

# Watch Out for the W/HOLE! Student Multimedia Projects and Culturally Based Education

**Tish Scott**

*University of Victoria*

---

*This inquiry explored community members' perceptions of education and how this connected with student-produced multimedia technology projects. The projects are examples of Culturally Based Education (CBE) programming from a grade 6/7 class located in a remote northwestern Canadian First Nations village. In this qualitative case study, themes of achievement and level of educational attainment, employability, and culture emerged from analysis of open-ended interviews with community members, community presentations, and meetings. CBE initiatives such as the student technology projects that are community-based and culturally relevant provide opportunities for the education and health of the whole child to be integrated and connected.*

My mother said, "On the road where we walk, there's a hole there. There's dangers if you don't watch what you do with your life. You gonna run into this hole and there'll be no end for it."

And what does that mean to us? We thought we just gonna fall through the sidewalk, boardwalk and we'll climb out again. No.

That hole is a graveyard like, or any accidents might have happened. You gotta learn. Find means and ways how to protect yourself and what to do.

"Some day, you gonna be on your own. And remember, if you have children, take care of them," is what my mother said. "Take care of them. Th'each are little angels God has given you, that you're gonna have, your family." (Interview excerpt, Alf)

The hole, then, is a doorway, an opening, an opportunity. It is also an exit, an escape, an ending. The hole can also be thought of as a circle. Fixico (2003) writes about American Indian circular philosophy and how everything is interconnected, cyclical, circular. "Within the circle of life, a continual effort for balance is the purpose for individuals and communities" (p. 48). Notions of health and well-being and education often overlook the whole person. One could say that there are holes in our practice. As educators, researchers, and citizens, we are aware of a need for balance in our lives, yet somehow we forget to achieve it—often we do not even attempt to.

This article centers on a qualitative case study that explores community members' observations and perceptions of student-produced multimedia technology projects. The projects and the study endeavor to look at the whole community, one that includes the culture and world view of the people involved, not only that of the dominant Eurocentric one. The

student work is community-based and embedded in the First Nations culture of a remote northwestern British Columbian village. It is an example of how collaborative, intergenerational, community-based projects can contribute to and enhance the potential for healthy Indigenous communities.

Participants in the study express strong support for Culturally Based Education (CBE) programming, specifically programs that use technology in innovative ways to support culturally relevant community-based educational initiatives as well as to create resource materials. They also make connections between the research, production, and presentation of students' technology projects and overall health.

It has been well documented that one of the critical social factors found to affect health is that of control (Tsey, 2003; Kirmayer, Brass, & Tait, 2000; NAHO Policy Research Unit, 2003), which refers to the amount of control people have over their own lives as well as to the network of supportive relationships they have that protect them from isolation and disconnection. These projects provided openings and opportunities for community members and students to choose, take, and have control over both the research direction and the format that the student technology projects would take. In the process of engaging in these projects, they attend to the whole health of individuals and communities.

### *Community*

The boardwalk in the opening interview excerpt refers to the walkways lining the waterfront streets of Alf's childhood village. Alf's mother and his family lived in a tiny isolated First Nations village at the mouth of a fairly large river. The village was established as an Anglican missionary village that later became the local Indian reserve. The people were governed by the Indian Act and had as their warden an Indian agent (who was generally not Indian). They lived a subsistence lifestyle, fishing and hunting in season. The missionaries "civilized" them. Both Alf and his wife "missed" going to residential school because they had to look after their families; Alf fished, his wife tended her eight younger siblings (her older sister went to school). Life was full of dangers, physical and emotional. Many many people fell down holes. They are still struggling to get out.

Today the population is approximately 300, and numerous people continue to lead a semi-subsistence lifestyle. The village has two convenience stores, a health clinic (under the control of their First Nation), a school (in a school district entirely dedicated to their First Nation), an adult education center in the education branch of the local village government, two churches, a large community hall and recreation facility, a fish hatchery, a carving shed, and a new longhouse, as well as several bed and breakfasts and small local businesses (largely arts- and tourism-oriented).

### *Students*

Students in grades 6 and 7 researched and created multimedia technology projects, integrating new technologies into a culturally based project. Although the students are also part of the community, they are identified separately because they are the producers of the technology presentations about which other community members are interviewed in this study. The group is small: 14 (7 boys and 7 girls) in total, ranging from ages 11 to 13. Most grew up in the village. Four have lived in larger centers, and all have at least visited outside Western cities. One student understands and speaks her language, whereas the rest understand and speak bits and pieces. That student lives in a home where the language is spoken and used regularly (by grandparents who did not attend residential school). All the students belong to a school-based drumming and singing group along with the younger grade 4s and 5s. As well, they receive separate language and culture instruction 30 minutes daily. Students take part in community cultural events as they occur and as their house and tribe require. The project on which this study is based was accomplished in the school and incorporated language arts, social studies, technology, and second-language curricula.

### *Students' Multimedia Technology Projects*

The students' technology projects themselves were a culmination of research and field trips carried out over a period of a few months in the spring of 2003. They focused on various features of a treaty agreement made with their nation. Students learned about some of the historical aspects of the treaty and then interviewed an Elder about an area that interested them. Based on these interviews as well as classroom presentations, learning simulations, and field trips, students created short multimedia pieces to present to the community. One group produced a video on lands and resources, and another looked at schooling and education. Another group made a comic strip done as a PowerPoint presentation that identifies some of the effects of the Indian Act as well as pre- and post-treaty life. Individual essays and interviews were narrated and made into slide shows with a combination of archival images and digital photographs taken by students. Some students created posters showing how people lived before and after the treaty and made a slide show accompanied by a soundtrack of themselves giving their thoughts about some of the changes that have occurred for their people.

In developing their interview questions for Celia, an Elder who also participated in this study, students struggled with the idea that schooling was so different for her. As they videotaped her and started their interview, they were amazed to learn about the residential school she was sent to in the Lower Mainland so far from their home village. They were interested in her descriptions of the village and life in it as she grew up 70 years ago. As a result, this group of students chose to do further research

and make posters of life before, during, and after the Indian Act and signing of the treaty as a way to look at some of the changes and opportunities in their village over time. They then took digital pictures of each part of their posters and created narrated slide shows.

All the student work was brought together for a *Celebration of Learning* presentation to the community. The other intermediate class presented their Web pages of a project on cedar bark harvesting and weaving. Samples of student work from the whole school graced the walls, bulletin boards, and tables in the hall, and the community came together to share in the presentation of projects that had been completed throughout the school year. After the multimedia presentations, all those who had participated were thanked and given tokens of appreciation. The floor was opened for community members to speak about the work they had seen.

### *Methodology*

#### *Conceptual Framework*

Culturally Based Education (CBE) is defined as having six critical elements:

1. *Recognition* and use of Native [North] American ... languages.
2. Pedagogy that *stresses traditional cultural characteristics*, and adult-child interactions.
3. Pedagogy in which teaching strategies are *congruent with the traditional culture* and ways of knowing and learning.
4. Curriculum that is *based on traditional culture* and that recognizes the importance of Native spirituality.
5. Strong Native *community participation* (including parents, Elders, other community resources) in educating children and in the planning and operation of school activities.
6. Knowledge and use of the social and political *mores of the community*. (Demmert & Towner, 2003)

The process and production of the student technology projects contains them all. Associated theories emphasize the notion that education is more likely to result in academic success or achievement when it builds on experience, values, and knowledge of students and their families in their own lives and communities.

#### *Rationale for the Study*

The rationale for my approach both to the student project and the research study itself is based fundamentally in the concepts of Indigenous input into and control over Indigenous education. This is a recurrent theme in the literature on First Nations and Aboriginal education (Battiste, 2000; Deyhle & Swisher, 1997; Lipka, 2002). The researcher, therefore, is a part of the community and accountable to that community. The research by definition is collaborative. A case study approach allows the researcher to

respect and involve the community in the research process of exploring the responses to student technology projects.

This inquiry developed specifically from a hands-on totem pole carving and multimedia project ([www.gingolx.ca](http://www.gingolx.ca)) done in the first year of the teacher/researcher's stay in and relationship with the village and community. More generally, it came from a lifetime passion for learning and teaching in ways that are meaningful, interesting, and participatory. The topic for the projects came from a community member who had been watching and observing the students as they worked on the totem pole project. He wondered if we could not do something like this on the treaty and said that it was important for people to learn about and understand it better. The research study was a way to find out whether the culturally based educational approach taken with the student multimedia projects was effective from the community's perspective.

### *Setting and Participants*

This study focused on a cross-section of people (Elders; parents; family members; representatives and/or staff from elementary junior secondary school, school district, Aboriginal head start, adult education, health clinic, village government, media center) from a rural First Nations village of about 300 people situated in northwestern British Columbia. Community members were invited to participate voluntarily and were selected by their agreement and initial availability. Community notices were posted and several Citizens' Band (CB) radio announcements were made notifying potential participants of the various activities, specifically the *Celebration of Learning* community presentation meeting.

### *Data Collection*

Data were collected from several sources for this study.

1. Open-ended interviews were conducted with 25 adults and videotaped in May and again in June through August of 2003, following the student presentations. Several people agreed to be interviewed in small groups (families, friends, co-workers).
2. First Nations' community meeting speeches were videotaped on June 18, 2003 at the student presentation *A Celebration of Learning*. Following traditional protocol, an explanation was given about the procedure and purpose of the discussion and a specific request for suggestions for improvement was issued.
3. Journal entries and self-reflection notes.
4. Student technology projects.
5. Oral history interviews with Elders and community members conducted by students as part of their projects.

### *Data Analysis*

All data were partly or fully transcribed into Microsoft Word. Preliminary analyses were used to generate categories, themes, and patterns from the first set of interviews. Open coding (Flick, 1998) was used to develop and express data in the form of concepts. For example, study participants spoke about what they would like children to be learning, and they spoke about education in terms of knowing how to prepare traditional foods (sea lion, oolichan, salmon, soap berries), what to do and how to behave at certain kinds of feasts (stone moving, memorial), and how to perform (as well as knowing when and why) traditional songs and dances. Axial coding further refined and differentiated these preliminary concepts and categories into cultural practices, cultural knowledge, and awareness of culture. The data were repeatedly reviewed for patterns and relations between the categories. Selective coding was used to come up with the theme of culture. Evidence and connections to the categories and themes that had emerged from the initial interviews were looked for in follow-up interviews and the community presentation. To check the soundness of the interpretations and test the utility of emerging analytic categories, initial findings were presented in December 2003 to nine study participants, one student producer of a technology project, and six other community members for comment, clarification, and suggestions.

### *Ethical and Political Considerations*

To explore the research question in the village, I obtained written permission from all participants as well as oral permission from the village government and Elders' Committee. Because the topic for the project had initially come from community members, this was considered appropriate in this case. Students were asked for their permission to use their final projects as community resources before they started the projects. Ethics approval was obtained from the University of Victoria Ethics Committee.

### *Findings*

Although health issues were not the focus of interview questions, study participants brought up physical, spiritual, and mental health concerns that they considered integral to the education of their children. Community members looked beyond schooling to discuss education that educates the whole person. When asked about the importance and purpose of education, the main themes that emerged from open-ended participant interviews were: achievement and level of educational attainment, employability, and culture. Participants' experience of and with the student multimedia technology projects were reflected in their responses and comments from community presentations and open-ended follow-up interviews (sample question: What do you think of the technology projects the students presented?), which were connected to these three themes.



*Achievement and Level of Educational Attainment*

Community members want their children to complete school and continue into postsecondary education. "Try not to quit, it's hard to get back into it" (interview excerpt, Ron). Community members see this as a way to survive in an increasingly complex society and world. "Education is important for survival. You/we can't depend on handouts" (interview excerpt, Nel). Education is not only spoken of as a way for children to succeed outside the village, there is also a need for university- and college-educated people in the nation. They express a strong desire for their own children to be trained and hired for work in their lands "Especially here, now, after the Treaty. They're looking for qualified people. Things that hang on the wall, those certificates" (interview excerpt, Nel). Mac suggests that the reason the young people think those degrees and pieces of paper are so important is because they do not know their own culture. He claims that assimilation did work. However, he remains optimistic and is actively involved in teaching the language and culture to others. Participants agree that education must prepare children for life outside the village communities as well as for life inside on the lands of the people.

One participant discusses some of the problems students have in completing school and uses his own son as an example. The support they have been able to give him does not seem to be helping. He refers to child abuse and the need for counseling for children right in the school, always there. Then he relates the current situation for young people to that of people like himself who suffered similar trauma at residential schools. He says that kids cannot get through these kinds of issues on their own and that they need help. He adds that they can make it through to about grade 12 and then they turn to alcohol and drugs. He goes on to talk about how different it might have been had counseling been available to him at a young age.

Several student technology projects were completed in 2003, all of which had a hands-on component (traditional and contemporary technology) that involved Elders, community members, and experts in the field, as well as a community presentation. Study participants responded to the questions on student technology projects having seen or been involved with one or more of these projects.

Responding to a question about how using technology influences student learning, study participants said,

It makes it more interesting for them to learn. They see what they're doing. The finished project. They can go back and look at it and see what they've done. That way, they learn more. It's easier for them to understand once they go through it [the project] themselves. (Interview excerpt, Cam)

A neat, new way to learn. (Interview excerpt, Cynthia)

It incorporates many facets of their learning in a practical way so that they have something they can show others and so that rather than just one aspect ... it brings in all their learning and it shows it in a practical manner in an area that is important to themselves as well as their family members. (Interview excerpt, Matthew)

These comments focus on knowledge and learning as well as the motivation to learn. The notion of reviewing and reflecting on their learning is inherent in the process of creating and producing these student technology projects. Trina brings in the use of perspective as well as how individual learning levels can be incorporated by using technology.

With them having to do that [project process, review, reflection], it's at their learning level. Maybe others have the same learning level. [They can] see through someone else's eyes that are just learning it too. (Interview excerpt)

Using technology in these ways allows for a wide range of abilities and understandings. Trina suggests that it is not only the students who may have differing levels of understanding, but that these projects help others to learn too. A recursive and reflective style of learning engaging students wholeheartedly in the process is facilitated by how technology is brought into play. In *A Post-Modern Perspective on Curriculum*, Doll (1993) writes,

Primary, doing experiences need not stand alone; they can serve as the basis for secondary, reflective, indeed self-organizing experiences. Every completed action can serve as a new beginning, as the springboard for new and open "ends-in-view." (p. 118)

Multimedia technologies serve as a means for just such a new beginning, and as Trina adds, they "reinforce what students are learning and allow them to want to learn more" (interview excerpt).

Both Cynthia and Lee talk further about how the students really got into, liked, and were excited by doing the projects. They attribute this to "getting to use the equipment" as well as being involved in interviewing, learning simulations, field trips, and other activities related to the topic. Doug agrees, saying that it helps the students to get out and do something. Again, using technology is seen as a source of motivation, as is the hands-on participatory nature of the projects. It seems obvious that if students are involved and engaged in learning that is interesting to them and their community, there is a greater likelihood that they will be motivated to continue with their education.

### *Employability*

Connected to the idea of completing school is the importance given to the role of education for the future. Jobs, careers, and employment are cited as a vital part of education. "For today's job entries, you need at least college, not just grade 12" (interview excerpt, Nel). This refers to education that prepares students for work that already exists as well as for new opportunities involving an entrepreneurial approach to job creation. "We've got to find ways and means to create jobs ourselves" and to "keep our people working" as well as, "This village has a lot of potential of creating jobs" (interview excerpt, Doug). "It's a requirement now for tourists to buy our traditional things we make—poles, clothing, baskets, whatever. I'd like to encourage that" (interview excerpt, Chuck). The potential to increase



employment and reduce poverty is perceived as much greater than in the past.

At the elementary school level, it is difficult to determine the probability or rate of high school graduation and future employability. Community members do, however, have a sense of the influence that the work students are doing is having in these areas.

I see a lot of improvement in what they're doing in the line of technology.... In future, once they've got it [technology skills], they won't have a hard time finding a job. (Interview excerpt, Doug)

Doug says that this is one of the main benefits of these projects. Matthew concurs, adding that the technical skills are beneficial both to the students and the community. He also emphasized that the students,

start to see how learning is interrelated, different aspects of different subjects of different courses all play together—they're not individual bits of knowledge. (Interview excerpt)

### *Culture*

In this community, education and culture are as one. They are inextricably bound together and do not exist separately. This is apparent from responses to the question asking about what is important in education.

Education is going to school, learning all the new technology PLUS learning your own culture. (Interview excerpt, Trina)

Whatever a person values. The culture. (Interview excerpt, Marie)

What we do in the communities. Learning from the Elders. (Interview excerpt, Steve)

Learning to know the culture is deemed essential. At an individual level, it provides a way to "find their roots" (interview excerpt, Ron) and to "learn about the things we believe in that makes us who we are" (interview excerpt, Cynthia). For community members, the culture teaches everyone how to live together properly as a community and to help each other. No one is alone. This is the culture. The tribal system functions on the basis of interconnected tribes, houses, and families, each of which has specific roles and jobs to perform in society so that everything functions smoothly and efficiently to take care of everybody. This network extends to the wider community of the nation as well as to other First Nations people.

As education is bound to culture, so too is language. Every person who participated in the study spoke strongly about his or her language and culture. One person said (she was uncomfortable and almost apologetic) that she herself could survive without being fluent in the language although she does want it to be taught in school and thinks it should be used more. Everyone else spoke about the need for language revival.

While discussing how to go about learning the language and reviving the culture, Ron exclaimed,

How we lost it—it hurts us. We lost probably about two generations of it, our culture, just by taking us out of our homes, our own villages and sending us to the white man's world,

and trying to learn their culture. Within the seven-year span, they did a good job of taking the culture away from us, which we're having a hard time to revive now. (Interview excerpt)

Celia, an Elder, talks about her own children.

I don't know how it came to us to speak English to them—it just happened. All the kids went to school and when they came back, it was just so natural for us to use the white man's language. Then our language finally faded away ... but it's coming back now. (Interview excerpt)

The meaning of the language as well as fluency concerns most participants. Many are not fluent themselves. To help them become more conversant in the language, they have recommended a number of approaches including daily language classes at the Adult Education Center. However, as Ward says, I have to "put more effort into it ... more or less. That's just all there is, just putting more effort into it ... individually" (interview excerpt). The notion of personal responsibility resonates strongly in the interviews. There is also an expectation that the school has a large responsibility for language and ought to be hiring fluent language teachers. Several people referred to other cultures' use of their own languages and put them up as good models for use (e.g., Gitksan people, Asian groups, etc.). Cynthia dreams of an immersion school and believes that there is a need for daily language use to avoid losing it. Doug concurs, saying that language immersion is critical to the revival and survival of the culture. He suggests 100% language immersion in school from kindergarten to grade 4.

As language is connected to culture, so too is traditional food preparation. Smokehouses dot the village as do *ganee'e*, ladder-like hanging rack contraptions covered by netting to keep the birds off the fish drying in the sun. Whatever is in season and is caught is used (salmon, halibut, oolichan, sea lion, seal, deer, moose, bear). Canning and freezing are other food preservation methods. Some, such as freezing, are more contemporary although still based on traditional preparation techniques. Village chiefs and their crews render oolichan grease at a fish camp up the river. It is a highly valued commodity both for domestic use and as a trade item with other Aboriginal communities. Tea leaves and berries are also gathered and dried or canned for later use. Families work together to put away enough to last through the long winter for themselves, their extended families both in and out of the village (i.e., urban dwellers), as well as making contributions toward filling the homes of village Elders. These aspects of the culture are significant to community members, and some people lack this information and wish for themselves and their children to have this cultural knowledge.

Preparation of traditional foods is linked to the concept of survival and independence, both physical and economical. As community members prepare healthy, nutritious foods harvested from the sea and the land, they are taking care of themselves on their terms. No one is looking for or

receiving handouts. Life in community is about helping each other. On a global scale, if there is international turmoil or war, these people will survive. They have the knowledge and skills to look after themselves and want their children to learn and know these things too.

Traditionally prepared food is both a mainstay and a specialty. Although daily survival is important, specially prepared foods are always featured at feasts. Feasts are held for a variety of reasons (deaths, memorials, stone movings, weddings), all of which involve carrying out the business of the community. Study participants are resolute in their desire for all children, in fact all community members, to know everything they can about all the various kinds of feasts. They would like everyone to attend all the functions and take part in tribal and house meetings so that they know and can learn about their role in the proceedings. Children and adults are encouraged to ask questions if they do not understand what is going on or why things are done a certain way.

Community members want their children to learn about and connect to traditional and cultural dancing, which is a characteristic and highlight of many feasts. Lewis passionately identifies culture with

[First Nation] dancing—that I love so much. It soothes the body. Once you finish one of these sessions, it's so uplifting—it feels like everything came out of you, your anger, your stress. By going into dancing, that's part of our culture, our grandparents used to do it and they said the same things themselves, it uplifts them. (Interview excerpt)

Students and adults learn to drum, dance, and sing traditional and contemporary songs that they share and perform at various events (feasts, presentations, performances, pole raisings, blessings). It is central to the community way of life and sense of community. Physical health—nutrition and activity, as well as spiritual and emotional well-being—is encompassed in the culture. For many people belonging to this First Nation, togetherness, support, and sense of community are the essence of their culture. It keeps them whole, encircling and embracing their lives.

Several participants talk about how the student technology projects bring in and involve the community.

When they see that, a lot of people see everything the kids are learning. It grabs their interest and they want to learn more, the way the kids are learning more. (Interview excerpt, Trina)

Get more into culture when they see what the /ir kids are doing. (Interview excerpt, Cynthia)

It [seeing and/or being involved in the student projects] helps people get into the culture. (Interview excerpt, Lee)

What the students did and what they're doing is helping other people from here that have never experienced this have a little bit of a view inside of what happens. (Interview excerpt, Trina)

Encourage them [community members] to get more into the school and activities going on at the school. Maybe learn themselves, like the cedar bark weaving. (Interview excerpt, Cynthia)

Elders' support for the student technology projects is clear. They see the projects contributing to what they value for their children: knowledge of culture and ways of being as well as providing a bridge between cultures. In the words of one participant attending the community presentation,

The Elders ... were saying in their own language how pleased they were that the students are able to do that, because in their words, that is what we need to do now. And that is what I was saying earlier, in order for our culture to survive, get it down somewhere. Technology is one of the ways to go because not everyone is going to be speaking our language all the time, even though that is what we want. (Interview excerpt, Mac)

These comments focus attention back to the First Nations culture that is acknowledged as vital to education for all the community. Elders are recognized as the most valuable cultural resource available. Several participants noted that we are losing Elders; they are dying out, and there is a great need to preserve and document their knowledge of the language and culture. Mac and Doug both say that using technology to do this makes sense.

Although people think that it [technology] is taking away from us, I think it is adding to it. We have it recorded because, as one Elder put it, "Once I'm gone, all the knowledge and wisdom will be gone too." (Interview excerpt, Mac)

All participants as well as other community members would like to see CDs and DVDs of these student projects as well as a Web site. This would provide more cultural resources for people in the community as well as those living in other parts of the world.

Alf looks forward to the next generation putting the culture, language, and technology together and doing an even better job of it. At the same time he cautions us not to move too fast, to listen to the Elders, and above all to honor and respect all people. Ann claims that respect is the big thing that the culture teaches, and to her it is of primary importance to education today.

### *Discussion*

The direction and focus of student projects comes from the students and their communities. The participatory nature of this process ensures community and cultural relevance, which in turn relates to student, parent, and community motivation to become involved. Study participants talked about how the student research and presentations involved community members more in the school as well as in their own culture. Participatory methods are, I believe, essential for any kind of educational endeavor that calls for community input. To take control of and responsibility for your own learning, you need to have some say in what it is that you will be learning. Research literature strongly supports processes that involve community members in charting the course of their own education (Alaska Native Knowledge Network, 1998a; 1998b; Demmert & Towner, 2003; Greenall & Loizides, 2001; Lipka, 2002; Smith, 1999). Although this is not a

new concept, it does require openness, willingness, and trust to engage in these kinds of processes. It also requires practice, skill, and patience.

The projects and the processes used to create the student technology projects also contain all the elements laid out in Demmert and Towner's (2003) review for culturally based education interventions. Although their native language was not used in the actual presentations, it was recognized and referred to frequently throughout the project. Culture and language preservation and revitalization underscored much of the treaty negotiations as well as Elders' conversations about life over the last century. Students interviewed Elders, took part in learning simulations, and listened to various presentations on aspects of treaty processes. In this way, teaching practices stressed traditional cultural practices and adult-child interactions. Community members, leaders, language and culture instructors, and Elders were all involved in these projects so that traditional culture and ways of knowing and learning were incorporated into the projects. At community gatherings, meetings, and at the *Celebration of Learning*, the spiritual leaders of the community always open the proceedings with a prayer or blessing, and they are included in the planning of these events and proceedings. The curriculum for this project as well as in my classroom and community were not separate when it came to recognizing Native spirituality, which is a fundamental part of life in the community. It also connects with the component of Culturally Based Education that refers to knowledge and use of the social and political mores of the community. The participatory nature of these projects reinforced community mores that also enabled strong participation. Although as the teacher I facilitated various aspects of the project, it was a group effort on the part of many people. From what study participants had to say about their own and other community members' involvement with the student projects, along with their desire for students to know their culture, it is clear that culturally based curriculum (in this case supported by multimedia technology) enhanced collaboration in the community.

Schools need to be supportive, providing leadership or rather facilitation in these kinds of student technology projects and processes. Counseling on site has been suggested as one way that both treatment and prevention for various factors affecting student ability to succeed could be addressed. Education boards, school districts, health boards, and communities need to listen to community members' concerns and find ways to act on them. Similarly, they need to explore and open avenues to continue these kinds of student technology projects in their communities. Opening communication, particularly with students interviewing Elders as part of their research, was seen by study participants to support intergenerational collaboration and community-building. The projects promote the development of research and information technology skills by students that can be applied to other topics and areas of interest identified by the com-

munity such as traditional foods, feasts, and community mental health support.

Culturally and community-based student technology projects also have the potential to lead to increased levels of achievement and success in other areas. Starting with the community and the culture, student learning is continually and repeatedly processed with their own life experiences so that there is a greater likelihood of retention and recall. By increasing the similarity of social cultural expectations of the school to that of the students and their communities, the community beliefs are upheld. Traditional culture contains meaningful material that people access as they associate new information for processing. If there is personal and social relevance or a relationship to prior knowledge and experience, learning and recall are improved (Demmert & Towner, 2003). Study participants commented positively on how the projects incorporated many aspects of learning in practical ways that enabled students to demonstrate their own as well as their families' and community's interests. As the connections between students' experiences with culture of the community and academic curriculum are brought closer together, there is a greater potential for academic success and achievement. Educational practices can enhance and reinforce culture and community and at the same time develop Western ideas that align with expectations for graduation and employment. Work by Barnhardt and Kawagley (2003) supports this conjecture, indicating that culturally relevant programming is having a positive effect both on school completion rates and achievement.

Participants spoke of the pain about language and culture loss resulting from the schooling they received. The Indian Act is one example of legislated colonialism or imposition of one culture on another practiced by the Euro-Canadian government on First Nations people. Formalized, institutional systems of education fall under the provisions of this Act and have been strongly criticized for the goal of assimilating Aboriginal people. Children were, and continue to be, taught Western European ways. Obtaining a formal education is thought to enable conversations and discussions that work against further colonization and assimilation of First Nations cultures. When the preliminary findings from this study were shared with community members in December 2003, First Nations language and its revitalization were what people wanted to discuss. Since then, 100% language immersion began at the kindergarten level in one of the district schools in 2004, with two more schools starting in the fall of 2005, and this community's school scheduled for January 2006. Although this study was certainly not responsible for these developments, it is possible that the conversations and discussions in the community may have contributed to strengthening the argument for including language immersion in the schools.



### Conclusion

It is clear from the interview data that community members participating in this study were supportive of the student technology projects produced and presented in their community. It is also evident that the success of these projects involved healthy communication and collaboration from many people in the community. To be seen as successful by community members, projects such as these should embrace respectful communications and relationships, include community participation, have school support, be built around hands-on activities and experiences, use contemporary technologies as tools, and focus on cultural practice. An education that is relevant and self-directed leads toward increased independence and self-determination. This in turn is a powerful social determinant of health. Healthier people see the hole not as a graveyard or an accident, but rather as an opportunity to be in the circle, whole.

You gotta learn. Find means and ways how to protect yourself and what to do. (Interview excerpt, Alf)

### References

- Alaska Native Knowledge Network, T. (1998a). *Alaska rural systemic initiative: Year three annual progress report, December 1, 1997-November 30, 1998*. Fairbanks, AK: University of Alaska.
- Alaska Native Knowledge Network, T. (1998b). *Alaska standards for culturally-responsive schools*. Fairbanks, AK: Author.
- Barnhardt, R., & Kawagley, A. O. (2003). Culture, chaos and complexity: Catalysts for change in indigenous education. *Cultural Survival Quarterly*, 27(4).
- Battiste, M. (Ed.). (2000). *Reclaiming Indigenous voice and vision*. Vancouver, BC: UBC Press.
- Deyhle, D., & Swisher, K. (1997). Research in American Indian and Alaska Native education: From assimilation to self-determination. *Review of Research in Education*, 22, 113-183.
- Demmert, W.G., Jr., & Towner, J.C. (2003). *A review of the research literature on the influences of culturally based education on the academic performance of Native American students (information analysis)*. Portland, OR: Northwest Regional Educational Laboratory.
- Doll, W.E.J. (1993). *A post-modern perspective on curriculum* (vol. 9). New York: Teachers College Press.
- Fixico, D.L. (2003). *The American Indian mind in a linear world*. New York: Routledge.
- Flick, U. (1998). *An introduction to qualitative research*. London: Sage.
- Greenall, D., & Loizides, S. (2001). *Aboriginal digital opportunities: Addressing Aboriginal learning needs through the use of learning technologies* (No. 328-01). Ottawa: Conference Board of Canada.
- Kirmayer, L.J., Brass, G.M., & Tait, C.L. (2000). The mental health of Aboriginal peoples: Transformations of identity and community. *Canadian Journal of Psychiatry*, 45, 607-616.
- Lipka, J. (2002). *Schooling for self-determination: Research on the effects of including native language and culture in the schools*. ARC Professional Services Group.
- NAHO Policy Research Unit. (2003). *Ways of knowing: A framework for health research*. Ottawa: National Aboriginal Health Organization.
- Smith, L.T. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. New York: Zed Books.
- Tsey, K. (2003). Social determinants of health, the "control factor" and the Family Wellbeing Empowerment Program. *Journal of Australian Psychiatry*, 11, 34-39.