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RIT NTID
Session T2C
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Welcome to RIT NTID.
This is session T2C?
Web-based instruction on Solar Eclipse and Lunar Eclipse for deaf and hard of hearing people presenter is Paruhut Suphajanya.
Testing can you hear me? Why yes, you can. Thank you very much.
>> Good afternoon, everyone. I'm happy to be your facilitator today for this session. We have a presenter from Thailand. His name is Paruhut Supahajanya. We are asking that everyone turn their cell phones off. We have international visitors here as well, so there may be some secondary spoken language translation happening at the same time during the presentation. Our presenter will present for 30 minutes and then at the end of that there will be 10 minutes for questions and answers and also we have an evaluation form that's very important to us. We'd like your feedback. Thank you very much.
>> PARUHUT SUPHAJANYA: Thank you, Christopher: I'm sorry, my sign language in ASL is limited so I'll be using a combination of American Sign Language and international sign today. If something is not clear to you, please let me know.
And I will repeat.
Now, the topic of my presentation is solar and Lunar Eclipse.
My colleague professor Benjaporn is here with me. My name is Paruhut and we're both professors at Ratchasuda College which is part of the Mahidol University in high Thailand, we work there to the. My colleague professor Benjaporn Saksiri is proficient in technologies and I'm proficient in issues related to sign language and deafness and educational experience for deaf people so we work together. And again my presentation is about solar and Lunar Eclipse. And teaching those topics to students who are deaf and hard of hearing. My sign for Eclipse will be this.
Now, we're here on earth. And we look out at the sky and we're able to see Eclipses. And that's where this sign comes from. It comes from a person's perspective on earth. And what they see in the sky as the moon passes between the sun and the earth. There will be 3D animations that I will show you later in the presentation to illustrate the point. Now, I have three goals. Often times it is difficult to teach concepts related to technologies. It's difficult to teach the concepts of solar and Lunar Eclipse. Thank you for letting me know, we will do that. Thank you for the

reminder, I would appreciate it. Would you like me to repeat any part of my presentation so far? Okay.

Great. Thank you. I will try my best to slow down. The first objective it's difficult to understand science concepts as they're taught in the classroom. The second is web-based instruction. And how we can use this as it emerges in the field of education. There are many new technologies that we can utilize on the web which make the teaching of these concepts easier for deaf people. My methodology is thus. We have a goal of teaching through web based instruction, we can talk about solar and Lunar Eclipse and we've got our general objectives leading from this. We've got specific vocabulary talking about the Eclipse, the lunar Eclipse and the Solar Eclipse, vocabulary related to that. Then we've got the various components. And there are four. Involved in the eclipse. We've got sun, earth, moon, and the orbit of those bodies around one another. Then we have various topics. We've got the Solar Eclipse that we use as one topic. And the lunar eclipse as another specific topic. Now I have something here that I'm calling an tech Dole -- anecdotal information. Long ago people had specific beliefs about the eclipse process and what happened there. Number six, there are exercises, there are different stories and clips that the students will watch and exercises related to that. Then after the students have been through this process, there's an evaluation form to check the veracity of the work that was done and their experience. And the satisfaction that they felt and finally there was the team that was involved with the development of this web-based technology for the instruction of deaf students in this area. Now, this work started when Benjaporn Saksiri was at a conference in Russia. She came back and she shared with me what she had learned she said there's different books and different networks and technologies that we could look at for this.

And there was concern that people didn't have access to all of this information in one place. And that deaf students and deaf children as a whole were missing out.

So we collected all the materials we could find and we found people who were interested in science and learning about science. And we chose the issue of solar and lunar eclipse because it seemed to have available information and as well people were interested in learning it. So we collected up the different resources and we realized that much of them were at a very high level. That they weren't accessible to children going through school. So we decided after looking at these materials that we would need to translate them and to adjust them to accommodate our deaf students and their learning needs. So we looked at the language. We did a lot of translation. And work on the text and then we looked around to find deaf individuals who were skilled who understood the concepts and who had a strong use of Thai sign language to work with us to express the concepts in sign language for use on the web. We videotaped these people and their translations of the written information and we put them on the web. After this was done we showed it to our deaf and hard of hearing students and asked them what they understood. Some of them found some instances where they didn't understand. It seems to be a little frozen here. Anyway, there were some deaf students who were able to find a lot of the information and there were some that found that though there were places where the information wasn't clear to them. So we went back to the project team, went back to the drawing board and made the adjustments where the students felt that information was not clear. And then we brought all of that together and again got feedback. And it was finally approved and we put it up on the web and we've been working with it there.

Let's go back to web-based instruction. We had two curriculum objectives. We had to observe and explain the relative positions of earth and the moon and the sun and how they were responsible for the eclipse.

And how the -- how the bodies are -- the relative positions are incorporated into the eclipse process. So after going through that, we looked at general objectives and we made changes. We talked about the sun and the moon and the earth and how they moved relative to one another. How the sun and the moon and the earth affected one another and their phases. And when that was all clear and we had the written objective clear for everyone, that was put into the Web site as well. As soon as that was agreed upon and analyzed and moved forward from there. I will be showing you some pictures, some photos we have on the web.

This -- you remember what I showed you before, that list where we had our main objective in all of the different components? This basically explains some of those components. It's very important for the deaf people to understand and to have a visual of the process that we're talking about. And the pictures help to illustrate clearly the points that we make. We have captioning that goes along with the pictures and as well we have interpreters available on the Web site to explain the captions as well. To interpret the captions.

The Web site has 3D components. So that students can see the movement in realtime. And these other photos show the sun and the moon and the visual sun and the natural sun. So it shows this. And how this works with Macromedia. Software. And again we've got the natural earth and visual earth. The natural moon, the visual moon and again, these are shown through the Macromedia flash. So we can see how these bodies move relative to one another. And it helps students to understand how the movement occurs and what it actually looks like. Now the students are very interested when they see this, they're very motivated to learn from these tools. Now I come to the anecdotal part that I mentioned. Past beliefs about solar and lunar eclipses that have come from history and been passed down.

Now, as the students see this and have gone through this experience, they're able to evaluate. We're able to evaluate them. By asking them questions and we have a translator. As well to help the students, you know, and again, it's not about whether they're right or wrong. It's about what they got from the experience. Now there are 10 questions and we see how many a student got right and how many a student got wrong based on that we collected this information. When we were done, these were the results we had from all of our participants. We put them into a table and you can see areas where students felt that their experience was a success and perhaps where they didn't feel as successful.

All of the students felt quite good about going through the experience. Now our conclusions: Overall the solar and lunar eclipse and this web-based technology was created with the purpose of enabling deaf and hard of hearing users to learn about the natural sciences. And it was to test the users' knowledge and they were able to demonstrate and perform tasks. We're going to go back and clarify the interpretation. When students finished their experience, they do the evaluation. And this is to -- for the students to express, again, what they felt they learned from the experience. They had the opportunity to show what they did, what they were able to perform and tasks and also to identify where there were problems. And this really helped to make it clear for us what they learned and the usability of the product. We decided on two future research needs. We thought that future research should focus on increasing the sample size and we needed to encourage more people to get involved.

And as well, we need to do a learning outcomes assessment. So these two areas need further study and further research. And now I'm going to show you the Web-based technology that we used. This will demonstrate what the students experienced. Now this was all put together by our project team and this is what the students see. We've got the sun and earth and the moon

coming in between. Now I'm sorry that the captions are only in the Thai language. We did not translate them into English.

This is another example. You can see that we've got captions and explanation in the Thai language and then we've got the flash player indicating what happens. And we really need to have a little bit more here to help the students to understand what it is that they're seeing and in order to help them keep their focus and their interest. As well, having the translator on the screen was very beneficial to many students. If they could not understand the caption perhaps they were able to click and have the translator perform the information in sign language for them. Here's an example. This is an example of the caption below performed by the translator. This is actually a deaf individual who is well versed in the science as well as sign language. And who could put that into the natural language that the students are able to access more readily than the written.

Moving on to another example. Some of the web pages have only the caption. Some also involve the translator. The reason for this is that some topics are much easier to -- for instance to understand. They're simple enough that anyone can really understand them. And there's no need for a translator. We do need to have the written information descriptive if you will for the translators to follow because again they are following that when they do their translations online. When a student has gone through the web exercises, they're able to put down their name and e-mail address. They login. And if there's something that they don't understand, they're able to bring up the translator, there's an icon here in the screen that if a student clicks, they're able to bring up the translator. And again, the translations are provided for the more complex topics of information. If a student while they're going through the evaluation wants to know if they're right or wrong, they can be shown this. They're given an indication of whether they've done the -- if they've answered correctly or not. Now again, this evaluation portion we're able to see where students were able to answer questions successfully and where not. If we find a lot of variation in students experience and whether or not they're able to answer correctly, we might be able to address the information on the web to make it more accessible and thus, more of a learning experience for the student.

You can see we're letting them know in sign language where they answered correctly and where they did not answer correctly. So they're able to see it visually as well as read it from the table. This is our project team. We all worked together to develop this site. And do the evaluation.

I'd like to thank you for your attention and I wonder if anyone has questions for me. Yes, thank you. Does anyone have any questions?

>> What age and what level are the students who would use the Web-based instruction that you developed.

>> These are deaf children through the 12th grade here in America. Some of the Thai people from the community were very interested and they had varying levels of education. This wasn't for people very advanced levels but perhaps didn't have a lot of experience in the science or technology area. Are there more questions? Thank you.

>> Yes, we took the pictures from -- we looked in the books to see what there was and then we took some of them from the Internet and we were able to compile a list of things based on you know the books, what was on the Web and as well new information. Adding it to the flash application really made it a much more beneficial project for the deaf students, much more beneficial for the deaf students. Some of the 2D pictures weren't enough. The 3D was something that we did for ourselves to bring these topics to life for the students.

>> I agree it's difficult for students to understand. Even though it's very visual. It's still hard to get the whole thing across. And I think that

your visual as well as having the signed part of it is beneficial. Yes, thank you, that is what we felt. I think we need perhaps a little bit more but I think we've got a good start and we're learning as we go. You know? I think it's important for the students to see things and seeing this really helps them. Students are able to go online and see this. It's something that they can access at any time and it motivates their learning. And we don't want the students to have to feel like they have to ask for help constantly. So having this Web-based tool is great because they're able to do it on their own. Any more questions? Any more? We've got just a brief time for questions. There is a question. Okay.

>> You've said the students were deaf students. Do you think it was easier for them to learn from your web based instruction or from the textbooks?

>> We felt that the students did not benefit as much from the books. The students struggled more with that. But with the 3D animation it was much easier for the students to see what was going on. We felt that the 2D version in the books was limited and didn't offer them the same kind of experience that the Web did. This allows students to have a much more complete understanding. They're able to click on other links and they're able to see how things move in relation to one another.

>> Thank you, everyone and I would like you to -- to remind you to please fill out the evaluation and hand that in before you leave the room or download an evaluation form from the tech symposium Web site, thank you.

>> It was a long time. It took us a while. We have our technology experts who did a lot of work for us. But all of the research and everything to get it ready to go on the Web took about a year. So this was quite a lot of preplanning. From this point on we feel it's a fairly substantial tool that will stand on its own. So we aren't expecting too much more work.

>> Another topic. How long will it take for the next one? You finish the first time, you got the experience. You got the technology down. The next time how long do you think it will take? That's a good question. Right now we're working in new areas. We finished this. We've got this done. Later there may be other topics that will come up. We're talking now about global warming. That's one thing that we're working on. There's a lot in the news about global warming. A lot of the problems involved in that. So we're beginning to put together the information to get that set. How long, you had asked how long. I'm thinking about a year from now we should have that ready. Again, we've got this we're doing a lot of research, we're eliciting help from our deaf consumers out in the community and getting feedback from them. So I would say we'll be ready to go in about a year with our next topic. Just to address your comment, it was quite an expensive bit of research. And work involved. But we were given the money. We did a lot on our own. We gave a lot of ourselves and of our time so we were able to maximize the resources that we were given. And again we aren't given huge amounts of money for this so we hope to be able to continue to do this but again, it's going to require a lot of sacrifice and personal investment. Are we done? Thank you between for your time and attention. I appreciate it very much.

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