

# Nihiyawi! Final Project Proposal

Team members: Andrew Gregg, Tricia Um

## I. Background Information

The Rocky Boy Reservation, located in northern Montana, is home to about 2500 Chippewa-Cree Indians. However, only 10% of the population retains any working knowledge of the native Cree language. Of this group most are elderly people, who are sedentary and not as visibly active in the community. Due to this situation, many cultural and historical aspects of the rich Cree tradition have been lost upon the younger generations. The loss of the Cree language is one of the factors that make it increasingly difficult for the young people to relate to their elders and take pride in their heritage. They are beginning to lose the importance and meaning of being a Cree Indian, resulting in low community involvement and interest in improving reservation life.

In an effort to address this issue, for the past 30 or so years, various methods and tools of language instruction have been used in the classroom to promote learning. However, most of these tools are now outdated and largely ineffective. For example, elementary school children are given archaic “Language Master” magnetic card readers to listen to pre-recorded phrases. Although these readers do expose the children to the sound of the language, the cards are easily damaged or written over. Also, the students tend to lose interest in the process of learning and begin to play with the cards or the buttons on the reader. Other outside organizations have provided some technological solutions to this problem, but these are difficult to implement on the Rocky Boy reservation. Free online tutorials are available, but are not easily accessible to the children, who lack sufficient computers and internet access. There are also educational books available, however, they are generally expensive (\$50+) and difficult for kids to become engaged in, as they lack the allure and excitement of new technology.

## II. Innovation

Nihiyawi! is a project to develop and maintain a technology-focused curriculum for language learning. Based on a Computer Clubhouse philosophy, we propose to set up a language learning lab on the Rocky Boy Reservation, along with a set of activities to supplement it.

Computer Clubhouses are independent facilities setup with the purpose of allowing children a free space to explore and learn about computer skills free of charge. Children can enter a clubhouse at anytime with an interest in a project and receive assistance or use the resources available there. The clubhouses are generally staffed by volunteers, who maintain the facilities and help the children. The rooms are usually equipped with computers and other hardware, as well as a wide array of software packages.

Using the clubhouses as inspiration, we would like to design a similar facility at Rocky Boy, focusing on learning language through technology. Our solution is comprised of a hardware package to be used in this language lab, and a curriculum of interactive activities and complimentary software. Using the lure of technology, we hope to attract and engage children in the process of learning Cree. By setting up a language lab, students can enter an open and supportive environment and pick a project that interests and excites their curiosity. These projects will be centered on developing or using Cree, while allowing the children to express their creativity through design and computer-based skills.

Stone Child College is a two-year technical community college located on the Rocky Boy reservation. We would like to establish the language lab on this campus, to provide local and immediate access. In this location, the lab can be staffed by college or high school students. In doing so, infrastructure and support for the program would be present, as it will engage not only the current elementary age children, but also those of the previous generation.

The language lab would be an on-site and highly visible structure for Cree language preservation. Children will be given creative and fun tasks that will interest them in the language, while having the opportunity to use technology they would otherwise not have access to. The program would be locally administered, drawing in the participation of the whole community. Nihiyawi! will provide new and innovative tools for school-age children that is readily available for use. It will also engage all members of the Cree tribe in support for the preservation of their language.

### III. Implementation

#### **Work to Date:**

We have been researching software packages and hardware requirements for the lab. Our primary target is based on multi-media, including image processing and audio mixing. As one discreet component of this package, we have decided to use the Macromedia Director programming environment to create a virtual world in which children can test their vocabulary and knowledge of grammar. In addition, we have purchased an mp3 player/recorder for recording phrases, a digital camera for creative imaging projects, and a standard microphone.

We have also created a mini-curriculum that revolves around these hardware elements. For example, the activity involving Director will allow children to create their own digital cartoon strip. By manipulating graphics, they can design settings and characters to write stories around. These images can be taken using a digital camera, to reflect real-life surroundings, or from a repository of default pictures. Then, by recording their own voices, the students will be able to create a dialogue among the subjects in each scene in Cree. Through this activity, they will be able to demonstrate their working knowledge of vocabulary and grammar in conversation or story-telling. The children will also have incentive to expand this knowledge base in order to create more complex story lines or

dialogue. Their work can also be shared among their peers and visiting community members.

Our other focus this term centers on an activity to make a song in Cree. The children will be given the mp3 recorder and asked to interview a Cree-speaking elder in the community. From the topics brought up in the conversation, they will have to construct the lyrics for a song. They can also choose to record traditional Cree music or use Cree musical instruments as a backdrop melody (recorded in the language lab with a standard microphone). By overlaying the music and the speech, they can effectively create a song in their native language. By having the children interview their elders, they are able to interact more with the older generation, and, hopefully, will be able to better relate to them.

To better understand the environment we want to create, we have visited the Computer Clubhouse located at the Museum of Science in order to observe the interactions between the students amongst themselves and the facilitators. Such observations of the structure and layout of the clubhouse give us a better idea of how to create a fun, exploratory atmosphere, but we have not yet integrated that into any design. We've also been in contact with Jolene Krebs, a member of the Rock Boy reservation, as well as with some Media Lab students who have worked on the Cree language preservation project in past years.

#### **Implementation Plan:**

We have currently purchased all of the software and hardware necessary to implement the components of our project this semester. Our focus, now, is in developing the macros and user interfaces for the activities, and in fine-tuning the details of the activities we have proposed. Our approach is to continue communications with Jolene and other mentors during the development stage to create a product that is well matched with our interest group. Then, we would like to beta test the activities and the software on some local elementary/middle school age children. Their progress through the activities will be documented, and we will use this feedback to modify and improve our project. Finally, we will produce a plan for actual implementation, including potential sponsors and details on the physical infrastructure for the language lab. This will be provided to Jolene to present to the larger community at the reservation. If there is a positive reaction, we will continue our work in supporting this project to its realization through the summer if needed.

#### **Challenges:**

There are several potential roadblocks to our project design and implementation. The first, and probably the most important, is the cultural barrier. Even from talking to Jolene and watching video footage from the reservation, it is difficult to get a sense of what reservation life is like and what the children would be interested in. We have no immediate sense of what the children really want or need in this situation. We've also had trouble understanding what is within cultural bounds and what is not. Since we have a limited picture of what resources are currently available to the children or what their

attitudes towards this type of learning approach are, we've had to make a lot of assumptions in adopting our design.

Furthermore, communications are sometimes lacking due to difficulty in arranging conference calls or coordinating schedules with our mentors. However, there is an enormous amount of information available to us through other sources. But, it is hard to pinpoint which of these is actually useful for what we want to achieve.

One particular design issue that we are facing is trying to appeal to a wide age range. Our target group is elementary/middle school children, between the ages of 7-13. As such, we need to make our curriculum simple enough for the youngest child to understand and yet rich enough for the older child to be interested as well. This is particularly challenging since we do not have a solid idea of what might appeal to students in either of these age categories. Therefore, in order to capture this age group, our design will be self-paced, allowing the user to define how complex his/her individual project becomes. It remains to be seen whether this is an effective approach and what alternatives are available.

We have also had difficulty setting up a metric for success. Measuring how well a child learns a language is problematic and we are not quite sure how to tell whether our methods are truly effective or not.

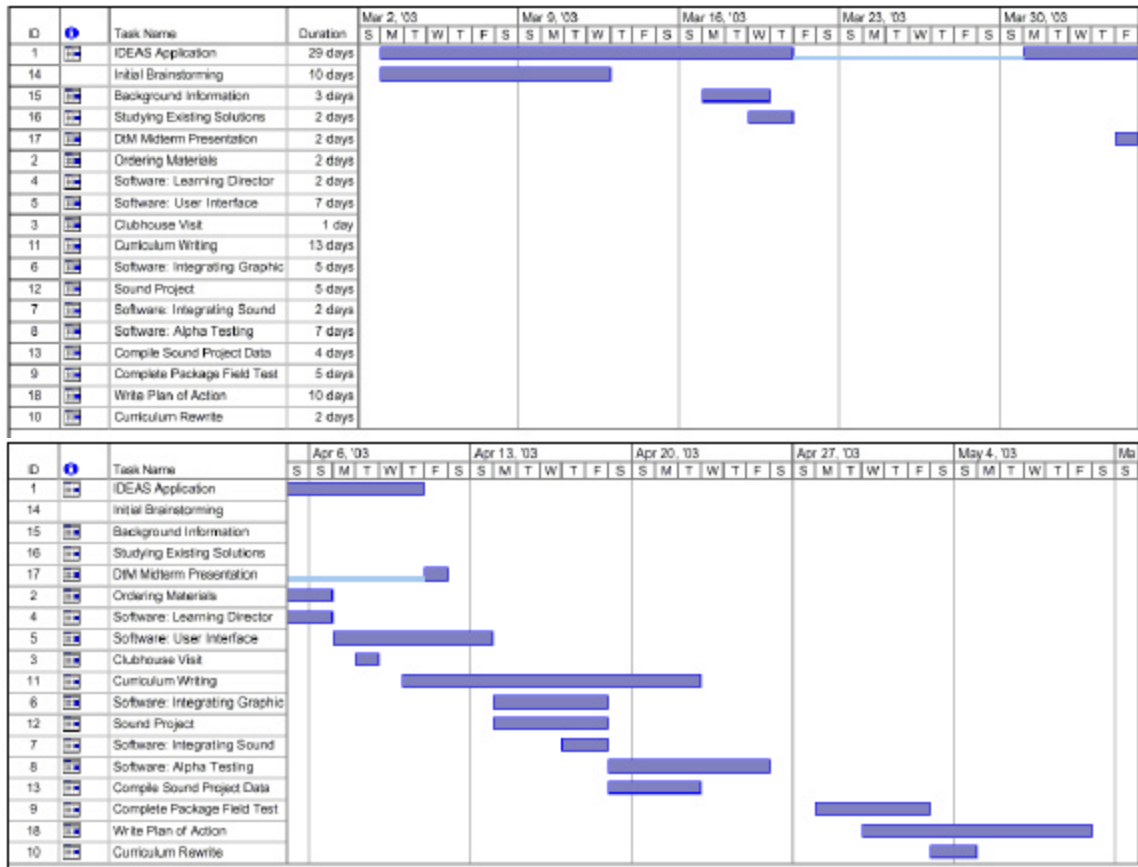
#### **Support Network:**

Our main contact at the Rock Boy Indian Reservation is, as mentioned above, Jolene Krebs. Jolene is an administrator at Stone Child College and has been involved with projects for language preservation for the past couple of years. She provides us with primary information about the reservation, as well as serving as a liaison for us.

Our primary MIT mentor is Timothy Presterio, a graduate student at the Media Lab. He formerly worked on another Cree language preservation project, which involved creating a game to play. He has since remained in contact with the Rocky Boy reservation and gives us insight into how to deal with cultural issues.

Benjamin Vigoda, also a Media Lab graduate student, is our other advisor. He, too, has worked on the Cree language toy project. He serves as our technical advisor, giving us feedback on the details of our implementation.

**Timeline:**



**Scope:**

Our development process will be primarily centered around feedback we receive from our mentors and the testing we do. After writing a rough curriculum and software package, we will demo the activities and present the results to Jolene. At this point, we should have a good idea of how the children are using the software and whether or not they are gaining anything from the activities. If anything is lacking or if Jolene has any concerns, we will go back and revise whatever is needed.

The final project will include not only the curriculum and software, but also a limited business plan for setting up this language lab. Using information from the Computer Clubhouses and our mentors, we will detail how the lab should be set up, maintained and staffed. However, it is up to the reservation to decide whether or not they wish to implement all our suggestions.

**IV. Community Impact**

Our project is primarily directed at school-age children at the Rocky Boy Cree Indian Reservation. By creating an on-site language lab, the children will have an opportunity to learn their native language in an interesting and creative way. Through various multi-media activities, children can become engaged in the activity of learning and will be constantly challenged to pursue expanding their knowledge level. They will also have a

comfortable, yet dynamic, atmosphere in which to explore their ideas and ask questions. We hope that this lab will help the Cree children *want* to actively learn their language and become passionately interested in it.

In addition to learning the language, the lab also provides access to modern technology that the children otherwise would not have. Coming from an impoverished rural area, most of these children have not been exposed to the electronic world that we take for granted. They will be able to use and learn about various software packages, as well as familiarizing themselves with different hardware tools. Working in the lab will allow them to use their creativity to create projects and designs.

As a broader aim, we would also like the lab to enrich the community of the reservation. The language lab could sponsor open houses, during which children would be encouraged to bring their relatives to see what they had been working on. With this sort of community involvement, more children might become interested in the language and culture. Hopefully in the long run, this will promote stronger relationships and a greater understanding between the younger and older generations at the reservation.