9-1-2007

Adventure Learning: Situating Learning in an Authentic Context

Aaron Doering

Adventure Learning: Situating Learning in an Authentic Context

All exhibits, tables and figures that have remained available have been included as additional content with their respective articles to be downloaded separately. Click here to return to the article page on NSUWorks and view the supplemental files.

Unfortunately, not all the supplemental files have survived until 2015 and some will be missing from the article pages. If you are an author in Innovate and would like to have your supplemental content included, please email the NSUWorks repository administrator at nsuworks@nova.edu.

Adventure Learning:
Situating Learning in an Authentic Context
by Aaron Doering

It is March 5, 2004. I and my five colleagues from the Arctic Transect team have been traveling across the Canadian Arctic via dogsled since December 31, 2003. As we approach Baker Lake, Nunavut, we have not seen anyone else in 73 days. Across the horizon a jumping light can be seen as a snowmobile approaches us. I am on the front sled, so I stop the team and ski over to the individual dismounting his machine. I extend my arm and say, "My name is Aaron Doering. You have no idea how excited I am to meet you." The Inuit Elder from Igloolik, Nunavut, replies, "I know who you are; I recognize your voice from the Internet."

Such was the reach of Arctic Transect 2004: An Educational Exploration of Nunavut (AT2004), an adventure learning program that connected 3,000,000 students around the world (Exhibit 1). A team of six educators and explorers traveled by dogsled from Yellowknife, Northwest Territories, Canada across the Nunavut, the newest territory in the Canadian Arctic, to their final destination at the north end of the Baffin Island, stopping at seven Inuit communities along the way (view map). Meanwhile, students from California to Australia, as well as students in numerous Inuit classrooms, participated virtually in this 3,000-mile dogsled expedition through an online classroom provided at the project Web site. The students were provided opportunities to collaborate with one another on learning projects designed around the expedition, while also interacting directly with subject matter experts, Nunavut community members, their own instructors. The program's K-12 multidisciplinary curriculum encompassed lessons ranging from social studies and science to physical education and language arts.

In what follows I will provide an introduction to adventure learning, an approach to ee-learning that served as the pedagogical framework of the AT2004 program. After outlining the theoretical dimensions of adventure learning and illustrating some of its practical implementations, I will draw upon the results of instructor surveys to delineate three key advantages of adventure learning in the context of K-12 education. Although this article will be of primary interest to teachers seeking to enhance student engagement with learning in the K-12 classroom, it may also have broader pedagogical implications for other sectors of education as well.

Adventure Learning: Pedagogy and Practice

From the Arctic to Africa, adventure learning (AL) is changing how students learn and teachers teach. AL provides students with opportunities to explore remote cultures and locations by fostering authentic learning experiences within a hybrid online environment; moreover, AL allows learners separated by distance and time to connect with one another while providing them access to resources and opportunities for interaction with the real world (Doering 2006).

AL is grounded in two major theoretical approaches to learning—experiential learning and inquiry-based learning. Experiential learning theory defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb 1984, 41). This grasping and transforming of experience is what AL strives to create within a virtual learning environment. AL is also anchored in an inquiry-based approach to learning, in which students' learning processes involve pursuing answers to their own questions rather than memorizing facts (Bransford, Brown, and Cocking 2002; National Research Council 1999). Both the curriculum and the online classroom are developed to foster students' abilities to inquire as Keys and Bryan (2001) define inquiry: ". . . identifying and posing questions, designing and conducting investigations, analyzing data and evidence, using models and explanations, and communicating findings" (121). Since Dewey (1938), numerous learning

theorists have argued for the importance of providing education that involves students in authentic or real-world experiences in which they engage in dialogue, take action, and reflect on possible outcomes (Kolb 1984; Rogers 1969). The union of experiential learning and inquiry-based learning becomes a reality in AL.

In keeping with these two perspectives, the design of AT2004 involved seven interdependent components that comprise the AL experience (Figure 1):

- a researched curriculum grounded in inquiry;
- collaboration and interaction opportunities between students, experts, peers, and content (Figure 2);
- utilization of the Internet for curriculum and learning environment delivery;
- enhancement of curriculum with media and text from the field delivered in a timely manner;
- synched learning opportunities with the AL curriculum;
- pedagogical guidelines of the curriculum and the online learning environment; and
- adventure-based education. (Doering 2006)

These components may be illustrated more fully in the distinctive features of the AT2004 program, which provided students with the opportunity to participate in their own AL experiences. In its technological design, the program offered a full range of communication features to support multiple forms of interaction between students, instructors, and team members. Each week on "education day," team members would work together to create multimedia-enhanced reports and other materials to be transmitted via satellite technology to the online site (Exhibit 2); these materials included such items as text-based trail updates, photographs, audio clips, video clips, and interactive movies that provided timely information regarding particular activities of the expedition. In turn, students accessing these materials could interact directly with expedition members through weekly team chat sessions (Exhibit 3), with academic experts through weekly expert chat sessions (Exhibit 4), and with one another through collaboration zones available via the project Web site (Exhibit 5). The program strengthened the essential links between experience, inquiry, and learning by using the full capabilities of the Internet and multimedia technologies.

At the same time, the AT2004 program also provided a pedagogical framework to help instructors incorporate this wealth of information into their educational settings. The framework was designed to foster learning activities appropriate to different age groups while allowing instructors sufficient freedom to select the components most compatible with their own pedagogy. In the initial stages of their planning, instructors received a free curriculum and activity guide containing instructional materials, discussion questions, and learning activities for ten distinct modules; instructors could incorporate all ten modules or select those most relevant to their particular curriculum needs (Exhibit 6). Moreover, each module was designed to support three levels of activity corresponding to different grade levels—experience (K-3), explore (4-8), and expand (9-12)—which instructors could likewise modify according to their own educational goals (Exhibit 7). Through these aspects of its design, the AT2004 program sought to achieve an effective balance between structure and flexibility that would ensure optimal integration of its materials in a variety of learning environments.

Designing for Engagement: Adventure Learning in the K-12 Classroom

A research study investigated how teachers used the hybrid distance-learning environment of AT2004 to determine the affordances of adventure learning in the K-12 classroom. That is, how did teachers facilitate the integration of the synched curriculum and the online classroom with their real-world classroom environments? Researchers asked participating educators to complete either a pre- and post-implementation survey or a single post-implementation survey. A sample of 109 users completed a pre-implementation survey; of those users, 41 also responded to a post-implementation survey describing how they had implemented AT2004. A second sample of 339 registered users who did not complete the pre-implementation survey responded to a post-implementation survey; 187 of these users also provided detailed implementation information. Researchers used a common set of questions for both post-implementation surveys and a combined data set was constructed, yielding a total of 228 respondents

who described implementation activities in 300 separate courses.

Additional qualitative data supplemented the survey data. Of the 109 users who responded to the initial pre-implementation online survey, 21 took part in a 15-minute telephone interview on their use and opinions of AT2004. This set of interviews included four teachers who taught special education students, one teacher who taught gifted students, five teachers who taught elementary students (K-5), seven teachers who taught junior high students (6-8), one high school teacher (9-12), two teachers who taught a combination of grade levels, and one district curriculum coordinator. By gathering information from both the surveys and the telephone interviews, researchers were able to construct more extensive profiles of how some teachers incorporated the AT2004 program within their courses and curricula ([Exhibit 8](#)). The survey data, phone interviews, and observation data were analyzed using a constant comparative method (Glaser and Strauss 1967) to identify salient categories and patterns. After sorting the data by participant, researchers read the data to identify patterns across individuals. Researchers then reread the data, identifying the three primary affordances most frequently noted by survey respondents.

Results: Affordances of an Adventure Learning Program

Online Dialogue and Collaboration Opportunities

Of the teachers participating in the surveys, 75% reported using the AT2004 program as a learning tool to allow students to interact with and experience a different culture. Teachers valued the numerous opportunities the students had to share their perspectives through project files. Students exchanged video and audio files, Microsoft Word documents, and Microsoft Powerpoint slides within the collaboration zones and during the weekly online chats. Teachers described the opportunities for their students to interact with other students, subject matter experts, and explorers beyond their classroom as the most important feature of the AT2004 experience. They reported that students were motivated to enter the online classroom frequently throughout the week, even without a prescribed assignment. The various modes of interaction kept the students motivated to use the online classroom, and the teachers observed that the students "were learning and they did not even know it." Tom reported that the AT2004 program gave his students a chance to share and discuss their learning. Sue, a sixth-grade teacher, reported, "The strength is that the children get to be in contact with the people with the greatest knowledge on the topic. That's not something that they would ordinarily experience in a regular social studies curriculum. It's presented in an exciting way and they feel more invested in it because they are more of a part of it." Debbie, a fifth-grade teacher, described her experience with the weekly expert chats and the collaboration zones within the online classroom:

We would plan to have all the students in the computer lab during the weekly chats or we would use the one computer in my classroom. The students completed the chat activities within the curriculum before they occurred so they knew what they wanted to ask. They were also very excited to see their name on the big screen speaking to the expert. Also, my students just loved posting the pictures of their dog in the Dog Zone and also sharing their culture projects. They like that it's interactive. It's fascinating for them.

Further, 80% of the teachers reported that their students were motivated to dialogue and collaborate with their peers on average 3-5 times per week. By providing students with such opportunities, the AT2004 program clearly fostered a process of experiential learning that in turn generated high levels of engagement with the subject matter.

Inquiry-Based Curriculum with Authentic Real-Time Content

As described earlier, the AT2004 curriculum was organized by three levels of inquiry: experience, explore, and expand. Each subsequent level required the student to investigate the issues in greater depth by exploring a wide range of resources and investigations; pedagogical approaches ranged from didactic to

constructivist. The curriculum's adaptability and integration with real-time content based on inquiry was identified as a major strength for successful integration by over 70% of the teachers. Mary described what she believed was most valuable in the curriculum as "the most important part of education—inquiry." She added, "I love this type of playful, hands-on, investigative approach with kids. I am standing back and not doing a thing while they are discovering. It is a program that kids can literally get their hands into." She continued, "I have such a diverse classroom and every single one of the children is capable of working with the program." Marcy, a second grade teacher reported, "It is just a different type of teaching. I am totally in favor of the approach that [adventure learning] is using. It is the constructivist approach, as opposed to what is sort of the classical education: this is what the textbook says, let's try to read it, memorize it, and regurgitate it. It is learning with real content that is happening in the real world!"

Six of the interviewed teachers said that the AT2004 curriculum supported their preferred approach to teaching. Twelve of the interviewed teachers stated that their teaching approach had become more constructivist and that they felt their students were more engaged as a result of the AT2004 curriculum. Bill, a district-wide technology specialist, commented that

…for the two teachers who are most involved, it certainly has not only changed their teaching style, it has changed their lives. It revitalized them and gave them an understanding of the fact that there can be more to this whole education process than what we let ourselves believe. They shared with the staff that this is what education is about: tying learning to the real world and doing it in a way that motivates not only the students, but also the teacher.

Teachers also noted that the curriculum's three levels of inquiry provided enough options for successful integration; they were able to pick and choose to integrate certain facets of the curriculum to either support or supplant their existing curriculum. Such integration was reported by 85% of the teachers who identified themselves as constructivists. Bill reported that one of these teachers had said that the AT2004 project had come along at just the right time, as she had wanted "to find something different." He described the project as "infectious" and said that teachers had worked nights and weekends to integrate selected portions of the curriculum. Jordan, a teacher of gifted students, reported connecting a series of lessons to the AT2004 project; for example, students completed a research project on a specific dog, experimented with the density and melting point of snow, studied the Inuit flag, and designed their own family flags (all of which were later made into one large quilt). Jordan said that the curriculum "would provide enrichment and a challenge for the type of students that I serve, which are the gifted population of kids, and it was enriching enough that it would hook them."

Motivation for Inquiry through Multiple Modes of Media

Over 80% of the participants mentioned that they believed their students were motivated by the multiple modes of authentic and real-time media offered by the program. Ruth said, "I think the different ways, such as the videos and audio and interviews, that students learn on the Web site are so great. I am just as excited about this as they are." She explained that the AT2004 learning environment, particularly the audio and video components, motivated her students, who "are immediately drawn to the video. They want to be able to see the movies. That's the first place that they'll go. Either that or they love going into the dog yard." When Nadia, a fifth grade teacher, asked her students about their favorite locations on the online classroom, students listed the photos, dog yard, interactive map, and audio trail updates, while also expressing their strong interest in "reading about what's happening." The multiple modes in which the data were presented motivated students to investigate the content through varied lenses, which in turn motivated the teachers, who were excited to see their students take the initiative to enter the online classroom.

Conclusion

This paper has described an adventure learning experience, a hybrid approach to online education, and identified three affordances it provided within K-12 classrooms: (1) online dialogue and collaboration opportunities, (2) inquiry-based curriculum with authentic real-time content, and (3) motivation for inquiry through multiple modes of media. The promise of AL is that it can change the traditional classroom by providing access to and the opportunity to interact with authentic data, content, people, and real-world situations. It is an engaging model for situating learning in an authentic context while effectively using technologies to enhance learning opportunities. AL means that learning is no longer confined within the classroom walls, but extends to millions of fellow learners and experts sharing a real-world experience.

Further adventure learning opportunities will be available for K-12 educators as we continue to pursue this initiative in new directions. GoNorth! is an adventure learning series that uses the Arctic as the blackboard to educate students throughout the world. As the first ever circumpolar Arctic curriculum, it provides an education about the Arctic region and gives students the opportunity to see how their actions are affecting this and other regions of the world. Since 2004 we have completed two additional adventure learning expeditions—Go North! Arctic National Wildlife Refuge 2006 and most recently, GoNorth! Chukotka 2007. Over the five-year span of the GoNorth! project we plan to conduct a series of such expeditions, during which we will continue to be accompanied by K-12 classrooms linked through online learning environments (Exhibit 9).

Adventure learning has the potential to revitalize K-12 education as both students and teachers are motivated to learn from the authentic and real-time appeal of such an environment and curriculum. Adventure learning does not have to take place in remote locations; it can also have a positive impact on other educational sectors, such as virtual learning in higher education. The potential of bringing AL into content areas ranging from business to archaeology holds great promise. Students will be able to experience the life of a CEO or participate in the most recent archaeological dig, interacting with experts and peers throughout the world without leaving their classroom. Successfully implementing AL will require a rethinking of how we write our curriculum and design online learning environments, but the AT2004 model suggests that AL offers much promise.

References

Bransford, J. D., A. L. Brown, and R. R. Cocking, eds. 2002. *How people learn: Brain, mind, experience, and school.* Washington, DC: National Academy Press.

Dewey, J. 1938. *Experience and education.* New York: Macmillan.

Doering, A. 2006. Adventure learning: Transformative hybrid online education. *Distance Education* 27 (2).

Glaser, B., and A. L. Strauss. 1967. *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine De Gruyter.

Keys, C. W., and L. A. Bryan. 2001. Co-constructing inquiry-based science with teachers: Essential research for lasting reform. *Journal of Research in Science Teaching* 38:631-645.

Kolb, D. A. 1984. *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs, NJ: Prentice Hall.

National Research Council. 1999. *Designing mathematics or science curriculum programs: A guide for using mathematics and science education standards.* Washington, DC: National Academy Press.

Rogers, C. R. 1969. *Freedom to learn.* Columbus, OH: Merrill.

COPYRIGHT AND CITATION INFORMATION FOR THIS ARTICLE