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Assistive Technology as a Middle School Student Tool for Writing:

Teacher Views

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Abstract

A software program with Universal Design for Learning (UDL) was adopted for 2 middle schools by an Eastern US school district. As a precursor to expanded adoption, this study will investigate teacher perspectives on assistive technology (AT) integration for students with Individual Education Plans (IEP). Teachers currently promoting student access to technology as a tool for writing products will be interviewed and observed to gather insights, suggestions, and descriptions of strategies used to incorporate AT. Constant comparison method will be used for analysis of semi-structured interviews, class observations, and document study of lesson plans in the exploration of concerns, challenges, and inclinations of these teachers to accept and encourage AT as a justifiable tool for students with writing deficits.

Assistive Technology as a Middle School Student Tool for Writing: Teacher Views

The complex skill of writing involves a combination of motor processing skills and language competence (National Center for Learning Disabilities, 2009) that continues to be vital throughout many aspects of life. Students with learning disabilities are often plagued with writing difficulties (Newcomer & Barenbaum, 1991). The struggle to concentrate on letter formation, illusive spelling, and confusing mechanics, often confounds students' higher level thinking processes (McCutchen, 1995). Relieved of handwriting and spelling pressure with word processing, spell check, and word prediction, students can focus on higher level thinking skills.

MacArthur (1996) asserts -ed, "Existing research on word processing makes it clear that simply providing technology to teachers and students will not result in improvements in students' writing. no period" (p. 352) period Some studies indicate a positive influence when AT is used for writing by students with learning disabilities (e.g., Lewis, 2007; Zhang, 2000), while others do not (e.g., MacArthur & Graham, 1987). Perhaps teachers' level of technology comfort and attitudes make a difference. Lewis (2007) stated, "Staff believed that if teachers deemed the hardware and software provided by the project valuable they would be more likely to use them in the classroom" (p. 27). Li (2007) found, through teacher and student surveys, that although teachers tend to use technology with "strong students" they are less likely to recognize benefits technology can provide for students with weaknesses. "The students cry out loud for the more frequent use of technology and the adoption of more current technology in schools. … Their teachers, on the other hand, are far less enthusiastic" (p. 391). Although AT is an honorable and important accommodation required by law to be considered for every child with an IEP (Families and Advocates Partnership for Education, 2001), some teachers may believe that AT will organize thoughts, choose correct spelling, and write the paper for the student depriving him or

her from learning vital writing skills. AT will only help a student when masterminded by the student's orchestration of his or her thoughts with the tools and features provided. Student access to technology is inhibited when teachers believe that AT is a crutch or that it provides an inequitable advantage. Current research has shown what effects the tools have on student writing, semicolon however, research has not described teacher attitudes that result in the encouragement of student use of AT and effective strategies that facilitate AT integration.

Purpose

Identifying and addressing teachers' reservations, challenges, ideas, strategy suggestions, and attitudes may support adoption of the new software program and enhance its effective use, therefore, through semi-structured teacher interviews and classroom observations, teacher attitudes that result from recognizing the legitimate interaction of students with writing needs and the features AT can provide, will be explored and the resulting strategies used by those teachers to integrate AT into their classroom writing activities will be described. Other teachers, fortified with testimonies and valuable strategies, are more likely to adopt a positive attitude and systematic implementation of AT integration so that more students with special needs will have access to AT so they can reveal their gifts rather than confirm their disabilities.

Research Questions

In order to identify attitudes and beliefs that will encourage AT integration, the following research questions were developed.

1. What persuades language arts teachers to accept and encourage the use of AT as a legitimate tool for students with writing difficulties?
2. What strategies are used to incorporate AT as an effective student writing tool?

Method

Participants

The school district, in this study, is a small urban district on the east coast of the United States with 17 schools, two of which are middle schools that have building licenses of the AT software program, Read and Write GOLD. Middle school language arts teachers will be using the new software. Teachers who currently use technology with their students on a regular basis will be identified through administrative and peer suggestions as the participants targeted for this study. The demographics, such as number of years teaching experience, age range, and ethnicity of participants will be collected. The participants and individuals in this study will be given pseudonyms to retain confidentiality.

Data Sources

The data sources used will be completed flexible interview guides, flexible observation guides, memos, field notes, and lesson plans of the observed classes. If the teachers consent to tape recording of the interview, the digital tape files will also be transcribed and used for data collection. During the interviews some of the topics to be explored will be experience with utilizing technology, attitudes toward AT, using AT with students, strategies that have worked, and strategies that have not been successful. During the observations the environment, equipment, materials, teacher/teachers, students, lesson procedure, events, and interactions will be described. For the document study, descriptions, procedures, and items in the lesson plans will be noted.

Materials

An interview guide, document study guide, and an observation guide will be created and will evolve throughout the process better if you describe these a little more and give some examples Researcher memos will be kept throughout the process and will include insights,

questions, and comments about all components of the study. Two digital tape recorders will be used to ensure accurate and complete data collection. A computer with dictation software and headset will be used to help with transcription of materials.

Procedure

Applications will be submitted to George Mason's Human Subjects Research Board (HSRB) and to the school district's Monitoring and Evaluation Department. The study will be explained to participants and after signing the informed consent, the interview process will begin. After each interview, the notes will be analyzed and coded. Adjustments will be made to each guide for the next interview, observation, and document study guide in response to insights from the data gathered. After each interview, three appointments will be made for two observations in the classroom and one follow-up interview after the two observations. The follow-up interview will include any items or concepts added in the evolution of the forms after the first interview and will include an opportunity for member checks and clarification for the data collected.

Data Analysis

Shortly after each interview, observation, and document study, the field notes will be typed and the digital recordings will be downloaded on a computer. Using a laptop equipped with a mouse and headset each recording will be transcribed verbatim with the possible exception of voice spacers. A combination of keystrokes and Dragon Naturally Speaking Dictation Software will be used in conjunction with the slow speed playback setting for the transcription. After listening to the recordings, typing them, and rereading them for content, changes based on the data collected will be made for the next interview, observation, and document study.

The constant comparison method will be used to analyze the data. As mentioned in Strauss and Corbin (1998) open coding will be used to initially identify themes from the memos, interview notes, observation notes, field notes, transcriptions, and document notes.

Categorization of the data will follow and theme emergence will be the next step. As major themes and subthemes are identified, all data will be organized and consolidated while retaining the unique and representative comments, observations, and events.

Anticipated Results

It is anticipated that the answer to the research question, “What persuades language arts teachers to encourage the use of AT as a legitimate tool for students with writing difficulties?” should emerge as the data are analyzed. It is expected that positive attitudes of AT integration will be paired with successful strategies that can be shared with other teachers in order to facilitate greater access of AT for students who need it.

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