies do you use for classroom management?” or “Let’s look at this treatment integrity graph” |
| | Summarization | Refers to information that is repeated from a previous point during the interview, and functions as a review | 14 | “You said that the student hits other students when you take away their favorite toy.” |
| | Negative Validation | Refers to the disagreement with factual information between the consult and consultee | 15 | Did you mention that the student never engages in aggression with the paraprofessional?” |
| | Positive Validation | Refers to the agreement with factual information between the consult and consultee | 16 | Did you mention that the student only engages in aggression with the paraprofessional?” |
| Message Control | Elicitor | Verbalization that encourages a response from one of the content subcategories and a specific process subcategory | 17 | “Could you tell me where the student shows deficits in academic achievement.” |
| | Emitter | Provides information about content and process; however, it does not encourage a certain response | 18 | “The student does poorly reading comprehension.” |

APPENDIX K: IRB APPROVAL FORM

Study Approved By:

Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
225-578-8692 | www.lsu.edu/irb
Approval Expires: 10/8/2013

Louisiana State University

Participant Informed Consent Form

Dear Teacher,

You have been selected as a participant in the study *Evaluating the Efficacy and Acceptability of Videoconferencing in School-Based Behavioral Consultation*. We are requesting your permission and collaboration on the development of a innovative method to conduct consultative services between school psychologists and teachers. This study is being conducted at schools in the public elementary schools across Southeast Louisiana. The primary researcher is Frank M. Gresham, Ph.D. of the Department of Psychology at Louisiana State University (LSU).

This study evaluates the efficacy and acceptability of videoconferencing (e.g., Skype®, FaceTime®) as an alternative way to conduct consultative services between school psychologists and teachers. Teachers will be included if they are the primary classroom teacher in a general or special education classroom. Paraprofessionals, administrators, and school staff will be excluded in the current study. The goal of the current study is to advance the application of school-based consultation so that required services (i.e., academic and behavioral assessment/treatment) can be provided to students while making efficient use of teachers schedules.

You will be asked to participate in two interviews. One interview will be conducted face-to-face with the interviewer; the second interview will be conducted through videoconferencing (i.e., mediated through Skype®/FaceTime® on a tablet computer) Before each interview you will read a brief vignette about a student. During each interview you will meet with a LSU school psychology graduate student to discuss information about the student in the vignette. Before completing the interviews you will be asked to complete a brief demographic questionnaire. Also, you will be asked to complete two brief questionnaire forms about your satisfaction of videoconferencing and face-to-face interviews. Questions will ask information about your comfort and acceptability with the different interview methods, as well the ease and perceived effectiveness of the interview methods. Those questionnaires will be given before the first interview and after the second interview. Additionally, each interview will be video recorded for data analysis purposes. Participants who complete both interviews will be entered into a lottery to win one of two iPads®.

In signing this form, I understand that the purpose of the study is to evaluate the efficacy and acceptability of videoconferencing in school-based behavioral consultation with teachers and school psychologists. I understand that I will be asked to read two vignettes, participate in two interviews (one face-to-face and one videoconferencing), complete two questionnaires before the initial interview/after the second interview, and complete a demographic questionnaire before beginning the study. Also, I understand that I will be video recorded during both interviews.

I understand that there are minimal risks with participation in this study. I may feel uncomfortable being video recorded during interviews; however, I am not being judged or rated in these interviews. Also, I may feel frustrated working with the videoconferencing software and tablet computer; however, the experimenter will provide a detailed tutorial on effectively using the videoconferencing software and tablet computer. Finally, I understand that I am eligible to be entered into a lottery to win an iPad©, as long as I complete both interviews.

I understand that my participation in this study may increase the research knowledge of school-based consultation between school psychologists and teachers, which may benefit other teachers and children in the future.

I understand that video recordings, answers to questions, and any other information about myself will remain completely confidential. I will be assigned code numbers to ensure that I cannot be identified by personal information.

I understand that my participation in this study is voluntary, and I may withdraw from the study at any time without affecting my relationship with the school, which I am employed, or LSU.

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to Dr. Frank Gresham at (225) 578-4663, Monday-Friday, 9:00 a.m. to 5:00 p.m. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, Chairman, LSU Institutional Review Board, (225) 578-8692, irb@lsu.edu, www.lsu.edu/irb. I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

By signing, I acknowledge I have read and understand the above information.

I give my permission to participate (PLEASE CIRCLE). YES NO

Date _____ Signature _____

Phone Number _____ Email _____

VITA

Aaron J Fischer graduated with his Bachelor of Arts in psychology from the University of Miami in 2008. In 2009, Aaron went to Louisiana State University to begin his graduate education in school psychology. He received his Master of Arts degree in school psychology from Louisiana State University in 2012, and will receive his Doctorate of Philosophy in 2014. Aaron will be an assistant professor of school psychology at the University of Utah, beginning in August 2014.