Title: Hybrid Online Education: Identifying Integration Models using Adventure Learning

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Running Head: Hybrid Online Education Integration Models

Hybrid Online Education: Identifying Integration Models using Adventure Learning

Abstract

In this paper we sought to understand how teachers chose to integrate a hybrid online education program in their classrooms, how students responded to this choice, and how students' experiences were influenced by the integration model chosen by the teachers. Data collected via classroom observations, personal interviews, and focus groups suggest four integration models: curriculum-based, activities-based, standards-based, and media-based. We discuss these models in the context of hybrid online education and particularly in adventure learning. Finally, we provide recommendations for the design, development, implementation, and integration of hybrid online education programs.

Keywords: Adventure learning, classroom technology integration, hybrid education, integration models, online learning environments.

Hybrid Online Education: Identifying Integration Models using Adventure Learning

Alternative approaches to face-to-face education (namely hybrid and distance education), have been in existence since the late 1800s (McIsaac & Gunawardena, 2001; Moore & Kearsley, 1996) with these alternative approaches rapidly increasing in K-12 education (Smith, Clark, & Blomeyer, 2005). More recently, during the 2005-2006 academic year virtual K-12 schools served approximately 700,000 students in the United States (Picciano & Seaman, 2007). Even though the benefits of K-12 online and hybrid education have been delineated (Smith, Clark, & Blomeyer, 2005), the existing literature on online K-12 education, with a few exceptions, focuses on anecdotal accounts of technological resources that can be used by teachers to supplement face-to-face courses (Lombard, 2004; Martorella, 1997). Even more critical is the dearth of research in terms of how teachers actually integrate technology and online learning in their classrooms (Zhao, Pugh, Sheldon, & Byers, 2002).

Integrating Technology in the Classroom

Colleges of education in the United States have attempted to prepare preservice teachers to be able to integrate technology in their classrooms for decades (Strudler & Wetzel, 1999). However, preservice teachers appear to be unsuccessful in effectively and creatively integrating technology in their courses and projects (Doering, Hughes, & Huffman, 2003; Ertmer 2005; Kovalik, 2003), utilizing technology superficially and in uncreative ways in what can be termed lower-level instructional methods (Hokanson & Hooper, 2004). Furthermore, inservice teachers also appear to use technology in a similar fashion: For instance, Barron et al (2003) report that approximately half of the teachers in their large-scale study used technology as a communication tool.

The important difference between inservice and preservice teachers however, is that inservice teachers face immense barriers (Ertmer, 2005; Hew & Brush, 2007; Mishra & Koehler, 2006; Zhao et al., 2002, Dexter, Reidel, & Doering, 2006) in their attempts to integrate technology in their classrooms. Rather than quantifying technology integration, as previous studies have done, researchers need to investigate the ways technology has been integrated in the classroom (Barron et al., 2003), extending it into hybrid online education environments. Rather than asking how many teachers know how to use technology, researchers need to ask how technology is used in the curriculum, classroom, and schools. Such investigations may yield fruitful knowledge as to how teachers decide to use the technology available to them, which in turn may help researchers understand the factors driving technology use, or lack thereof.

Investigations of how teachers choose to integrate technology their classroom are minimal (Zhao et al., 2002). In a recent study, Zhao (2007) describes how teachers' technology use falls along a spectrum of teacher- to student-centered methods with teachers in his sample integrating technology in an (a) efficiency oriented manner (where technology was used as a tool to enhance information recording and retrieval), (b) enhancement-oriented manner (where technology was used to enhance learning and teaching), and (c) "relaxation" oriented manner (where technology was used as a way to motivate and give "breaks" to students). Barron et al. (2003) note two large-scale technology integration initiatives that have yielded similar results in terms of the process teachers go through when attempting to adopt and integrate technology in their classroom: The Apple Classrooms of Tomorrow project (Apple, 2007) and the Level of Technology Implementation scale (Moersch, 2007). These projects note similar phases of technology adoption and integration with lower phases focusing on non-use or basic technology use, and higher phases focusing on more creative, student-centered, and diverse uses. In a similar

vein, Hughes (2005) notes three categories of technology use in the classroom (i.e. replacement, amplification, transformation), with each successive category being more innovative and student-centered than prior ones. The theory and evidence therefore, indicate that teachers integrate technology in varied levels in their classrooms. These initiatives may or may not go through maturation phases. Teachers may simply integrate technology in their classroom as a replacement tool (e.g. requiring students to submit homework assignments electronically rather than on printed paper). Or, they may initially use technological tools in their classrooms in rather superficial ways, and over time, move towards more creative and student-centered uses. This research illustrates that integrating technology in the classroom is a dynamic and multi-faceted endeavor that is highly contextual and complex.

Adventure Learning in the Classroom

Our research is situated in the work of an online hybrid adventure learning program entitled GoNorth!. This hybrid online learning program is a non-commercial free program available to any teacher throughout the world. Much like GoNorth!, there are numerous other online learning programs focused around adventure such as BlueZones (http://www.bluezones.com), the Jason Project (http://www.jason.org), and Journey North (http://www.learner.org/jnorth/). Our work on the GoNorth! project informs practice on any hybrid or completely online learning programs grounded in inquiry- and experiential-based learning. Adventure Learning (AL) is a hybrid distance education approach that provides students with opportunities to explore real-world issues through authentic learning experiences within collaborative learning environments (Doering, 2006; Doering, 2007; Doering & Veletsianos, in press). AL is grounded in two major theoretical approaches to learning—experiential learning (Kolb, 1984) and inquiry-based learning (Bransford, Brown, and Cocking

1999; National Research Council 1999). The AL approach to design, development, and ultimately learning is based upon the understanding that experience rather than osmosis guides meaningful learning experiences. Within the GoNorth! AL program students identify and pose questions as they are faced with real-world problems, analyze data, interact and collaborate with colleagues and experts, and take action within their own community.

Specifically, this hybrid approach includes a free K-12 curriculum designed with activities that work in conjunction with the travels of Team GoNorth!, who annually dogsled throughout circumpolar Arctic regions. The all-inclusive curriculum (Doering, Hughes, & Scharber, 2007), the travel experiences and observations of Team GoNorth!, and the online learning environment are delivered concomitantly so students are able to make connections among what is happening in the real world, their studies, and the collaboration and interaction within the online learning environment. Adventure learning projects to-date include Arctic Transect 2004 (http://www.polarhusky.com/2004), GoNorth! Arctic National Wildlife Refuge 2006 (http://www.polarhusky.com/2006), GoNorth! Chukotka 2007 (http://www.polarhusky.com/2007), and most recently GoNorth! Fennoscandia 2008 (http://www.polarhusky.com). Annually, each project had over three million students participate in the program worldwide.

Technology and Adventure Learning Integration: A Design View

To understand why we need to investigate how teachers integrate technology in their classrooms and lessons, we ask you, the reader, to pause for a minute and peek into your email inbox. How many emails are in your inbox folder on any given day? Chances are, *your* inbox, much like ours, is cluttered with emails. If you think about the emails that you keep in your inbox, you will quickly recognize that this is not just the location where you keep emails that you

have already read. For instance, your inbox also holds “to dos” and “to reads” (Whittaker and Sidner, 1996). When designers first started developing email systems, they conceived email as an asynchronous communication tool. They did not think about the possibility of email being used as a reminder list or document archiving mechanism. Actually, humans appear to be quite incapable of predicting the future (Gilbert, 2006), and thereby the future use of a tool (such as email).

This also holds true for education, learning, teaching, and technology integration. The realization that teaching and learning in the K-12 environment involves uncertainties, challenges, and unforeseen events, means that the actual use of educational materials is also difficult to predict, especially in the case where such educational materials are open-ended, involve debates, and are constructivist and problem-based in nature. This understanding raises two important questions for the design of technology-enhanced learning environments – 1) How do designers intend teachers to use a learning environment? and 2) How do teachers actually use the learning environment?

Informed with the realization that there may be a mismatch between the intended and actual use of hybrid online learning environments, our study focuses on teacher pedagogy and student experiences by asking the following questions:

- How do teachers integrate AL as a hybrid online education model in their classrooms?
- How does the technology integration model chosen by the teachers influence student responses and experiences to AL as a hybrid education model?

Research Methodology

Participants

This study is informed by 5 teachers and 123 students in 3 public elementary schools in a large Midwestern city. These individuals used the GoNorth! 2006 AL program in their 3rd, 4th, and 5th grade classrooms during the 2005-2006 academic year.

Data Sources

The data corpus informing this study consist of 12 classroom observations conducted over a period of 2 months, 11 focus groups with participating students, and 5 personal interviews with participating teachers.

Data Analysis

We used the constant comparative method (Glaser and Strauss, 1967) to analyze the available data and develop salient categories and patterns. Data were first analyzed independently by each author, noting emerging patterns. The authors then met six times to discuss their individual findings. At each meeting, the data were reanalyzed and triangulated across data sources in order to confirm and disconfirm evidence for the patterns. This process continued until consensus was reached between the authors.

Findings

Data revealed that the five teachers focused on four different integration approaches that differ markedly. We have defined these models as *curriculum-based, activities-based, standards-based,* and *media-based,* and we will discuss each in turn. Figure 1 presents the defining characteristics of each model.

--- INSERT FIGURE 1 HERE ---

Curriculum-Based Integration

Jen – A 2nd Year Social Studies Teacher. The AL curriculum was designed so teachers could use the program in a sequential manner, following the AL curriculum calendar

accordingly. Yet, only one teacher, Jen, used this approach. Jen, a second-year teacher, taught elementary social studies and learned about the AL program through a friend. She signed up for the program, immediately downloaded the curriculum, and read the "Teacher Guide" to understand how the program worked with the live field components, the curriculum, and the online learning environment. Jen believed it would be a perfect fit for her social studies classes as many of the same topics that were addressed in the AL curriculum were in her "regular" curriculum.

Using the AL program as written. Jen used the curriculum exactly as it was written, implementing it every school day. She commented, "Because I had never used a program like this before I decided I would just use it as it was written." Jen printed out the curriculum calendar and followed it as closely as possible. She felt her students learned more by following the way the curriculum was written than they could have from any curriculum or learning activity that she designed. Jen noted, "As you have seen, my students think this is the most amazing learning experience they have ever had. From the lesson activities to the online chats, collaboration areas, and things such as the dog zone, it is truly inspiring for me as a teacher." When Jen commented on her success in using the program, she said, "I felt I was very successful in using the program. I was worried about how to use a curriculum that was to be used online and in the classroom, but my students are talking about what they are learning outside of my classroom. I even have parents inquiring about the program." She continued, "I could also not ask for a better teaching environment to use a program like this. I literally can teach just about whatever I want as long as I meet some of our basic goals, which we definitely did. When you see students who want to go to polarhusky [the GoNorth! program] and beg to continue using it, I must be doing something right."

Curriculum-based integration scenarios. Jen used each module although she did not make it through every lesson. She always accomplished two lessons for each module and did not deter from the pedagogical guidelines that were written within the curriculum. She found that for the amount of time she had to prepare, and the success she was experiencing, there was no reason to change what she had been doing. Every Monday, Jen and her students would use the Smartboard™ in front of class to read through the trail report. The students would read the report and Jen would answer questions and comments as students made their way through the written text and media. Jen stated, "Monday's were always our favorite day. That's because it was when the trail reports were made available. Not only were my students excited about it, I was. I loved to read, see, and hear the progress of the team and it always amazed me how my students learned from it. They would remember stuff from the trail report weeks after we studied it." It would normally take two days to make it through the trail report before moving on to the next module lessons and the online chats. Jen's class never missed an online chat, which took place on Wednesdays or Thursdays depending on the week. It was a "highlight" of the program. Jen commented, "We always looked forward to the online chats. We would use the activities in the modules to prepare our questions and when our name appeared on the big screen, it was always a bunch of cheers."

Jen used the entire AL program participating in the collaborative areas of the online learning environment whenever she was able to get her students access to the computer lab. Jen noted, "I tried to get students online whenever possible and that was really the main barrier to the collaborative interactive areas as well as visiting the students' favorites such as the dog yard, the online games, and the weekly trail reports." Jen stated that she felt she was not doing "justice to the students or to the program" if she could not get online and use the interactive online features.

Jen said, “I would follow the curriculum and use as much as I could and still stay with the program and the GoNorth! team. The fast-paced interactive experience that is designed within the curriculum is what I loved and tried to follow.”

Curriculum-based student responses. The student focus groups revealed the students “loved” AL and wished that every class was taught using the AL model. The data revealed three themes about student experiences when using adventure learning in the classroom. These themes included: 1) experiencing new cultures, 2) exploring new information through authentic text and media, and 3) enhanced collaboration.

The students were “amazed” by their experiences learning about the Gwichin and Inupiat cultures, which were the focus of the Native lessons and contrasted with the Western perspective within the curriculum. Anthony said, “It is one thing to read about different cultures in a book, but to actually feel like we are experiencing them is another. The weekly trail reports made it real for me.” Jen said, “This is a very different type of learning. We can actually hear, see, and interact with different things about the cultures.” She continued, “I could watch an interview, walk around on the ice, and ask questions to the team that was there with the people. I don’t think anyone in our class really believed people relied on caribou for their food!”

All students interviewed commented on the real-time text and media of the AL program and how it changed the way they thought about culture and the lessons. Stewart commented, “It’s like learning about anything new, if we can really somehow understand that what we are being taught and what we read is real, it makes it so much easier for us to learn. The trail updates did this.” Jodie continued, “I think we all looked forward to Mondays to read the new [trail] update and the movies and sounds made it come alive.” The majority of the students noted that using the online features of the program motivated them to learn as it was “exciting, real, and

fun." Penelope said, "I loved going online because it helped us understand what the teacher was teaching. We would actually be able to see it all in action and be part of it." The authenticity of the text and media was further accentuated through the opportunities to learn through collaboration – the second most noted theme in the focus groups[i].

The students enjoyed posting their projects within the collaboration zone and participating in the online chats. Josh said, "I thought it was great to be able to see what other people were doing and then add our work to it. It made it fun and we also remember it much more than just reading about it." Sally continued, "I liked posting to the collaboration zones, but I also loved to see our questions be answered by the expert online. Whenever we saw our questions we cheered[ii]." As indicated by the heightened anticipation of collaboration opportunities, activities and events such as the collaboration zones and the expert chats, motivated the students throughout the week.

Activities-Based Integration

Marie and Jackie – Veteran 5th Grade Social Studies Teachers. Marie saw the AL program as a way to get "students actively involved in an authentic learning situation." She had been teaching for eight years, won numerous prestigious teaching awards, and heard about the AL program through her graduate courses. When Marie began using the program, the "student buzz" around the school enticed many teachers to inquire to Marie on how they could get involved. One of these teachers was Jackie, a confident third-year teacher who had never used an online education program. Therefore, Jackie collaborated with Marie, planning activities and curriculum goals, to integrate AL within her classroom.

Constructivist Learning with AL. Marie identified herself as a constructivist. She wanted her students to help make the decisions when it came to learning. She enjoyed "chaos" in the

classroom and saw AL as a program where student-led activities could guide the integration of the program. Marie identified the main themes of the AL program by glancing at the curriculum. She mainly focused on the online learning environment to get her students involved by collaborating with students worldwide. Likewise, Jackie chose curricular activities she thought students would enjoy while encouraging student-led activities within her classroom.

Activities-based integration scenarios. The learning environment Marie and Jackie created in their school was one of excitement. There was a feeling of competition between their two classes on whose activities would “make the most difference for the environment and get the greatest attention." During a module on climate change, Marie asked her students to brainstorm AL activities for the classroom and to share them with others in the online learning environment. Students came up with numerous ideas as Marie wrote them on the whiteboard. Ideas included making bracelets to sell and raise money to support the AL program, writing poems about the environment to bring attention to current environmental issues, developing a TV show about polar bears, and proposing a classroom-based game show. Thereafter, students were asked to develop a plan on how they would accomplish their idea and how it would be shared electronically via the collaboration zones. As part of this activity, students worked for two schooldays per week designing, developing and deciding how to share their idea within the online learning environment. Creativity characterized the results of this activity. For example, Jimmy and Jon decided they wanted to create a TV show and would produce it using iMovie. They produced a segment and then uploaded it to the collaboration zone so students throughout the world could see their work. Marie stated, “These students were motivated. They not only developed the set and the script, they had it all figured out: Where the lights had to go and how it should be filmed. I think they know more about the Arctic and polar bears than all of us here!”

Jackie would turn to Marie for ideas on integrating the AL program. Although Jackie was not as "constructivist" in the way she ran her classroom, she would scaffold her students to prepare for the "big events" such as the "expert chats" and the "collaboration days." If the expert chat was on sustainable development, Jackie would prepare her students by brainstorming with them the types of "good questions" they could ask. On the chat day, the chat environment was projected in the front of the class and the students would tell Jackie what questions she should type. The students would subsequently read aloud the questions and answers being asked and answered from students throughout the world. When the questions they posed appeared on the screen, the entire class would break into cheers.

Activities-based student responses. The student focus groups revealed widespread enthusiasm for the AL program. The data revealed four themes about student experiences when AL was integrated in an activities-based fashion: 1) student motivation, 2) widespread collaboration, 3) local impact activities, and 4) parent involvement within the classroom.

All students stated they were more motivated to work and learn when they were taught with AL. They said they were motivated more than any other classroom activity because they were able to choose how they were going to best learn the content. Samantha said, "Ms. Anderson [Marie] allowed us to identify how we best wanted to learn about the Arctic and the different cultures and that was what was fun. We did stuff that we found exciting and I think that is why we remember it so well." Jake continued, "We wanted to make a TV show and Jill wanted to make bracelets. We just were able to do what we wanted as long as it could be posted online and Ms. Anderson believed it was a good idea."

Marie and Jackie valued collaboration. The opportunity to post projects online and collaborate with others motivated their students to return to the online environment and read

about and explore the current module topic. Sue commented, “It was fun to go online and see if anyone had commented on our project.” Frank said, “I just loved to do stuff that I like and can share with others. I wrote this poem about climate change and I was able to post it for others to see!” About 74% of the students noted that when given the opportunity to work with others or work on their own, they opted to work collaboratively.

Numerous students in both classes wanted to develop projects that made a local impact. The students wanted to bring attention to what they were learning and what “was happening to the environment.” Lauren said, “I really want people I know to do things that can make a difference. The polar bears are dying and no one seems to care.” Students developed fundraisers where the money went to local organizations that were making wise decision related to the environment. Jim said, “My mom and dad and I are going to try to walk more and drive less and use less water.”

The activities-based approach to learning with the AL program went beyond the classroom walls: Over 70% of the students engaged in some type of activity with their parents/guardians at home. These activities ranged from introducing others to the online learning environment, to participating in a local impact project, to engaging them in a conversation regarding how individuals can better learn about other cultures and global conditions. Phil commented, “I took my parents to the web site because I kept on talking about it and they wanted to see it. They thought it was very cool. I showed them my projects, the movies, and the photos.” Samantha said, “My mom is helping me make and sell bracelets, which we will sell to help the polar bears.”

Standards-Based Integration

Joel – a veteran teacher. Joel has been teaching at his current school for almost twenty years and has ready and open access to the computer lab. An enthusiastic and creative teacher, his colleagues consistently turned to him for ideas about integrating AL into the standards-driven culture in which they taught. His mixed-methods approach of directive and constructivist teaching led to a classroom that looked like it was prepared to go on an Arctic expedition. Even though Joe's colleagues recognized the exciting activities in his classroom, they didn't understand how one could use the AL program and still have his students consistently score exceptionally high on the state standards testing. At the end of the year the classroom was full of dogsleds the students had constructed, numerous pictures of the polarhuskies on the walls, trail mix food available at all times for an energy boost, and a tent at the back of the room representing Team GoNorth's tent.

Using the AL program to meet the standards and increase motivation. Joel mastered the use of the AL program to meet the state standards within his classroom. He knew the program components extremely well, and was very familiar with both the curriculum and the online learning environment. Joel had read the teacher's guide, studied the curriculum calendar, and spent time with the online learning environment to truly understand how he might be able to use the program to assist his students to meet the standards. Unlike other AL integrationists, Joel's use of the program did not diminish during state testing time. On the contrary, it increased, and students became extremely involved in all facets of the AL program while at the same time participating in the state's standards testing.

Standards-based integration scenarios. Joel was able to use the AL program to meet state standards requirements. He did not follow the curriculum exactly as it was written, but used its main components to prepare his students to take the tests. He reported that the class using AL

scored significantly higher than previous years' classes. During the four-month project Joel integrated the curriculum every Monday, Wednesday, and Friday. For example, he used the project on Mondays when the new trail reports were made available as he noticed that the students were motivated to read the reports. Joel said, "I never had to urge them or ask them to focus when they were reading the reports. They absolutely loved it. They would want to sign on and read what had happened during the previous week. They also loved to see how the dog they adopted was doing[iii]."

As the students sat in front of their individual computer, they would read the entire trail report for the week. After each paragraph, the students were asked to write one or two sentences about what they had learned from the paragraph. The week 10 trail report consisted of 4,700 words and 12 paragraphs and students were never tired of reading. Joel said, "I can't get [the students] to read more than a few paragraphs normally in a book and they just ate it up. They wanted to keep reading even after the bell!" Each trail report also included various media embedded within the text that helped describe the report. Although students wanted to immediately watch a movie or walk around in the 360^0 virtual reality movies, they were encouraged by Joel to wait until they read the entire report or were at the end of the class period. When Joel gave the students the go ahead, they dived into watching, hearing, and walking throughout the areas that they just read about in the text. Joel said, "It really came alive for the students. It wasn't dry, but real and authentic. This is how students should be learning. They were able to see and watch what they were just reading. It really makes my job so much easier!"

Joel also used AL to motivate his students. The students did numerous "constructivist-based" activities that kept the motivation high within the classroom. He said, "I feel lucky to be able to use a program like this. My students love the real-time authentic nature of it and are so

motivated by the events and the dogs. They feel like they are part of the team. So, to keep the motivation high, I do a bunch of constructivist-based activities mixed with some directive teaching." For example, Joel divided his class into teams that represented different kennels with a different name for each. The "kennels" would work together to read the trail reports, build a dog sled out of wood, and lead a recycling day. Joel continued, "My students wanted to build a dogsled, so I thought 'Why not?' We bought some wood and constructed it just like GoNorth's sleds. Then, we actually took it outside and the kids pulled it. It was quite unbelievable and quite motivational." Joel's students also decided to lead a fundraiser for Team GoNorth's next AL program. They raised $1,200 and invited the local media to the school when presenting the check to Team GoNorth!.

Standards-based student responses.

The student focus group data revealed three themes about student experiences when using AL in a standards-based integration model: 1) Motivation related to AL, 2) positive experiences with authentic text and media, and 3) experiences aligned with and extending beyond the curriculum.

All students interviewed stated they were more motivated to learn when using AL than any other experiences within their classroom. Tiffany said, "It was just so much fun. I adopted my dog, Sable, and I followed her throughout the entire year. I would read about her in the trail reports and I also made the picture of her in the hallway!" The data revealed students would spend time with the program both in and out of school. Angie said, "This is just so much fun compared to most other things we do. We just love to read about what is happening and it's fun to be able to do projects that help the environment. We should do this all year long!" The

students spoke at length about how they would share their projects with their parents at home and keep them "up-to-date" on what was happening in class.

Ninety-five percent of the students stated they looked forward to reading the trail reports throughout the week and especially on Monday. Sam said, "We all loved Mondays to see what had happened throughout the week on the trail. We would read and read and then explore the movies and sounds." Jenny said, "I loved being able to read the trail report and then click on the different text that would take us to the movies and photos. It was all so real and to think it was happening at the same time!"

Although the students created numerous projects that were not within the curriculum, such as the dogsled and Arctic books, they also enjoyed spending time with the curricular planned activities. Sue said, "We would work on the projects such as the dogsled, but we also spent a lot of time doing things such as reading the trail report, participating in the chats, and playing Wumpa [the online game]."

Media-Based Integration

Chris – a veteran teacher. Chris is a veteran teacher who has been at the same suburban public school for more than twenty years. He teaches 3rd and 4th grade, uses the computer lab daily for about one hour per day, and is "always looking for new ways to integrate technology" in his classes. Chris learned about the program through his teenage children and had asked them to show and explain the program to him so that he could use it in his classroom. He enthusiastically shared with us that he wants to "use materials as they relate to students' interests." In his view, students are interested and motivated by media. In line with this thinking, Chris utilized the abundance of media available within the AL program to engage his students.

Using the AL program for its media. The AL program depends on a large array of electronic media including audio, video, virtual reality movies, and hypertext. In addition, within the online learning environment, students can explore learning modules, play educational games, engage in interactive simulations, and navigate virtual maps of the region of travel. These, and a number of other media, were the focus of Chris' lessons – lessons that depended on students "exploring" the online learning environment and interacting with the media in largely unstructured and unguided activities.

Media-based integration scenarios. Even though a curriculum and lesson activities were provided to support and accompany the AL website, Chris' focus was on the media. To begin each lesson, Chris had his students visit the website. From there, students were supposed to interact with the website and the project, in what seemed to be an unstructured way to integrate the AL project in the classroom. For instance, Chris was not setting any goals that were to be attained by the end of the period, but was using the program for students to enjoy the "exciting and interactive media."

Media-based student responses. The dominating theme from the students in Chris' classroom was that the students enjoyed interacting with the media. The majority of our conversations with them revolved around the weekly audio updates, the virtual reality movies, Arctic photos, and the interactive portions of the AL online learning environment. Our data revealed that even though students indicated their motivation for the project, the way the AL project was integrated in their classroom merely allowed for a superficial understanding of the deeper issues surrounding AL.

Discussion

In this study we sought to understand how teachers chose to integrate a hybrid online education program in their classrooms, how students respond to this choice, and how students' experiences are influenced by this choice. The four integration models we have identified illuminate a number of noteworthy discussion points, which we discuss next.

One program, multiple integration strategies

Even though all teachers worked with the same hybrid online education program, each teacher interpreted and implemented the program differently. For example, one teacher focused on meeting the state standards while another focused on using the online learning environment to showcase photos and videos in his classroom. In line with our theorizing under the section entitled "Technology and Adventure Learning Integration: A Design View," the AL program was used in ways we did not envision. The multiple ways that the program was implemented can be attributed to a number of contextual and personal factors. Contextual factors that we observed in our study include access to technology and the presence of state standards. Personal factors that were evident in our discussions with both the teachers and the students include pre-understandings and pre-conceptions of the AL program, personal teacher goals, teaching philosophy, and teaching experience.

It's important to emphasize that teaching experience influenced pedagogy that diverted from the mainstream curriculum. Veteran teachers, unlike novice teachers, used the curriculum as a guide and not as a script to follow on a daily basis. For example, Joel adapted the AL curriculum to meet the state standards and his students' needs. He efficiently adapted the curriculum to meet what he perceived to be important within the school curriculum while still working within the AL program.

Multiple integration strategies, different student experiences

Not surprisingly, student experiences varied across integration models. Each teacher's integration model emphasized different goals, teaching methods, and strategies, instigating student experiences that were drastically different from each other. For instance, while one group of students attempted to involve their immediate family in their schoolwork, another group built a dogsled and led a fundraiser effort.

One experience that differed markedly across the models was the degree to which students collaborated with others. Although collaboration is at the heart of the adventure learning framework (Doering, 2006), students' collaborative experiences largely depended on teacher pedagogy. Specifically, the more constructivist and student-centered activities employed in the classroom, the greater the collaboration with other students. For instance, students in the activities-based integration model posted more of their work online and participated more frequently in the expert chat discussions than any other integration models' students.

Collaboration among teachers within the same school enhanced teacher and student participation and experiences

As Riedel et al. (2007) found when studying student motivation and adventure learning, the collaboration of teachers within the same building significantly enhanced teacher and student participation. The school buildings that had more than one teacher involved in the AL program resulted in greater student activities and student motivation as well as numerous school activities that motivated teachers and students alike. Ranging from group school activities such as "Arctic Day" where the students built and pulled their dog sleds, to a school-wide fundraising activity, collaboration and meaningful experiences were significantly impacted by multiple teachers participating in the program.

Specific online learning environment features were popular across integration model

Regardless of the integration model chosen and implemented by the teachers, specific features of the online environment were used in all classrooms. These were:

- The “trail reports” – the weekly trail updates from Team GoNorth!
- the “scrapbook” – the feature containing all AL media such as audio and virtual reality movies;
- the dog yard – the feature showcasing all the dogs from the polarhusky kennel;
- polarhusky A to Z – the feature highlighting the Arctic using every letter of the alphabet;
- and the online game “Wumpa’s World,” engaging students in the daily lives of the Inuit.

The authentic, real-time, and interactive aspects of these features appear to have motivated teachers and students alike to use and return to the environment on a regular basis. Yet, even though these features were used across all models, they were still used differently within each model.

Implications and Recommendations

We began this study by asking how do teachers integrate AL as a hybrid online education model in their classrooms, and how does the technology integration model influenced student responses and experiences to AL as a hybrid education model? To this end we learned that (a) teachers integrated the AL program in their classrooms in varied ways, (b) students reported different experiences under each integration model, (c) collaboration among teachers within the same school enhanced teacher and student participation and experiences, and (d) specific features of the online environment were used in all classrooms regardless of integration model. These lessons allow us to draw three implications for the design, development, implementation, and integration of AL environments in particular and hybrid online education programs in general.

Flexible curriculum and online learning environment

The AL curriculum and the online learning environment used in this study were flexible to accommodate the needs of every teacher who used them. Even though problem-based and collaborative in nature (Doering, 2006), both the curriculum and learning environment were flexible and multi-layered enough to be integrated in ways that aligned with each teacher's goals. Flexible learning materials are important because too often we see a dichotomy between the realities of the classroom and the demands of learning materials developed by researchers. If learning materials are not flexible enough to be adjusted to the contextual factors inherent in each classroom, then what remains are "showcase" environments (Kirschner, Strijbos, Kreijns, & Beers, 2004, pp. 48) that do nothing more than collect dust on shelves.

Support structures are important

We have known for some time now that cooperation is more effective than individualistic or competitive efforts (Johnson et al. 1981). This finding was also evident in our work with the five teachers. When teachers collaborate they can brainstorm, problem-solve, share success and failure stories, exchange lesson ideas, and support each others' endeavors. In the same way, students who collaborated most frequently with experts in the chat discussions were exposed to a greater knowledge base than if they had worked individually. It is important therefore, when designing and delivering hybrid online education programs, to emphasize the social aspects of a curriculum or learning environment. One way to do this is by paying special attention to the social affordances of a program. In other words, designers should readily evaluate those features of a curriculum or learning environment that are instrumental in determining if and how social collaboration and interaction within a program take place (Doering, Miller, and Veletsianos, in press).

Popular features of the learning environment

Naturally, a large-scale program has an abundance of features. Some of those, just like in the AL program presented in this paper, may be used more than others. In the situation where the program was implemented differently by teachers, the natural question to ask is: What are the aspects of these features that allowed their use across all four integration models? We hypothesized that it was their authentic, real-time, and interactive aspects, but a systematic investigation of such features is required to draw recommendations for future implementations. If designers and researchers examine the features of hybrid online education programs that are used most frequently by users, we may be able to reach an understanding of what are the specific aspects that motivate users to return to use a learning environment. We hope that other researchers will take up this endeavor in their own projects.

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Figure 1: Defining characteristics of the four integration models

Model	Foci	Pedagogy *	Curriculum Usage	OLE Usage
Curriculum-Based	• Teach curriculum as written • Little diversion from curricular pedagogy • Achieve curricular goals • Collaboration among students f2f and online	• Curricular activities and goals driven • Emphasizes both curriculum and OLE • Adjusted according to classroom context	High	Medium
Activities-Based	• Curricular themes used as pedagogical guide • Student-centered activities • Collaboration among students f2f and online	• Problem-based driven • Student-centered driven • Emphasizes collaboration within OLE • Adjusted according to classroom context	Medium	High
Standards-Based	• Meeting national and state standards • Adapt curriculum to meet standards • Student & teacher-centered activities • Collaboration among students f2f and online	• Curricular activities adapted to meet national and state standards • Emphasizes both curriculum and OLE	Medium	High
Media-Based	• Use program media asset • Class entertainment • Student motivation	• Program media assets driven • Teacher-centered driven	Low	Medium

* Pedagogies are not model specific

[i] The live trail reports were the most noted theme.
[ii] Questions were moderated and only a handful was answered by the expert.

[iii] The sled dogs that Team GoNorth! used during the expedition were highlighted within the "Dog Yard" of the online learning environment and each student had "adopted" their own for the entire spring semester