# Research Proposal

# GREV 701 Research Methods and Design

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**Introduction**

 It is well known in the education field that the number of students with disabilities is increasing at a fast rate. These disabilities, in turn, are changing and developing new ideals into schools all over the United States. Before Public Law 92-142, the needs of students with disabilities were met through self-contained special-education classes. Public Law 94-142 enacted in l975 specified that all handicapped children between the ages of 3 and 18 must have a free and appropriate public education. The Individuals with Disabilities Education Act (IDEA) came next in1990 and was reauthorized in 1997 and 2004. The main purpose of the IDEA is to ensure students with disabilities are given a *free appropriate public education* (FAPE), regardless of ability (National Research Center for ADHD. 2013). According to recent statistics from the National Center for Education Statistics (2009), “95 percent of 6- to 21-year-old students with disabilities were served in regular schools; 3 percent were served in a separate school for students with disabilities; 1 percent were placed in regular private schools by their parents; and less than 1 percent each were served in one of the following environments: in a separate residential facility, homebound or in a hospital, or in a correctional facility (U.S. Department of Education, National Center for Education Statistics (2012).”

*1.1 History of Inclusion:*

 With that knowledge comes the increase of the inclusion classroom model. The inclusion classroom setting involves students with disabilities being serviced in the general education classroom with the primary teacher being the general education teacher. There is no pullout or alternative classroom. Implementation of these practices varies by school. Students with special needs are being put in the ‘least restrictive environment’. There two basic types of inclusion: push in or full inclusion. The "Push In" model has the special education teacher come into the regular classroom to provide instruction and support to children. The push in teacher will bring materials into the classroom. The special education teacher in this model mostly provides instructional support to the general education teacher. "Full Inclusion" places a special education teacher as a full partner in a classroom with a general education teacher. The general education teacher is the teacher of record, and is responsible for the child, even though the child may have an IEP. Inclusion is becoming increasingly more common in public education. By 1995, 891 school districts in 50 states reported offering inclusive education programs (National Center on Educational Restructuring and Inclusion, 1995).

*1.2 Assistive Technology Implications*

 Wikipedia defines assistive technology as "any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities." With in increase in inclusion settings in school systems today, Dr. Cavanaugh of the University of North Florida, states the importance of general education teachers need to become familiar using assistive technologies in order to include students with disabilities in the regular education setting.

*1.3. Review of Literature*

Research has shown special education teachers and school psychologists have a higher knowledge of strategies and methods used to teach students with disabilities. This is due in large part to literature that suggests many general educators would not able to successfully state what an efficient inclusion classroom looks like (Kilanowski, Foote, & Rinaldo, 2010). Teachers, especially general education teachers, need to be aware of the fast growing numbers of students with disabilities many schools face today. Other research further indicates the supported by federal law for inclusion settings with all special needs students. Dr. Cavanaugh at the University of Florida (2013) suggests that all teachers at some point are likely to encounter students with disabilities throughout the course of their career. Such research suggests a lack of pre-service an in-service training among general education teachers set to work in an inclusion setting. Are pre-service teachers introduced to the idea of an inclusion setting? What, if any, types of services are offered to general education teachers already working in an inclusion setting?

Other authors have focused on the importance of assistive technologies in working with students with disabilities. One particular study discusses how computer-assistive technologies (CAT) can help improve the social, communicative, and language skills of students with autism (Ploog, Scharf, Nelson, &Brooks, 2013). One of the most common aspects of the autism spectrum disorder has to do with poor social and communication skills. Sam Carlson (2012), Executive Director of World Links, states in his research how important it is for teachers to become properly trained in using educational technologies in order to students to receive the most beneficial instruction from using such tools. World Links program suggests that at least eighty (80) hours of professional development are required before teachers can really begin to integrate technology into their teaching.

*1.4 Statement of Problem*

Upon further research on the inclusion model, it is suggested that teachers a reluctant to teach in an inclusion setting. Also, research has shown that the attitude educators hold toward the practice of inclusion is an important determinant of the success of inclusive education for students with disabilities (Burack et al.,1997; Segall, 2007). There have been studies conducted involving students with disabilities and improving communication and social skills. The majority of such studies also involve assistive technologies as our society moves forward in the technological age. The argument persists that argumentative and alternative communication (AAC) provided by such technologies continue to improve the social and communication skills of autistic children (Burnden, Tinnerman, Lunce, & Runshe. 2010). Existing methods involve participation by the teacher, but lack concern for teacher training and professional development using such tools and practices with children diagnosed with autism spectrum disorder (ASD) (Hwang. 2011). Therefore, the main purpose of this study answers the questions:

The purpose of this study is to provide a deeper look into the correlation between general education teacher training in using assistive technologies and how the training effects the students use of the technology. This study will specifically look at students with disabilities at the elementary level in an inclusive setting. Furthermore, the research will include specific assistive technology incorporated into the inclusion classrooms participating in the study in order to answer the following questions:

1. Does the amount of experience or training in using assistive technologies in the inclusion classroom have an affect on the success or improvement in social and communication skills of children with disabilities?
2. What are the requirements in school districts with inclusion classrooms in terms of technology training and professional develop of these teachers?

**Methodology and Design:**

Research Design: This study will consists of a mixed method with a focus on qualitative design due to the focus on teacher experience and perception of using assistive technology in the classroom. This multiple-case study uses a quasi-experimental design using pre and post- test results in order to observe teachers prior to the actual study. The groups of the participants are pre-existing from already formed inclusion classrooms within the Canonsburg School District and Washington School Districts. One group will be the experimental group in that the regular education teachers will receive training in using specific assistive technology and the other group will be the control group with no additional training A survey will also be given to

Sampling Procedure and Intended Sample: Cluster sampling is used with a\ specific inclusion classrooms from the Canonsburg School District and Washington School District. The intended samples are teachers already working with students whom have been diagnosed with mild to moderate autism in an elementary school setting. Students will range from grades Kindergarten through 5th grade. The study will be conducted over a full school year, starting with pre-service trainings.

Population for generalization: Population for generalization is limited to a specific location in Southwestern Pennsylvania, particularly in the Pittsburgh area. Also limited is the willingness from teachers to participate in the study. This, along with the training from the experimental group of teachers limits the population. Lastly, the technology resources available are considered in the population used for the study. Certain school districts may have limited access to assistive technology resources or may not be willing to allow certain resources to be used.

Instruments: Instruments used must be conducive to student ability and tolerance. Multi-touch tablets or I pads used in training or professional development must to available to the teachers and student participants involved in the study. This study will look at the iPad App ‘Able AAC Free’. This app is designed specifically for children with autism. It works on communication, behavior interventions, social skills, and language. Limitations of location and experience using such technologies can affect the validity of this study. Ipad accessibility must be available to the teachers involved in the intervention.



Figure 1. *Abla AAC Free App*

Description of data/variables: This study uses observed variables, such as pre- and post-test data tables indicating the results. Data will be collected through pre-and post-tests of students, as well as teacher interviews/questionnaires on their experience throughout the study. Independent variables are the group in the existing autistic support classroom, clients in the behavior analysis consulting firm, and the teachers participating in the study. Dependent variables will be the technologies used in the study.

Analysis techniques: Two types of analysis are used in this study involving exploratory factor techniques. The researcher will look for patterns in communication of students, teacher experience, and presentation of how to use assistive technology tools. The researcher will also look for patterns in experimental group, where teachers have had intervention training in using the Able ACC Free app versus the control group where the teachers did not receive the training prior to having students use the iPad App. *Are teachers with more experience and training presenting information to students differently? How? Is this affecting how students are using the tools and in turn affective their improvement in communication?*

Brief Description of Analysis Techniques: What factors may have affected results? This study will consider a hierarchical linear model due to the multiple levels on data (student ability levels, different facilities, variety of teacher/facilitator experience and training). Nested data could occur in using participants from one classroom and one consulting firm

Limitations; A lot of factors are being considered in the methodology and research design of this study. Students and teachers may relocate before the conclusion of the stud, which may cause to re-direct the study. Also, students may be unable to communicate or reflect upon instruction given by teachers trained or not trained in using the assistive technology. Other limitations and concerns not mentioned may also affect the design and method of this study. Furthermore, access to participants and facilities may change, which may cause new designs and methods to be implemented.

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