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Virtual Schooling Through the Eyes of an At-Risk Student: A Case Study

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Abstract

While much of the growth in the popularity of virtual schooling has involved at-risk students, little research exists on the experiences of these students in this largely independent setting. This paper describes a case study of an at-risk student in a rural school in the province of Newfoundland and Labrador who was enrolled in an online course as a means to graduate on time. Data from interviews and video observations were analyzed to reveal several themes. The student was good at prioritizing and understood what students needed to do to succeed in an online environment, yet he often did only the minimum needed to pass the course, and his productivity during synchronous and asynchronous sessions declined as the hour progressed. We also found that the student was limited by the lack of proper technology at home. Based on a single case, we are unable to generalize beyond this one student. However, since the attitude of taking the path of least resistance may have taken hold in earlier grades for this particular student, research into improving virtual schooling for at-risk students may be ineffective or counterproductive by reinforcing rather than reducing those attributes; at least in this instance.

Keywords: at-risk students, case study, K-12 online learning, virtual schooling

The growth of K-12 online learning in the United States has been exponential. Clark (2001) estimated that there were between 40,000 and 50,000 students enrolled in online courses; eight years later that number was over 1,000,000 (Picciano & Seaman, 2009). Watson et al. (2010) reported significant online learning activity in 48 states, and the District of Columbia. Canada has experienced a similar growth, with twelve of the thirteen provinces and territories having some form of K-12 online learning activity (Barbour, M.K., 2011). While there continues to be growth in the practice of K-12 online learning, numerous scholars have lamented the paucity of research that has been conducted into K-12 online learning throughout North America (Barbour, M.K. and Reeves, T. C., 2009; Rice, 2006).

In addition to the general lack of available research, many of the studies that have been conducted have focused on a selective population of students. Haughey and Muirhead (1999) described the preferred characteristics of students engaged in K-12 online learning as including the highly motivated, self-directed, self-disciplined, independent learner who could read and write well, and who also had a strong interest in or ability with technology. Yet, Barbour, M.K. (2009) indicated that this was “clearly not an accurate description of the entire or possibly even the majority of students attending virtual schools and, particularly, cyber schools” (p. 18).

Due to the lack of knowledge about at-risk K-12 students engaged in virtual schooling, we sought to address the following research question.

- What is the experience of an at-risk high school student in a supplemental online learning program?

In this article, we describe the results of a case study that focuses upon the experience of one K-12 online student, Kevin, who was not representative of the typical K-12 online learner (at least based on the current literature). Based upon interviews and observations, we outline five themes related to how Kevin engaged in his online learning and discuss the strengths and challenges he experienced. We offer this single case as an example of a larger population of students that have been neglected thus far in the K-12 online learning literature.

Literature Review

Watson et al. (2008) indicated that the largest growth in K-12 online learning enrollment is in the full-time cyber schools, and both Watson et al. (2010) and Klein (2006) stated these schools have a higher percentage of students classified as ‘at-risk’. According to Chen and Kaufman (1997), at-risk students commonly have one or more of the following characteristics:

- low socio-economic status;
- from a single parent family;
- an older sibling who dropped out of school;
- the student had changed schools two or more times;
- had average grades of “C” or lower from sixth to eighth grade; and
- has repeated a grade.

Essentially, these are students who might otherwise drop out of traditional schools (Rapp, Eckes & Plurker, 2006). While these students constitute a significant percentage of the K-12 online learning student population, as Barbour, M.K. (2009) noted, they are almost completely absent in the research literature.

Hurley (2002) conducted one of the few studies that have examined at-risk students in an online environment. He examined how virtual schooling might benefit at-risk students and what variables might contribute to their success a pilot project at a charter school in Texas. Fifty-eight students were enrolled in five courses using the PLATO Web Learning Network over a six-month period. Twenty-six of these students left the program by choice, moved away, or were removed for not meeting the requirements. Of the remaining 32 students, 17 attended two-thirds of a semester, five passed a single course and four passed two courses. Hurley found that students had problems dealing with the level of flexibility in completing assignments, although some did develop the necessary time management skills. The students were required to be on the system at least 20 hours per week, which became problematic because while the instructors had access to the time logs through the system, the students had to track their time manually.

In 1996, a team from the University of Nebraska led a series of investigations into the use of web-based high school courses as the Communications, Learning, and Assessment in a Student-Centered System (CLASS) project. PytlikZillig, Horn and White (2003) found that while the research suggested “that teachers should assign higher level tasks that at-risk students can personalize, and that integrate basic skills learning with the opportunity to exercise higher-order thinking skills” (p. 109), students generally used lower-order computer-mediated interactions. Also teachers generally recommended at-risk students use more simple technologies. In a separate study, Horn, PytlikZillig, Bruning and Kauffman (2003) found that at-risk students could be successful in online learning environments if their engagement was closely monitored by a school-based teacher, and if that school-based teacher provided appropriate feedback to students on their independent learning skills.

In the book based on her dissertation study, Klein (2006) examined the relationship between homeschooling and the California Virtual Academy (an online charter school). In the description of the types of students typically enrolled in online charter schools, Klein stressed the traditional high levels of enrollment from at-risk students in these kinds of educational opportunities. She found the online charter school provided highly structured, self-paced, and individualized instruction that both students and parents appreciated. Klein also found that the parents of students enrolled in this online charter school took a very active role in their child’s learning process, often seeing themselves as the teacher and the online charter school’s curriculum and instructor as simply supporting resources.

Similarly, student motivation can play a role in the success of a student, but the construct of goal achievement may differ with at-risk students. Elliot and McGregor (2001) noted the lack of research into the mastery-avoidance construct of goal achievement. Under this construct, goals are developed around avoiding failure. Nieswandt and Shanahan (2008) examined the attitudes and goal orientation of a general (i.e., non-college bound) science class at a Canadian high school and found themes of students simply looking to pass the course because the course was taken to simply fulfill a graduation requirement. As the students were not intending to pursue a career in science, it was a low priority in their lives. Therefore, the students had a goal construct that was mastery-avoidance.

While not based on empirical research, the International Association for K-12 Online Learning (iNACOL) has released two reports related to K-12 online learning and at-risk students. Based on reviewing six programs focused on at-risk students, Watson and Gemin (2008) recommended that K-12 online learning focus on motivating students, providing individualized, self-paced instruction, allowing credit for work or community service, and including some face-to-face component. Similarly, using a convenience sample survey (without follow-up interviews or observations) and a review of three programs, Archambault et al. (2009) recommended that programs focused on at-risk learners should increase contact and communication between teachers, staff, and students and their families, identify students as early as possible, implement specific online curricula (including individualized instruction) and flexible scheduling, and work with teachers and staff to ensure they are able to meet the needs of at-risk students. It should be noted that both iNACOL reports indicated the importance of individualized instruction for at-risk learners in K-12 online learning environments. Yet, in his analysis of over 800 meta-analyses related to student achievement, Hattie (2008) found that individualized instruction was not an effective intervention in improving student achievement. This contradiction underscores the need for empirical research, as opposed to simply the opinions and beliefs of practitioners.

While not specific to K-12 online learning, Slavin and Madden (1989) reviewed literature for common themes in brick-and-mortar programs that help at-risk students succeed. The authors began by outlining programs and strategies that do not work, including flunking/retention of students along with pullout and in-class programs that are not aligned with the student’s regular instruction. There were three main themes

with programs that helped at-risk students succeed: prevention, classroom change, and remediation. The optimal time to implement prevention programs was in the first grade, particularly in reading. Programs that grouped based on ability (rather than age), and assessed and reshuffled groupings based on progress were found to be more successful; as were cooperative learning models where students were rewarded based on the learning that took place among all of the group members. Remediation programs were a last resort, but often focused on tutoring with volunteers and older students. Overall, the authors stressed comprehensive, intensive, and adaptable programs focused on prevention and the adoption of new classroom instructional models more than anything else. They defined comprehensive as the ability to provide support and curricular materials to the teacher, and intensive as the ability to provide one-to-one tutoring and/or computer-aided instruction that could be personalized to the student's needs.

Finally, in their review of post-secondary online course dropout literature, Lee & Choi (in press) identified 69 factors under three major themes related to student dropout in online courses. Student factors such as aptitude, relevant experiences (i.e., professional and academic experiences before taking online courses), relevant skills (i.e., technical and management skills), and psychological attributes composed the majority (55%) of the factors related to student dropout rates. Course and course design factors made up only 20% of the factors, and environmental factors (i.e., work commitments, study environments) made up the remaining 25% of the factors. While the authors reviewed strategies used to promote persistence in online courses, they stated that the lack of empirical evidence used to evaluate these strategies was a cause for concern. It should also be noted that in their methodology they discarded any studies that, "pertained only to...online classes in K-12 settings, due to their scarcity" (p. 4). Clearly, the factors related to the success of at-risk students in K-12 online learning environments is an area where more research is needed.

Methodology

The goal of the study reported on in this paper was to examine the perceptions of a lower performing student enrolled in supplemental online courses. The research was: "What is the experience of an at-risk high school student in a supplemental online learning program?" Given that our purpose was to seek a greater understanding of an individual student's experiences, we used a single case study involving interviews and video observations for our methodological approach (Yin, 2003). Stake (1995) stated that a case is a bounded yet integrated system, while Bogdan & Biklen (2007) suggested that a case study should examine some combination of a specific place, a specific group, and a specific activity. Given these parameters, a case study was an appropriate methodology for our study.

The data for this study were collected as part of a larger research study into the nature of K-12 online learning in a rural setting (Barbour, M.K. and Hill, J. R., 2011). The initial study was conducted during the 2005-2006 school year at Beaches All Grade (a pseudonym), a rural school in the Canadian province of Newfoundland and Labrador. Data were collected from twelve students in the school; however, the data from four students were excluded from the larger study for a variety of reasons (e.g., an inability to conduct the final interview with the student). Among the four students excluded was Kevin (a pseudonym), a lower performing student who is the focus of this case study. The purpose of this study was to explore Kevin's experience with his online courses.

The data consisted of two semi-structured telephone interviews with Kevin (see Appendix A for the interview protocol) and seven hours of videotaped observation during his scheduled synchronous and asynchronous classes. Bogdan and Biklen (2007) stated that interviews are a good source of information for a case study where the researchers' intent is to solicit the perspective of an individual. Miles and Huberman (1994) noted that semi-structured interviews allow the researcher to have some plan in place for the interview but with some flexibility to explore tangents as needed. However, since we were working with data from the earlier study, the questions from the semi-structured interviews could not be altered in hindsight. The video observations allowed additional data to be collected in a more discreet manner. It also allowed for us to collect non-verbal data that was not possible to collect during a telephone interview. DuFon (2002) noted that data from video recordings can help to round out how we understand a person and their actions. The video taped observations were taken of the distance education room while Kevin was engaged in his virtual schooling. As there was an online grade eleven mathematics course scheduled at the same time as Kevin was scheduled for his online course, sometimes Kevin was joined by four other students and other times he was by himself.

Data from the telephone interviews and the video observations were transcribed, coded, and analyzed using a format similar to the four-stage process developed by Ruona (2005). In the first stage, the transcribed data was converted into a table format in *Microsoft Word* containing six columns. In the second stage of analysis, the data was reviewed multiple times by each researcher, with notes and ideas about the data being written in the appropriate column. In the third stage, the researchers developed codes independent of one another. In the final stage, the coded transcripts from each of the researchers were compiled. These collective codes formed the basis for developing themes.

Examining data from both the interviews and the video observations helped to improve the reliability and validity of the results of the study. Obtaining data from multiple sources allowed the researchers to paint a fuller picture of the case (Bogdan & Biklen, 2007), but we were clearly limited by the fact that the data came from a single student. Additionally, having three researchers analyze the same data, both independently

and then collectively, reduced some of the potential for individual bias in interpreting the data.

The Site

The online courses were administered through the Centre for Distance Learning and Innovation (CDLI), an initiative started by the Government of Newfoundland and Labrador in 2001. The CDLI's vision centered on providing, "access to educational opportunities for students...in both rural and urban communities in a manner that renders distance transparent" (Barbour, M.K., 2007, p. 28). CDLI utilized both synchronous and asynchronous methods of instruction using the *WebCT*® (i.e., for static course content, discussion boards, and email) and *Elluminate Live*® (i.e., for two-way voice and video communication, breakout chat rooms, and instant messaging) platforms (Barbour, M.K. and Hill, J. R., 2011). In addition to the instructor for each online course, schools were required to have a faculty member responsible for the maintenance and functionality of the computers used in the courses as well as a faculty member who provides supervision and support for the students.

The student in question was enrolled at Beaches All Grade, a rural school in Newfoundland and Labrador that had approximately 15 teachers and approximately 100 students (Barbour, M.K. and Hill, J. R., 2011). The school consisted of an elementary school building and a high school building linked together by a gymnasium. The school served three communities that had a combined population of under 1,000 people.

The Case

Based upon the interviews with and observations of Kevin, along with interviews teachers and administrators used by Barbour, M.K. and Hill, J. R. (2011), we provide this description of Kevin. Kevin was a grade 12 student enrolled in one of the fine arts courses. This was Kevin's second CDLI course, having completed another fine arts course the previous year. In talking with Kevin it was obvious that he was intelligent, as his awareness and understanding of current events attested. Yet, he was not particularly well suited to a formal school environment. With ambitions to study and apprentice in a trade, he was much more at home working with his hands than he was sitting in a classroom. This behaviour was best illustrated by how Kevin behaved in the distance education room. With a personal interest in drawing, one would have thought Kevin would have enjoyed and been more engaged in a fine arts course. However, there were four grade 11 students enrolled in an online mathematics course in the distance education room at the same time that Kevin was scheduled for his online fine arts course, and it was not uncommon for Kevin to have spent large blocks of time during his asynchronous periods and even much of the class during his synchronous periods, chatting with one or more of the other students in the distance education room.

While some would have characterized Kevin as a lazy student, we would argue it was the exact opposite; Kevin worked as hard as possible to do as little as possible when it came to things that he perceived as being "school" – which included participation in this study. For example, in trying to conduct the final interview with Kevin, the principal and one of the researchers decided to schedule it during Kevin's CDLI class on the researcher's final day at the school because according to the principal "he doesn't do anything during that time anyway" (he had also missed the third interview and was difficult to successfully schedule for the first two interviews). On the final day Kevin spent the first 20 minutes of class trying to convince the school principal and the lead researcher that he had a synchronous class that he couldn't miss even though the teacher hadn't logged in yet, then when the researchers would leave he continued to talk to one of the students from the mathematics course (as this was one of the classes when a video observation occurred). It was almost amusing that the quote next to his section of the school's graduation book read, "If at first you don't succeed, give no evidence that you tried." The one at the bottom of that page directly underneath his section read, "Hard work never killed anyone, but why take the risk?"

Kevin had a computer with Internet access in his room, which he shared with his younger brother. When asked if he had tried to access *WebCT* from home, he stated "my computer is not fast enough for that." When asked about *Elluminate Live*, he indicated that it was "not nearly fast enough for that."

Results

According to the school principal, Kevin, for the most part, seemed to be a "nice, respectful" student lacking the motivation to excel in his online course. Teachers at the school believed that he was doing just enough to get by and graduate. His work ethic varied, often depending on the classroom environment. Based on the data in the interviews and the video observations, several themes emerged regarding his ability to work during class, at home, and his motivations toward course work in general.

Kevin was good at prioritizing his attention according to the daily situation

When Kevin was asked what applications he had running when in the CDLI classroom, he responded that

besides *WebCT* and *Elluminate*, he would open *MSN Messenger* and his e-mail. However, when asked specifically about his scheduled online (or synchronous) classes, he said that he did not have his instant messaging active.

When you said you'd be listening to the teacher as he was going over things how does your art teacher structure a class, like what does he do in a class?[1]

Well, he is always talking to us, always starting conversations and asking us questions, putting all kinds of diagrams and pictures up on the whiteboard, that's about all I can think about now.

When he asks questions, does he ask specific students, like would he say, what do you think about this John or Kevin can you answer this question or does he just say, does anyone know the answer to?

Sometimes he just asks one person and sometimes he asks the whole class.

So you kind of really have to pay attention because you never really know when he is going to call specifically on you?

Yes. (Interview 1, lines 90-103)

He understood that he would need to focus during the synchronous session. Kevin's focus during the synchronous classes stemmed from how the instructor ran the classes rather than his own motivation. This is further evidenced by the following exchange:

There are other students in the class taking other courses while you are there, right?

Yup.

During your online class, do you chat with them?

Yeah, sometimes.

In a sixty minute class, how much time do you say you spend chatting with them?

I would say between ten and twenty minutes. (Interview 2, lines 150-157)

In addition, Kevin went on to say that if he knew what was going on in the course, and if his classmates in the distance education room had a scheduled offline (or asynchronous) class, he would spend time talking to them about topics unrelated to either of their courses.

During asynchronous classes, Kevin simply finished up work he was unable to complete during the synchronous class or spending time making up late work. There was also some discrepancy between his answers dealing with off-task time. In the first interview, he stated that in a typical hour he would spend about 35-40 minutes on-task during asynchronous classes, contrasting that with 40-50 minutes (he actually stated that he spends 10 to 20 minutes talking to others) during synchronous classes. However, in the second interview the following interaction takes place:

How much time do you think you spend talking with the other students during your asynchronous time?

Ten, fifteen minutes.

So it is about the same then as during your synchronous classes?

Yup. (Interview 2, lines 219-223)

Regardless of the context, based on Kevin's own perceptions the amount of off-task time was quite significant. He also contradicted statements about what they talk about when off-task. In the first interview, he stated that there was more discussion of class material when chatting with others (including online classmates) during online classes, and almost none during the offline classes. Yet, in the second interview, he stated that the amounts were about the same.

Essentially, Kevin would arrive to class, get to work almost immediately, and when he finished would move on to other things. His statements were triangulated with the observations from the video. In most of the videos, Kevin was the first one in the classroom and he promptly sat down and got right to work. In fact, on one occasion he worked uninterrupted for the first 8 minutes of class, engaged to the point that his classmates pointed out that he never even acknowledged that they had come into the distance education room. In terms of prioritizing his attention, Kevin gave priority to his work at the beginning of most of his online classes

Kevin took the path of least effort to solving problems and doing assignments

There were two lines of questioning focused on how Kevin completed his work (i.e., where he went for help when he was having difficulty and how he would go about doing research for an assignment). In both instances, Kevin would initially go toward the method that required the least effort on his part (i.e., e-mailing the teacher for the former, and searching *Google* for the latter). Using other resources, electronic or otherwise, were left relatively untouched. For example, Kevin was not a strong note-taker, preferring to save screen shots and store them in a folder that he kept on his school computer. Kevin rarely used most of the resources available to him. Table 1 lists the various resources available to Kevin and his responses when asked how often he used them in the past month.

Table 1: Kevin's responses to how often he used resources for help in the past month.

Resource	Quote
Asking an in-school teacher	"Sometimes, but not very often." "None, well once, maybe twice."
Archived Elluminate Live sessions (i.e., recorded synchronous classes)	"I've done that once."
Lessons in WebCT (i.e., asynchronous course content)	"Not very often, but if I'm stuck and I've got nothing else to do I'll check." "Not the past month."
Printouts of the whiteboard	"Ahh, no I don't think so."
Google	"Yeah, I done [sic] it for one lesson."
Contact e-teacher outside of a synchronous class (i.e., email, phone call)	"Ah, nope."
CDLI e-tutor	Static on the recording made his response inaudible, but there was no e-tutor for art courses
Other students in the same online course	"No, I don't really talk to anyone from the other schools."

The researcher also asked several questions about Kevin's actions when it came to writing. Kevin usually wrote a single draft of a paper, and proofreading consisted of using the spell-check feature in the word processing program. He would not print it out to proofread, and rarely read it to himself before submitting. These examples exemplified Kevin's disengagement.

Kevin's productivity waned as the hour progressed

In the interviews, Kevin stated that the percentage of time he worked in the CDLI classroom was not very high. The video observations confirm this. However, during most of his classes he would get to work right away at the beginning of class, but as the hour progressed he became more disengaged. Even when the other students in the classroom who were enrolled in a different online course returned to their work, he would not look at his computer for several additional minutes before finally returning to the task. In one of the videos, Kevin begins to talk to his classmates around the 8-minute mark. He does not turn around and face his computer again until just before the 29-minute mark, even though his classmates settled down 4 minutes earlier. Additionally, he did not spend any serious length of time working for the rest of the hour, either. However, in another video, his classmates spend the majority of the hour working asynchronous in another classroom. Kevin's time on-task was significantly higher during this period, spending a solid 20 minutes working on the computer. We made the assumption that he was working on class material (rather than being off-task) because at one point he gets frustrated with something and pounds on the table.

Kevin's waning productivity could be attributed in part due to how his online course was taught. Kevin stated in one interview that during synchronous classes, his online teacher stops with about ten minutes left. If the teacher assigned work to do in a synchronous class with only a few minutes remaining, it would be difficult to get started on that project, particularly given the nature of an art course. However, in that same interview Kevin went on to say that he only spends about 35-40 minutes (of a 60-minute class) doing work in an asynchronous class. When asked what he would do with the remaining time, Kevin responded:

Well, mostly I would talk to other people in the class and check my e-mail.

Okay, now the fifteen or twenty that you are doing other things, would that happen at the beginning of class, at the end of class, or would you kind of take breaks throughout?

It is mostly at the end of class. (Interview 1, lines 152-157)

This was also often the case during the synchronous classes:

In a sixty minute class, how much time do you say you spend chatting with them?

I would say between ten and twenty minutes.

Is the conversation ever about the course you're taking or the course they're taking or is it just about other things?

Sometimes about the course they're taking and sometimes other things.

Okay, what percentage would you say is about the course that one of you guys are taking?

Twenty percent. (Interview 2, lines 155-163)

Based on the interviews and video observations, Kevin was on-task very early on in the hour, but became less and less engaged as the class period progressed. Once distracted, it was usually difficult to get back on track. During most of his classes, he would be absorbed by the computer (and presumably his online course), but once the students from the other online class were off task he would turn around and participate. When his classmates settled down and got back to work, it took him a while to get back on-task. During the interviews, Kevin mentioned that he did not pay much attention to things he already knew. Based on his assertion and our observations, we make the assumption that he paid attention at the beginning of the class period because it increased his understanding, which led to his disengagement as the class progressed because he felt understood the material.

Kevin was sometimes limited by the technology he had at home

Kevin had plenty of time on his hands, based on his use of both synchronous and asynchronous time, and in addition to the fact that he stated his online teacher was quite flexible with due dates. However, Kevin could not access much of the online material from home.

Have you ever tried to get into WebCT from home?

No, but my computer is not fast enough for that.

Have you ever tried to get into the Elluminate Live from home?

Not nearly fast enough for that.

So basically what you would use your home computer for then is mostly working on your assignments and that?

Yup. (Interview 1, lines 59-66)

In addition to not being able to access the course content or synchronous classes from home, he was also did not have some of the software needed to complete his online class activities (e.g., *Adobe Photoshop*) at home.

Do you have the program that you use at school on your home computer as well, like do you have Photoshop and that on your home computer?

Not this year (static on the recording makes some words inaudible).

So basically if you don't get it finished up during the synchronous class when you got started, you've got to get it done during the asynchronous class because you don't have the software at home to finish it up?

Yup.

Do you find that difficult sometimes that you can't work on your stuff at home?

Well, yeah I guess sometimes (static on the recording makes some words inaudible).

(Interview 2, lines 194-205)

It was uncertain whether Kevin would actually do the work at home, given the fact that time was provided during his asynchronous classes for finishing up work. The art course was unique in that much of the work had to be done on the computer. If it were a math or history course, where problems from a text were assigned, Kevin's general apathy and disengagement would lead one to believe that he would do as little as possible outside of the classroom to earn a passing grade.

Kevin had strong opinions about the types of courses and the types of students that could be successful in an online environment

Of all of the students included in the larger study, Kevin was probably the most responsive during the interviews after being asked about his likes and dislikes of his CDLI courses. Given the choice, Kevin said he would prefer to take online courses, but with certain restrictions. He felt that certain subjects were not suited to online instruction:

If you had the choice to take some of your other classes online, you'd take them online?

Yeah, some of them I suppose, when it comes to math or English I'd still take those in the school, but other subject areas, like history or something like that, some course like that, the CDLI.

Why would you prefer to take a course, say like math or English in school?

Well, when you'd in school, the teacher can come straight to your desk and show you know, to help you because he sees it. You get much more attention.

Why would you prefer to take courses, say like Canadian history, online then?

Canadian history, if you don't get it right away, you can usually find it on the Internet no trouble at all, like if [O.C. A call waiting beep sounds over two or three words] World War Two, you usually finds on the Internet. (Interview 1, lines 238-253)

Though he did not state the specific difference, it appeared that he thought the online format was suitable for content-driven courses (i.e., history, the way it is taught in most schools), but not for process-driven courses (i.e., math and writing).

While Kevin spoke at length about what he liked about the online format, it did not provide too much in the way of detail. For example, Kevin credits the teacher for making the course interesting:

What sort of things do you like about your CDLI courses?

Teacher is really interesting, so, and he's always willing to help us, and, I don't feel like I got to be rushed at anything. So if I do need any help in my online courses to you always look back through the recording, I can't think of anything else. (Interview 1, lines 228-234)

Interesting teachers can be found in both online and face-to-face courses, the ability of a teacher to engaged their students isn't based on a specific medium. Given Kevin's general disengagement from school, Kevin's views about what courses should be offered online could be reiterated in the following manner. Since content-driven courses were boring to him, they should be put online and, hopefully, an interesting teacher will make it less boring. Simply put, Kevin believed that process-driven courses are too difficult to do without continual support and feedback, so a face-to-face format is better.

When asked whether every student could be successful in an online course, Kevin responded:

During the focus group that I did with the three students at the beginning of my research, one of the things that they mentioned was that they felt that not every student could be successful in these online courses, do you agree with that?

Yeah, you gotta do it, you gotta do all of your homework, you got to do most of your work home. It's not for people who don't have, who don't do much homework, so they'd probably have trouble.

....[sections of the transcript excluded]

You mentioned that you have to be someone who is used to doing homework or who doesn't mind doing homework, are there any other characteristics that you can think of that would help a student be successful in an online course?

*Well, you gotta be able to play close attention to what the teacher is saying the little details.
(Interview 1, lines 270-298)*

The last line consistent with his earlier comment about having to pay attention during the synchronous class in case you were called upon by the online teacher. However, the irony was that Kevin also mentioned he was working on overdue work, and that he also described himself as doing well in the art course.

Discussion

Kevin fit several of the characteristics commonly associated at-risk students described by Chen and Kaufman (1997). Kevin was behind schedule with respect to graduating and had poor grades throughout his educational career. However, he also showed some characteristics necessary to be successful in an online course, and was able to express the need for students to possess those characteristics in order to succeed in that largely independent learning environment.

Kevin showed that he was able to efficiently prioritize his efforts (e.g., working at the beginning of each class, having greater focus during synchronous classes, etc.). Hurley (2002) stated that time management issues were generally a major hurdle to success in online courses for at-risk students. While Kevin's grades were never very high, if passing a course was his measure of success he demonstrated the necessary time management skills to achieve that success. Kevin exhibited some of the factors that Lee and Choi (in press) identified as detrimental to online course persistence. For example, Kevin exhibited student factors such as an internal locus of control, time management skills, and adequate technical skills; all of which Lee and Choi identified as a positive characteristics for online learning success. However, Kevin also seemed to have limited academic achievement, low motivation, and a lack of what the authors referred to as a love of learning – all of which Lee and Choi indicated were barriers to online learning success. Further, Kevin did little in terms of note-taking, probably because he was able to get by with what he was able to save off of the screen during his synchronous classes. In addition, he probably understood that writing a paper in one draft and using only the proofreading tools on his word processing program would also earn him a passing grade. This observation is consistent with the ideas of Elliot & McGregor (2001). Kevin's actions were driven by simply making sure he did enough to pass, not by a thorough mastery of the material.

During an individual class period, Kevin's initial strong work ethic would fade quickly when given the means and opportunities to be off-task. Simply put, Kevin was hindered by environmental factors such as work commitments and a lack of proper technology at the home (i.e., his study environment), which was consistent with Lee and Choi's (in press) obstacles to success. Still, Kevin was able to turn in most of his assignments on time, despite the fact that he did not have the full capacity to complete the work at home. Kevin had a clear understanding of when he needed to focus during the synchronous classes and attempted to limit distractions during that time. He was able to clearly verbalize the traits necessary for success in the interview. However, he stated that if he already had a grasp of what was being taught (i.e., he felt he knew enough to achieve his definition of success), he would shift his focus elsewhere. Some might just as easily view this as laziness, as they could describe Kevin's approach to online learning as a case study in efficiency. Similar to Nieswandt and Shanahan's (2008) observations of the lower-level general science class, the motivation was to fulfil a requirement for graduation and not for the learning or mastery of the material.

Slavin and Madden (1989) suggested early interventions were the key to helping at-risk students succeed. This may contradict efforts by virtual schools to help at-risk students, since much of what is done online is heavily slanted toward the high school years (Rice, 2006). Kevin was perceived as having a low level of motivation, which could have actually been a high level of motivation to arrive at a very low standard through a path of least effort. At this point in his educational career, it is possible that these school work habits were set in stone, and like many at-risk students he would carry those habits (i.e., working hard to do as little as possible) into any type of online course. Since at-risk students are often placed in those environments as a way to take remedial courses for credit recovery, investments in improving online education to individualize instruction, motivate students, and create structure; as Watson and Gemin (2008) advise, are misguided as a "too little, too late" solution. These "improvements" may actually help to reinforce the habits possessed by these at-risk students through a highly structured curriculum that allows them to "play the game of school" in order to obtain credit while putting in the minimum amount of effort; what Entwistle and Ramsden (1983) referred to as "strategic learning." Some K-12 online learning programs have begun to introduce online learning during the younger grade levels (including the one where this study occurred). For example, Murphy (2010) described a project where the CDLI partnered with a group of urban and rural schools to provide online learning support for grade six French as a second language teachers and students. One of the unintended benefits of this project was to introduce these K-12 students to the independent nature of online learning in a more mentored and supportive environment prior to eventually having to complete entire courses online as high school students.

Conclusion and Implications

Dealing with at-risk students in an online environment poses several challenges. First, the design and

delivery of the online instruction did not motivate Kevin to do more than the absolute minimum level of effort. Second, at-risk students often come from poorer households and may not have the necessary resources to provide the level of technology needed for a student to work on asynchronous material anywhere but at the school. Kevin exemplified this description, as he was unable to access the asynchronous course content or the recorded synchronous lesson from home – along with not having much of the software necessary to complete his online work. Third, many of Kevin's learning habits were developed prior to his enrolment in an online course. As online learning shifts toward earlier grades, the recommendations made by Watson and Gemin (2008) and Slavin and Madden (1989) concerning the preparation of online learners should be considered when designing support systems for online students.

In this study, we examined the perceptions and habits of an at-risk student enrolled in an online course. Analysis of the interviews and video observations revealed that the student tended to do the minimal amount of work possible and counter intuitively worked hard to achieve this standard (as shown by his proficiency at prioritizing his efforts). However, his initial efforts often faded as individual class periods progressed. The student was also somewhat limited by the level of technology he had at home. Finally, he had a strong mental model for what an online student needed to do in order to be successful, although it was unclear how he saw himself in relation to this ideal.

While the data for this study were collected during the 2005-06 school year, it is still relevant to today's context. There has been little change in the instructional model used by this, and many other virtual schools, since the collection of this data (Barbour, M.K., 2011, Watson et al., 2010). Further, there continues to be an absence of research that focused upon lower performing students in the K-12 online learning environment (Barbour, M.K., 2009). It is for these reasons we feel the experiences of Kevin provide a useful contribution to the field. However, while we present this case study as an example of a larger population of at-risk students that have been largely ignored by researchers, it is indeed a single case study. Additional studies would help to confirm and expand our findings. Future research should focus on the support systems and how they help or fail to help students; if the students are utilizing those supports, and if they are not, what are the reasons for their failure to use those supports. Future research should also examine how to identify at-risk student behaviour in order to help students as soon as possible. Finally, future research should also explore the effects of programs that provide students with more limited and/or classroom-supported online learning opportunities in earlier grades.

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Appendix A

Semi-Structured Interview Guide for Interviews

Questions that were asked only during the first interview.

1. Could you tell me a little about yourself?

Probes

What grade are you in?

How old are you?

Where do you live?

2. Could you tell me about the web-based courses have you taken?

Probes

How many?

Over how long a period?

Which ones? When?

3. What is your work area like at home?

Probes

Do you have a computer?

Is it located where you do most of your homework?

Does it have access to the Internet?

Are you able to use all parts of WebCT from your home computer?

Are you able to use ELive from your home computer?

Do you share your home computer with someone else in the family?

4. Could you tell me a little about your school?

Probes

What kind of school is it (i.e., what grades does it include)?

Roughly how many students are in your school?

Questions that were asked only during the second interview.

1. Last interview we started with you telling me a little bit about you and your school, this time I'd like to start with some information about your habits and uses of technology. Can you describe for me the type of technology you use on a regular basis at home?

Probes

You mentioned last interview that you had a home computer, what kinds of things do you use it for?

Do you have a digital camera? How do you use it?

Do you have a cell phone? Do you use it to text message? To take pictures?

Do you have some form of game station at home? How often do you play? How much time do you average playing it per week?

Do you watch much television? How much time do you average watching it per week?

Do you read books? Magazines? Newspapers? The print versions or online?

Do you e-mail people that you have never met in person? Describe for me the relationship that you have with these people?

Do you instant message people that you have never met in person? Describe for me the relationship that you have with these people?

Questions asked during both interviews.

1. Think back to your last online class, what class was it? Describe for me what you did.

Probes

Did you take notes?

Did you talk to other students online?

Did you talk to other students in the room with you?

Did you do things other than pay attention to the Elluminate Live stuff?

Was this a typical online class?

If not, how was it different?

2. Think back to your last offline class, what class was it? Describe for me what you did.

Probes:

Where do you complete your work?

Where did you go?

Would you say you were working on your course for most of that class?

What percentage of time would you say you were on-task?

Was this a typical offline class?

If not, how was it different?

Where would you normally go?

Would you say you are working on your course for most of your offline classes?

What percentage of time would you say you are on-task?

3. Think about a time during the past month when you felt you learned a specific concept or process or mastered a specific skill. Describe it for me.

Probes:

What did you do first? Next?

What was the last thing you did before you figured it out?

What resources did you use?

Recorded Elluminate Live sessions

Course content in WebCT

Your own notes

Your textbook

Different sites on the world-wide web

Who did you seek help from?

Your e-teacher

An e-tutor

Other students in that class

Other students in your school

Teachers in your school

Your parents or relatives

4. What types of things in your web-based courses have you found to be helpful in your learning? Why?
5. If you could change something(s) about your web-based course, what would it (they) be?

Probes

Why?

6. Think of a lesson in WebCT that you have experienced that you think was particularly good or particularly effective in helping you learn the material. Describe that lesson for me.

Probes:

Why was it effective?

What type of multimedia components did it contain?

What was your reaction to the lesson?

7. Think of a lesson in WebCT that you think was particularly bad or particularly ineffective in helping you learn the material. Describe that lesson for me.

Probes:

Why was it ineffective?

What type of multimedia components did it contain?

What was your reaction to the lesson?

8. If you had to make one statement about designing the WebCT lessons for you, what would it be? Why?
9. If the CDLI were designing a manual that was going to be given to every person who designed courses for them and they asked you to include one piece of advice for these individuals, what would it be? Why?
10. Is there anything else about your CDLI classes that you'd like to tell me about?
11. Is there anything else about where you go to for help with your CDLI courses that you'd like to tell me about?

[1] In extracts from the interviews, the interviewer's comments are presented in italics and Kevin's comments in regular font.