Teaching At-Risk Students with Technology: Teachers' Beliefs, Experiences, and Strategies for Success

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Abstract

This study explores teachers' perspective and approaches when teaching at-risk learners with technology. Using an open-ended survey, data was collected from nine experienced teachers within a high school system are analyzed. The learning barriers encountered ranged from learning disabilities to self-esteem issues. The results indicate that technology-based learning environments helped some students overcome barriers. The use of technology contributes to the increased success rates for at-risk learners. Effective strategies that classroom practices may not be able to address include individualized learning and open communication. We need to be cautious, however, that the approach of integrating technology, particularly learning exclusively online, may not be applicable for every student. Particularly, teachers warn that using technology with some at-risk students immediately creates another learning barrier.

Introduction

At-risk students struggle with learning. They bring various barriers to the classroom requiring teachers to find appropriate ways to help them succeed. One resource, technology, is becoming more recognized as an alternate method for teaching and learning.

Some advantages to using technology with at-risk students are increased motivation, individualized instructions, and freedom to work in their own way. For example, computer-based learning can provide immediate feedback, self-paced learning, and individualized lessons. Findings showed that students have increased self-esteem and are more enthusiastic towards school when working with technology (Wallis, 2004). As well, this alternative approach to teaching at-risk learners have shown improvements in attendance, achievement, and behaviour (Waxman & Padron, 1995).

Additionally, students may find computers provide an accurate and unbiased response to their work, thus relieving the teacher of that role. Both student-teacher relationships, and student-student interactions, change to one of help and collaboration. The main reason for this, Christie and Sabers concurred (1989), is the locus of control is in the hands of the students giving them freedom and responsibility at the same time.

In summary, technology offers enriched learning environments, and changes the role of learners - two important elements for teaching at-risk learners.

Purpose of Study

The primary purpose of this study is to explore the experiences and approaches of teachers who use technology to instruct struggling students. The secondary purpose is to examine the difficulties that teachers encounter when using technology with at-risk learners. Further, a closer look at the teachers' beliefs will uncover issues that burden these students, which risks their completing their education.

Theoretical Framework

A primary theory underpinning this study is learner-centered education. This theory determines that the needs of the learner are central to instruction (McCombs et al., 1996). In order to create a climate for learning, McCombs et al. suggest looking with the learner to discover what learning means by considering their talents, capacities and experiences. Themes stemming from this learner-centered model are learners function holistically through intellectual, emotional, social, and physical characteristics; learners perceive situations from their own values and experiences, thereby forming their own meaning; and learners' development is never static but grows to serve inherent needs for meaning, control and belonging. Accordingly, learner-centered education draws in the learner as a whole entity when designing and delivering learning.

An additional theoretical framework is an aspect of cognitive psychology that focuses on scaffolding knowledge, whereby scaffolding techniques infuse learning supports to promote cognitive development. More so, cognitive tools, which are "computational devices that can support, guide and extend the thinking processes of their users" (Jonassen, Peck & Wilson, 1999), can be added to build, or scaffold, the learners' ability to perform tasks. The purpose of these tools is to help users reach their goals, and like a physical scaffold, is taken away in stages as learners adjust their understanding and skill. Scaffolding aids in the learning of concepts, procedures and metacognitive skills (Dennen, 2004).

Method

Participants

The participants were nine female teachers who work closely with at-risk students using technology in a school district within Calgary, Alberta, Canada. These teachers have worked with secondary or adult students who face learning barriers such as a lack of English skills, repeated failure at school, aboriginal descent, learning disabilities, and academic or developmental challenges. These conditions place the students outside the normal stream of the learning population.

All teachers worked within modified programs serving learners with difficulties in learning. Deemed as at-risk, the learners struggled with a number of barriers as mentioned above. Typically, these are students who have not successfully completed educational levels for someone their age due to repeated failures.

Furthermore, these teachers used technology in a variety of ways to help these learners. Amongst them, three teachers taught courses exclusively at a distance through online learning. Another six teachers taught at-risk learners in blended learning environments. Both methods of instruction turn to technology as a central learning aid. Working within modified programs, the teachers continually devise ways to use technical tools to improve the educational experience of the students who are outside the mainstream of public education.

Data and Analysis

The data collected were teachers' reflection on their experience and beliefs about teaching at-risk learners with technology. Their reflection covered aspects of teaching struggling students such as technology use, reasons for success or failure, key concerns, and suggestions for best practices. Participants answered the following 5 open-ended questions with personal anecdotes relative to their experience. 1) How have you used *technology with at-risk learners*? 2) How *effective or successful* was this mode of delivery with these students? Anonymous *examples* are appreciated. 3) What *problems and key concerns* did you have using this method with these learners? Were you able to address any of these? How? 4) What *suggestions* and/or *recommendations* do you have for other teachers in working with at-risk students using technology? 5) Do you have *future plans* for continuing this kind of work? Please elaborate.

Qualitative data analysis was used to identify emergent themes. These emerged salient themes were extracted to answer our research questions.

Findings

The Learners

Descriptions of their at-risk learners showed certain patterns. For example, these learners had failed many times, and had shown delinquent behaviours in the past. As well, most of the adult students had not returned to school for many years. Most students experienced low self-esteem, and lacked the confidence to continue their schooling.

Furthermore, at-risk learners can be defined as students failing academic courses factored by family socioeconomic conditions, family instability or tragedy, failing grade levels, grades of C or lower, or having a sibling who drops out of school. At-risk students experience at least one of

these factors putting them at risk for not completing high school or attending college (Splittgerber and Allen, 1996; Price, Field, & Patton, 2003).

In short, at-risk learners pose more pronounced needs than mainstream students. That is, they need more support and encouragement from the teacher on a frequent basis. Due to their lack of motivation, management skills, and tendency to become easily frustrated, one-on-one help is vital. Other significant difficulties they faced were low reading abilities and lack of technical skills.

> 'Many … have failed many times and face a variety of problems (in detention, leaving home at 16, etc.).' (JO)

Outcomes

Positives

It was evident that the use of technology contributes to the increased success rates for at-risk learners. For instance, students could work at their own pace, and return to the materials often. This was vital as when in traditional classrooms these learners struggled to keep up with the other students. Also, students could freely ask for help privately through email without the embarrassment of asking simple or repeated questions. Furthermore, shyer students could post responses in discussion boards when interacting with other students. This was a large step for them after experiencing alienation in past educational settings. They seemed more open to express themselves in this type of venue.

> 'An adult student in his twenties … was behind in his ability to function academically. He worked consistently [online] and asked for clarification and he did very well.' (MB)

Negatives

While learning outcomes showed positive signs, it is important to realize that learning exclusively online may not work for everyone, particularly for at-risk learners. That is, some students were not ready to learn, and had other obstacles to overcome. As well, although the use of technology offered independent learning opportunities, this could be overwhelming for some students. Having to manage themselves, their learning, and their work was uncomfortable for them. Furthermore, using technology required certain skills some students were not ready to intake. Teachers should acknowledge this and help those students to realize that it is okay, and in some cases, to choose other venue to success.

> 'One [student] dropped out because "she didn't want to learn this way".' (LS)

> 'For some it was just one more way to fail.' (JO)

> 'I counseled with [those students] that this was not an appropriate method and just the fact that they had been able to assess that was a step in the right direction. I worked with them to understand that quitting this method of learning was not a failure but rather an intelligent decision based on evidence from their participation.' (MB)

Strategies for Using Technology

The teachers were clear on strategies to use when teaching at-risk learners with technology.

Choice

Foremost, students must freely choose to work in technology-based environments. Some may choose it as a last option, or are forced to take a course in this venue, but teachers warn students must be aware of what to expect in online learning. They felt if students were not motivated, they would surely fail in this kind of open setting.

> 'Perhaps most importantly, make certain that the students involved are there through their own choice. This is crucial. Students who are simply dumped in the course will resent it.' (KP)

Diverse Curriculum

Provide a variety of ways for students to communication, learn, and complete work. This involves a number of considerations. Assume nothing about the students' ability and provide ample steps within the curriculum. This includes demonstrations, graphical explanations, extra resources, and self-assessments. Adding enriched curriculum will give students additional resources to learn. As well, be diligent about communications. Post announcements and updates frequently, respond quickly to email messages from students, and work directly with students by email or phone. More so, help them to experience success by giving positive feedback that emphasises what they can do well.

> 'Allow these students the opportunity to choose what suits them best, and they may work themselves into the class without anyone knowing they are at-risk.' (MB)

Structure

These students need structure in order to move through the curriculum. Providing possible organizers, such as calendars, webpage postings, email announcements, digital work plans, or a list of deadlines, proves to be helpful. Making these available and accessible by the student sets a tone of expectations, and provides good leadership. Also, teachers suggest to rethink time in terms of due dates to encourage negotiations on an individual basis, but suggest to establish clear cut expectations for passing the course.

> 'None of my students could handle working out the dates … I started setting end dates for units.' (JO)

Customization

Use technology to customize the course. On the side of the teacher, curriculum can be designed to have more learning cues and explanations, rich activities, and interesting discussions. More importantly, digital environments can lend towards scaffolded content and constructive feedback. On the side of the learner, they can produce their work within many formats that appeal to them. Be open to their creativeness in their work, and encourage them to use a variety of tools to communicate their work. By individualizing their work, it will help maintain interest so they persevere and return each time. One teacher suggests approaching teaching online as

though each student was the only one. That way, teaching is tailored to individualized learning that is sensitive to the unique needs of each student.

> 'Provide flexibility to encourage creative/personalized responses.' (PL)

Blended learning

Face to face and online learning compliment each other. Those teachers who incorporated online curriculum with in-class learning found that it increased practice time, exposure to more learning materials, and added discussion of concepts. As well, meeting online students face to face helps them connect with the teacher. It can also be beneficial to working on problems they continue to struggle with.

> 'Both mediums helped bridge and strengthen learning becoming evident in their work, understanding, and ability in class and online.' (KE)

Safe learning environments

One of the most important aspects for teaching at-risk learners using technology is to provide a safe learning environment where everyone is accepted and supported. Ways to provide this include showing open acceptance to all students online or in class, communicating often with them, encouraging versus reprimanding them for poor or late work, and meeting in person when first starting a course. Developing a trusting relationship with these students is an important element, and one they may have never had with another teacher. Being patient with these students is vital.

> 'I try to give them time management suggestions and keep encouraging them in areas where I see they can succeed.' (LS)

Conclusion

This study has shown a number of aspects and outcomes when using technology with struggling students. As these types of learners have different backgrounds, barriers, and learning needs, technology may be another resource to help them. As well, teachers looking to teach and connect with at-risk learners may find technology offers the means to deliver modified programs that focus on the learners' needs.

Furthermore, technology-based instruction shows to have benefits for struggling learners, but care needs to be taken in the design of technical venues. A crucial web-based design consideration for at-risk learners is the provision of enriched curriculum that is scaffolded, offers ample explanations and corrective practice, and has a variety of tools to construct their work.

Another vital consideration to working with at-risk students is their need for belonging, safety, and support. Technology can provide these venues as learners re-approach education.

One important point to revisit is that technology-based learning may not be applicable to all learners. Technology is an effective resource, but some consideration must be made before implementing it. Teachers must be open to the possibility that learners may need a different venue for their education and be prepared to offer that, as in traditional learning.

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