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Teachers' Use of Writing Software with Students with Special Needs

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Introduction

Research Questions

The purpose of this study is to investigate the impact of a technology based internship on assistive and instructional technology implementation by current and prospective special education teachers. This investigation will contribute to the existing literature on technology integration in schools and provide an insight on the best ways to prepare preservice teachers for the real world classrooms. This study therefore, is intended to describe the ways technology is currently implemented for writing activities and the impact of technology specific trainings on its use by asking the following research questions:

1. How often and for what purposes is the technology for writing used as an instructional tool by special education teachers who, during their master's program, participated in an internship focused on the use of technologically based writing tools versus those who did not?

2. Did teachers who participated in CompuWrite Camp transfer their practicum experiences with technology into their classroom teaching and what factors that promoted or inhibited that transfer?

3. What is the efficacy of CompuWrite Camp as a technology training program and what are implications for other teacher preparation programs in terms of technology training?

Method

Design

The factors associated with the successful technology implementation were explored through a qualitative multiple case study design. In order to develop multiple perspectives of individuals we employed the maximal variation sampling strategy to select 10 teachers who chose different internship venues and received different technology training during their master's

program. Participants were purposefully chosen from current and former special education

students at George Mason University (GMU). It was our intension to choose special education

teachers representing the variety of backgrounds and current employment locations. In order to

ensure diversity the selection process followed two stages. First, approximately 20 individuals

were selected from the list of current and former graduate students in special education who

completed their internship prior to this study. They were asked to participate in a short

questionnaire. Individuals were asked to answer open-ended questions and indicate at the end if

they were willing to participate in a more elaborate interview. This process yielded 15 nominees.

After examining nominees' internship placements and current classroom settings, we chose 10

teachers to include in our study. The researchers believed that the sample reflected the full range

of perspectives of teachers who participated in different kinds of internship and received various

levels of technology trainings during their master's program. Two different groups were formed

based on the technology training the participants received during their master's program at

GMU.

    Participants. Five former and current graduate students in George Mason University's

special education licensure and master's program in learning disabilities (LD), emotional

disturbance (ED), and mental retardation (MR) who participated in CompuWrite Camp

internship over the last five years represented one group of participants in this study.

CompuWrite is a self-advertised camp program at GMU designed for students in the 4th-8th

grades who are experiencing difficulties with the writing process. This camp uses technology

and innovative computer software programs to enhance the writing process and improve written

language skills in fun and exciting activities. CompuWrite provides a unique internship

opportunity for current and prospective teachers working on their master's and licensure in

learning disabilities, emotional disturbance, and mental retardation. It offers them hands-on experience with state-of-the-art technology. GMU students gain authentic experience with the promises and considerations related to technology-based instruction, including differentiation and accommodation techniques, which can be transferred to their own classrooms.

Five members of the second group were chosen from the former and current graduate students in GMU's special education licensure and master's program in learning disabilities, emotional disturbance, and mental retardation who had traditional classroom-based internship experiences.

Overall, participants included males and females of different ethnic backgrounds. They ranged in age from 25-60 years old. During their master's program 7 out of 10 participating teachers had LD/ED concentration area, two teachers concentrated in LD/ED/MR and one teacher – in physical disabilities. The majority of teachers (5) at the time of the study served students with learning disabilities and emotional disturbance while some of them served children with mental retardation (3) and autism (2). The teachers reported the range between 2 and 7 years of experience working in programs serving children with disabilities.

Setting. The participants represented the diversity of schools in different parts of northern Virginia as well as the diversity of classroom settings. Two participating teachers served students with disabilities in inclusive/general education settings while two others had their responsibilities split between inclusive and self-contained settings. Some teachers (2) spent most of their day in resource classrooms where they provided support to students with disabilities who were pulled out of their general education classrooms for a part of a school day. Four teachers reported working in self-contained classrooms. The age level of students currently served by the

participating teachers ranges from elementary to high school with four teachers working in

elementary school, two in middle, and four in high schools.

Researcher Perspective or Background

We entered this project with background knowledge in available assistive technology (AT) resources including those for writing. In addition one of the researchers had an experience directing AT lab at the university level. She had a chance to see first hand and recognize difficulties that teachers might experience while using computers. She was a witness to teachers reporting lack of updated computers and/or software programs in schools that impeded their technology integration. Furthermore, we learned from the extensive literature review that teachers experience several barriers to successful technology implementation with their students with disabilities including the lack of training. Our knowledge of AT devices/programs and their benefits for those students with writing difficulties made us passionate in finding the best way to educate teachers about AT. We were searching for different possible methods to address the need for assistive technology training. While technology-oriented internship may present a great way to introduce current and prospective teachers to technological writing tools, it is important to take into consideration the researchers' bias. Both of us had an experience working as camp directors and university supervisors for the CompuWrite camp. In addition, we participated in development training materials for introducing the interns and students to different writing software programs. Needless to say we entered this project with a hypothesis that teachers who underwent CompuWrite camp internship would be more knowledgeable and utilize technology for writing more frequently in their classrooms. However, it is also important to say that through multiple data analysis, member checking and triangulation we kept our assumptions under control and let themes emerge from the interviews without forcing our hypothesis.

Data Collection Methods

Initial Questionnaire. Initial data was collected through a confidential, semi-structured questionnaire. Demographic data was collected including participants' age, gender, experience working with students with disabilities and current geographical and classroom locations. Participants from both groups answered questions about their computer/technology use for writing activities. Information was gathered on what encouraged and discouraged them to use computer software with their students as well as on what programs they used more often with their students. In addition, former CompuWrite interns answered additional questions written in a Likert scale format. The intent of those questions was to determine the efficacy of CompuWrite internship including its most and least beneficial aspects. Furthermore, the researchers explored CompuWrite internship impact on teachers' levels of comfort with technology and/or technology integration in their classrooms.

Interviews. Specific open-ended, semi-structured interview questions were developed for each group of participants: those who participated in CompuWrite internship and those who participated in a traditional school-based internship. The interview questions were developed to ensure emerging story and the possible consistency across respondents. The topics addressed in the interviews were correlated to the emerged themes regarding the implementation of technology for writing and the effects of technology-based internship that were discovered during the initial questionnaire.

Data Collection Procedures

Initial Questionnaire. This initial semi-structured questionnaire was posted on-line. An e-mail explaining the study and containing a link to the questionnaire was distributed to 20 current and former students in special education program at GMU. The email addresses were obtained through school websites. The first page of the questionnaire contained a consent form. After

permissions were obtained, participants answered several open-ended questions. The last

question on the questionnaire asked if they would agree to participate in an interview. Those

participants who agreed to the interview were asked to provide their email address to facilitate

further contacts. The data from the completed questionnaires were deposited and secured on the

university website.

Interviews. Interview times were agreed upon via email. Participants choose the day and time

most convenient to them. In general the interviews were conducted after daytime working hours

with evening hours being offered as an option to fit teachers' schedules. Interviews were

conducted over a two month period of time, in the spring 2006. Interviews ranged from 30 – 45

minutes in length. The interviewer used clarifying questions and probes as needed to solicit

respondents' perspectives and experiences. Each interview question session was audiotaped with

the permission of the participants and transcribed verbatim.

Questionnaire and interview participants were assigned code numbers to provide

confidentiality. Only the researchers had an access to the codes in order to track responses and

email additional copies of the questionnaires.   All data were stored in a locked filing cabinet to

which only the researchers had keys.

Proposed Data Analyses (bonus points section)

Multiple methods of data collection (questionnaires and interviews) enabled the

researchers to ensure the validity of the themes that emerged from this study through the

triangulation of data. In addition, the member checking strategy was implemented when the

researchers checked their findings with participants in the study to determine if their findings

were accurate. After all the data was transcribed, the researchers began the preliminary analysis

by dividing the text into segments and coding those segments using in vivo codes. Then, the code

labels were aggregated together to form a few major, broad themes. Furthermore, relationships among codes within themes were explored. The researchers used the *Nvivo* computer program to assist them with the data analysis. It was anticipated that the data would yield multiple viewpoints so the researchers would have an opportunity to compare different perspectives from participants with different levels of technology preparation.