Video Conference Evaluation Report

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Dr Damian Maher

University of Technology, Sydney (UTS).

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Introduction

Museums have a long history and were established early by the Greek and Romans as well as in Africa and Asia going back as far as the mid 16th century BC (Lewis, n.d.). Today, many cities across the globe have a number of museums which include maritime museums, war museums as well science and art museums. Traditionally, the purpose of modern museums has been to house, conserve and make accessible collections to the public.

The early audiences of museums generally were required to visit the museum in order to experience the collections. In more recent times schools have organised groups of students to visit museums to learn about ideas and concepts through engaging with the collections that link to work being carried out in the classroom.

Increasingly, as technology has become more sophisticated, students have been able to experience museum collections and concepts though the use of video conferencing facilities. Public schools in NSW have been provided with one interactive classroom (interactive whiteboard, video conferencing facility and data collaboration) as part of the connected classrooms initiative. This has allowed the Australian museum, along with many other museums and galleries across NSW to link directly into the classroom to provide video conferencing.

Rural schools have long accessed the video conferencing option of museums as they are often unable to get students to the museums and so the tyranny of distance was overcome to some extent. More recently, urban schools have begun to use the video conferencing facilities provided by museums and other learning institutions, in part to overcome financial restrictions, and safety issues that may hinder potential field trips (Cassady, Kozlowski, & Kornmann, p. 444, 2008). Time is another factor that has encouraged schools to facilitate learning via video conferencing.

The purpose of this project was to provide feedback on the effectiveness of video conferencing. To facilitate this process, three schools were provided with two lessons that were focused around museum-in-a-box® kits. One lesson was delivered through video conferencing and one lesson was delivered face-to-face to each class. The video conference lessons were based around the

theme of fresh water systems. The following lessons were to be based around the same theme but there were variations based on what different classes were focusing on. The data were examined to identify similarities and differences between the two forms of delivery and to provide feedback on ways to improve the effectiveness of video conferencing.

Literature review

The first public use of video communications was the motion video telephone of AT&T at the New York World's Fair in 1964 (Noll, 1997). It was used in these early days by the business sector, to help save in the time and cost of travel (Tang & Isaacs, 1995). Universities were next to take it up and it has now become mainstream in both primary and secondary schools.

Virtual field trips are now also possible via video conferencing. Students are able to visit the Great Barrier Reef in Queensland Australia for example and talk with divers as they are diving in the water. These virtual excursions provide experiences to students that they would not otherwise be able to have. Students in remote areas are also able to connected with other students and learn with and from each other in new ways (McCormick, 2007). For example, students can connect to each other and practise dances that they then go on and perform them together. Teachers themselves are also able to benefit by participating in training programs and administrative activities via video conferencing (Anastasiades, 2008; Stewart & Vallance, 2008).

The use of video conferencing is able to provide a formal bridge between the expert and teacher/student audience while promoting informal interactions open to discussion and exchange (McCombs, Ufnar & Shepherd, 2007).Videoconferencing compares favorably with traditional instructional methods (Greenberg, 2004). It can also increase access to education (Kriger, 2001; Merrick, n.d) and be used to provide authentic connections beyond the school boundaries (Cavanaugh, 2001).

The importance of interactions during video conferences has been highlighted in research (Bates, 2005; Smyth, 2005). Interactions can include including questions asked by the teacher, questions asked by the students, interactions among the students at the remote sites and interactions between sites which are highlighted in the literature (Denton Baird, 2003). Additionally,

interactions can occur before and after the class via email messages or other communications (Collins & Berge, 1998). Multi-site videoconferences add challenges to interactions between participants. "Even the addition of a third site has been found to add significantly to complications both technological and pedagogical (Payne et al., 2006)" (Gillies, 2008).

The use of video conferencing is able to enhance communication and collaboration between the learner and the educator (Hinger, 2007; Saw et al., 2008). The use of video conferencing is seen in part by the Department of Education and Communities (DEC) as a way of preparing students to work in teams with people from different cultures in the global village that now exists. Schools are now being seen as global enterprises where students are seen as global citizens.

The use of video conferencing is able to connect students to experts in new and exciting ways. Students in NSW public schools have been able to contact astronauts at North American Space Agency (NASA) and ask questions that mattered to them. Students in NSW have also had the opportunity to connect with authors such as Morris Gleetzman, Graeme Base and Ursula Dubosarsky, who many of the students know through reading their books.

Research on the use of video conferencing suggests that drawing on authentic student-centred approaches can provide for successful learning outcomes. In one study one of the findings to come out of the project was that:
"Video conferencing can enable 'authentic' experience – students hear things from 'the horse's mouth' and can respond immediately with their own questions" (p.8) (Comber, Lawson, Gage, Cullum-Hanshaw & Allen, 2004).

Three patterns of videoconferences in K-12 settings have been identified which are: provider-centered, teacher-provider facilitated, and student-centered. (Newman & Goodwin-Segal, 2003) "A review of student interactions for these settings indicated that higher levels of questioning as rated by Bloom's taxonomy occurred among students and providers in the student-centered approach than in the other two" (Newman, Barbanell, & Falco, 2005).

The importance of active participation during learning has found to be important. "Hartman, Miller, and Nelson (2002) found that children were able to recall more information after actively constructing a model volcano than when they merely observed someone else constructing the model" (Cassady, Kozlowski, & Kornmann, 2008. p.441).

Video conferencing, if not delivered using sound educational principals can susceptible to all of the reputed drawbacks of that mode of teaching (Bates, 2005) where it offers less than the lecture in terms of pedagogy (Laurillard, 2002).

Research Design

The primary methodology for this evaluation is primarily qualitative case study methodology (Erickson, 1986: Lincoln & Guba, 1985) was used. As Patton (2002) suggests, case studies are predominantly relevant to researchers in the qualitative domain as they provide extensive details of the experiences or phenomenon being studied. Qualitative research focuses on understanding social phenomena (Wiersma, 2000). In this study qualitative research is used to explore attitudes and experiences that may have affected the perspectives of participants in the study. Ary, Jacobs and Razavieh (2002) state that: "You must not look only at what people do but also at how they think and feel" (p. 23). Within qualitative research, the participants are considered the key source of data as the researcher develops a complex, holistic view of the participants and their perspectives (Creswell, 1998; Merriam, 1998). Some quantitative analysis is employed to provide results of responses to questionnaires.

Participants

A total of three schools participated in the project which were; Greystone Primary School, St James Park Public School and Beatle Public school. The majority of the students involved in the sessions were from grades five and six although students from grades three and four from Greystone P.S participated in the face-to-face session.
An overview of each school is presented below.

Greystone Public School

Greystone Public School is situated in the rural area of northern NSW. In 2011 there were 25 boys and 30 girls enrolled. The school had 3 classes from kindergarten to year 6 comprising a K/1/2 class, a 3/4 class and a 5/6 class.

The staff comprised one full time teaching principal; two full time teaching positions; one part time teaching position for library learning, learning support and release from face to face teaching duties; one full time school administration manager; one part time school administration officer; one full time and one part time school learning support officer.

St James Park Public School

St James Park Primary School is situated on the northern suburbs of Sydney. In 2011, there were 89 boys and 78 girls enrolled. The school had eight classes from Kindergarten to year 6 comprising five grade level classes in Kindergarten, year 2, 3, 4 and 6. There were two composite classes which included K/1 and 4/5. There were 89 boys and 78 girls in the school.

In 2011, the staff consisted of eight classroom teachers, two assistant principals and a non-teaching principal. In addition, permanent part-time teachers were employed for the school's library program, relief from face-to-face (RFF), French and ESL. A part time councilor and a specialist music teacher also supported the school. The office staff consisted of a full time senior administration manager supported by a part time school administration officer.

Beatle Public School

Beatle Public is a small, rural school, situated inland of the southern area of NSW. In 2011 there were 19 boys and 13 girls enrolled. The school had one K-2 class, and one 3-6 class. The staff consisted of a full time Teaching Principal, one full time classroom teacher and a part time support teacher. The teaching staff is supported by a part time School Administration Manager.

The lessons

As indicated in the introduction, the video conference lesson was based around the theme of fresh water. The focus of this was on catchment areas. The museum used the material from the box to deliver the VC lessons. These lessons were broadcast on September 11 and 12. In early

term four the fresh water boxes were sent to the prospective classes. Figure one shows the contents of the box[1]:

Figure 1: freshwater museum-in-a-box® kit

The majority of humans live near some form of freshwater environment. These biologically rich freshwater ecosystems play a vital role in human life as sources of water, food and recreation. The new *Freshwater* box has been developed in conjunction with Sydney Water. This box replaces the *Life in Freshwater* box and has been expanded to include some exciting new water quality monitoring equipment and learning resources. The new content will provide a glimpse into life in fresh water, how we impact it and the action we can take to improve our catchments.

Box Contents:

Life in freshwater diorama

Specimens

- Dragonfly nymph
- Pond snail
- Tubifex worm

[1] http://australianmuseum.net.au/Museum-in-a-Box-Freshwater

- Yabby
- Damselfly
- Spotted Marsh Frog
- Eastern Water Skink
- Murray River Rainbow Fish
- Giant Water Bug
- Water Spider

Stream watch collecting equipment

- Dip net
- pH strips
- Turbidity tubes
- Thermometers
- Electrical conductivity meter
- Identification charts
- Sampling trays
- Water flow cup

Teaching material

- Information panels
- Teachers Guide
- Lesson Plans
- Activity Sheets
- What's in a Drop DVD
- Books
- Poster
- Factsheets

Data

Video footage was taken of classes during a video conference lesson and then later in a face-to-to-face lesson. Both the students and teachers were invited to complete a written questionnaire after both lessons. It should be noted that none of the teachers completed a questionnaire for the

video conference lesson. Informal discussions were conducted with the museum educator around the lessons which provided a fuller understanding of the processes involved.

Two video conference session were recorded which totaled one hour and 40 minutes. Beatle Public School had a session by themselves. St James Public School and Greystone Public School had a combined session. All three schools had a face-to-face session by themselves which totaled approximately two hours of video footage.

The questionnaires received from each school are:

Greystone PS

24 student video conference questionnaires

2 teacher and 31 student class lesson questionnaires

St James Park PS

27 student video conference questionnaires

1 teacher and 27 student class lesson questionnaires

Beatle PS

5 student video conference questionnaires

1 teacher and 15 student class lesson questionnaires

Analysis

To begin, all the questionnaire data was transcribed so that it was in a written format. It was then coded. Coding is the process of categorizing and sorting data (Charmaz, 1993). In coding the data a record was kept of the number of times particular students interacted, how long they interacted, who they interacted with and what they interacted about. In addition to this, the types of literacy resources they employed were also recorded. The next step was to compare and contrast all the items that had been assigned to a heading. Through this process a set of categories emerged. These early categories were then condensed into a more structured and useful set of categories as the research progressed. "The aim of this is to clarify what the categories… mean, as well as identify sub-categories and relations among categories" (Sapsford

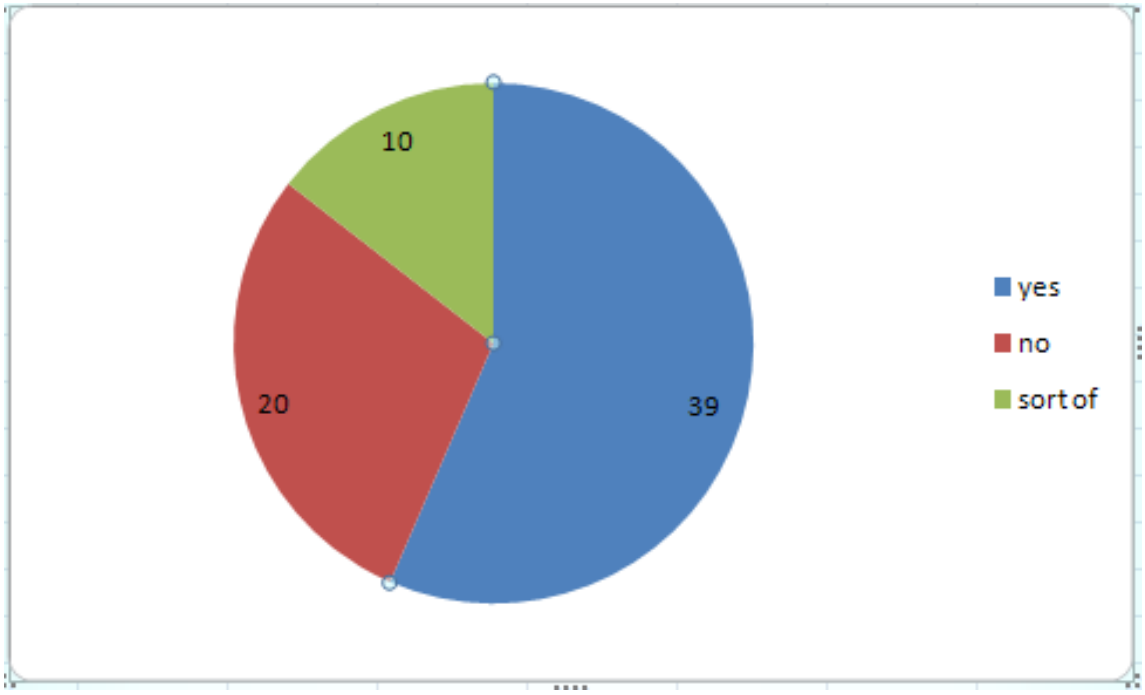
& Jupp, 1996, p. 292). The video footage was then viwed and aligned with the themes developed from the questionnaire. New themes developed which were then referred back to the questionnaire themes.

Results and Discussion

This section sets out the results of the student surveys which are then followed by results of the teacher surveys. Results based on observations of the video conference lessons and then the class lessons are set out.

Student Surveys

The students were asked if they could see the educator and resources clearly for both the video conference and the classroom lesson. Graph one below shows the results for the video conference lesson:



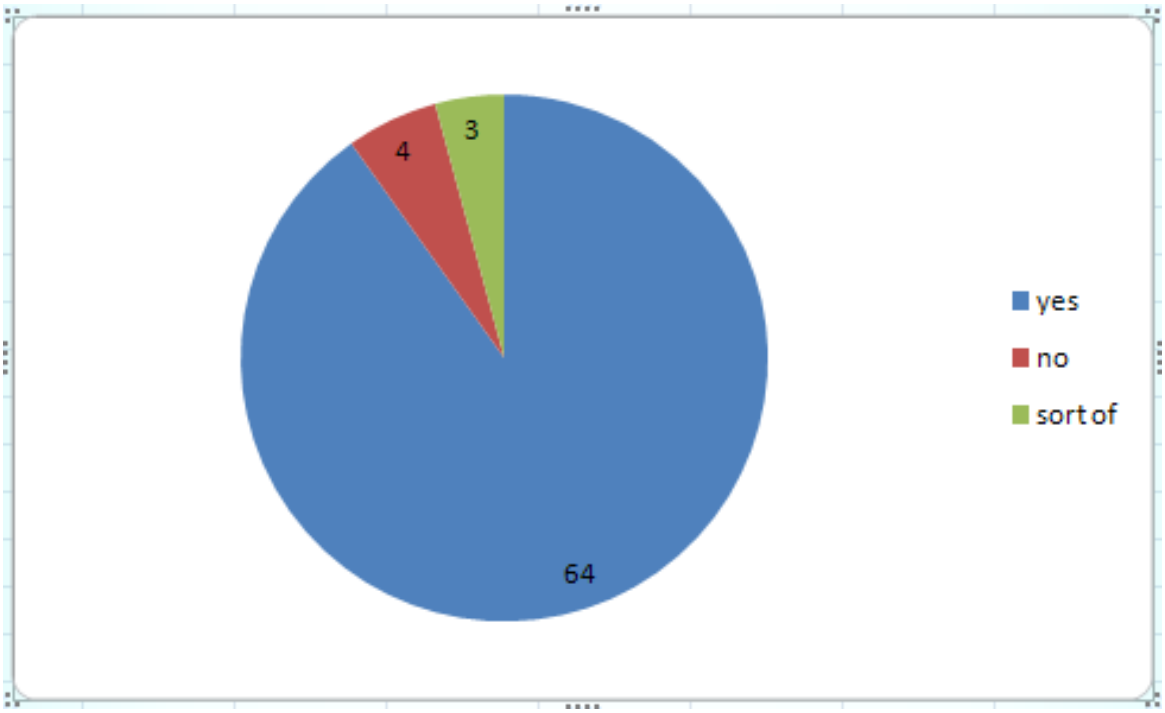
Graph 1: student video conference response on clarity of presentation

For graph one it can be seen the majority of students could hear and see the educator clearly although there were a significant number of students who stated they couldn't see the educator or

resources clearly. The students did not indicate whether it was the educator or resources that were the difficulty. For those students who indicated sort of, some of the responses were that the screen froze or that the image was fuzzy at times.

During the video conference session several of the classrooms had two screens that they could use. The video conference was set up to take advantage of this with one screen dedicated to the educator and the resources used and the second screen dedicated to a PowerPoint display. None of the students commented on the use of two screens so it is unclear if both screens were utilised during the video conference sessions

The students were again asked if they could hear and the see the educator and resources clearly, this time for the classroom lesson with the results set out below:

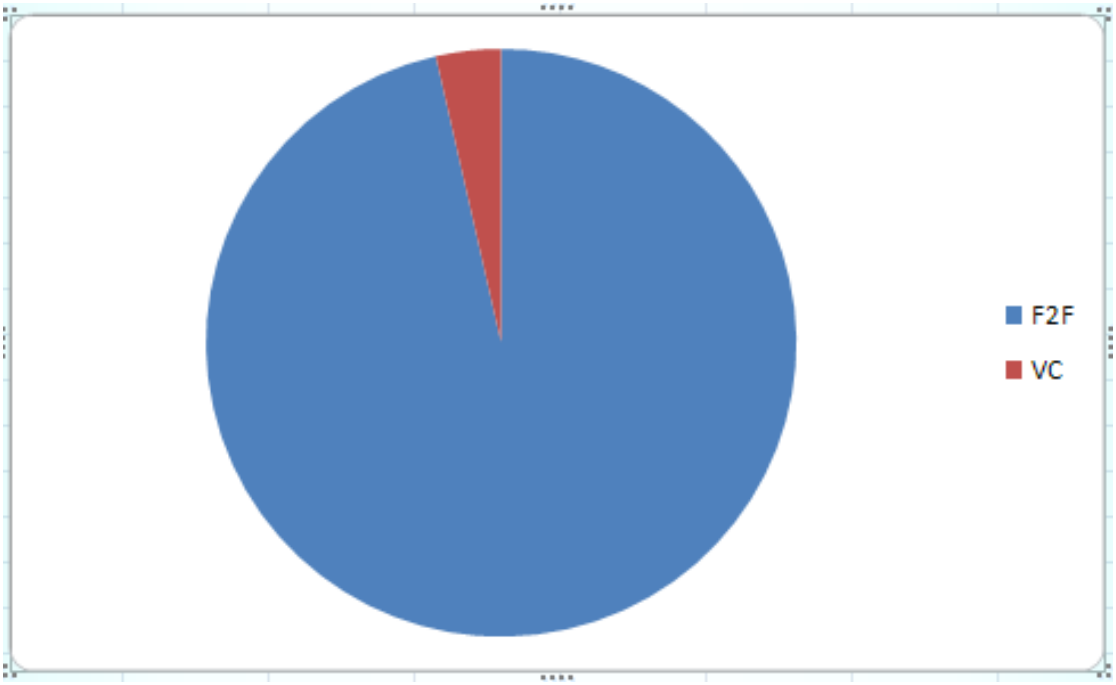


Graph 2: student class lesson response on clarity of lesson

The number of students who could hear and see the educator and resources make up the majority of the students with very few stating they had difficulty. For those students who stated sort of,

the difficulties were mostly related to their position in the class where other students where in front of them.

The students were asked in the final questionnaire whether they preferred the video conference or face-to face (F2F) lessons. Below graph three shows the results:

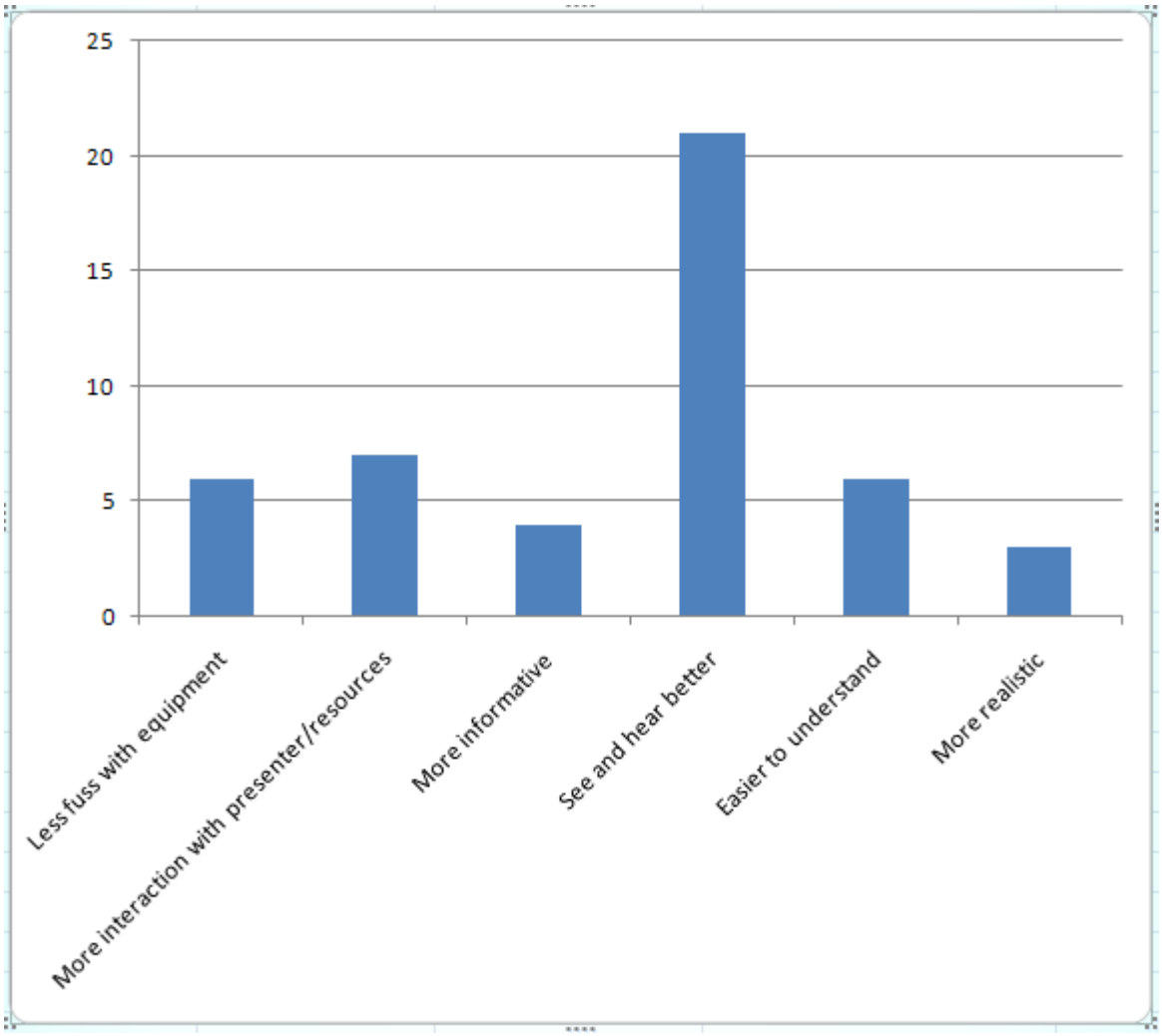


Graph 3: student preference for F2F or class lesson

It is clear that the majority of students preferred the F2F sessions. The two main reasons the students gave for liking the video conference lesson more were:
Cause you get to see what you are learning about,
Cause you can talk to other kids

This latter response refers to the video conference link where the two schools were involved in the one session.

The reasons that students gave for preferring the face-to-face lesson were varied although there were a number of themes that emerged which are represented in the graph four below:



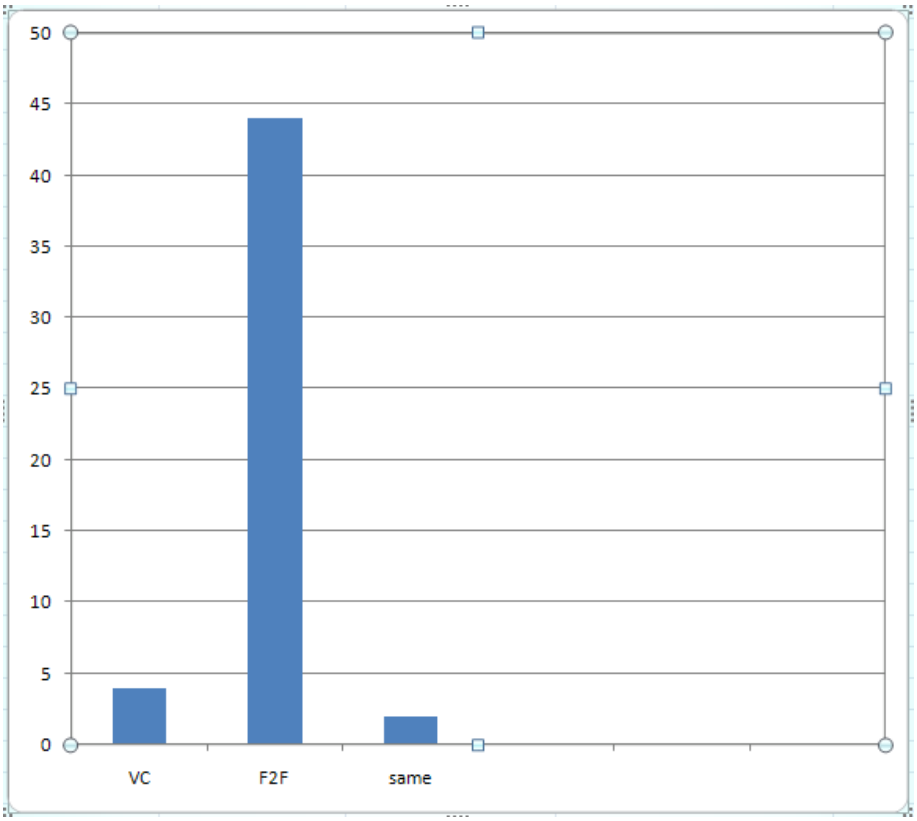
Graph 4: students' reasons for liking F2F lessons

It was not possible to capture what it was that the students and teacher were seeing on the television monitor and interactive whiteboard during the video conference, but based on the students' 21 responses above, it is clear that the ability to see and hear is much better in a face-to-face session. During the video conference (VC) lesson the museum educator was able to zoom in on the model being shown which allowed students to have a very in-depth look at the features of the model but this did not appear to be as effective as being able to see the model in the classroom lesson.

The second highest response given by students for preferring the classroom lesson with seven responses was the ability to interact with the presenter and the resources. During the classroom lessons where the model was used, the students showed great interest in being able to touch it and manipulate it. The third highest rated reasons with six responses students gave for preferring the face-to-face lesson was that there less fuss with the equipment. It was not noted that there were problems associated with the equipment during the video conference lessons.

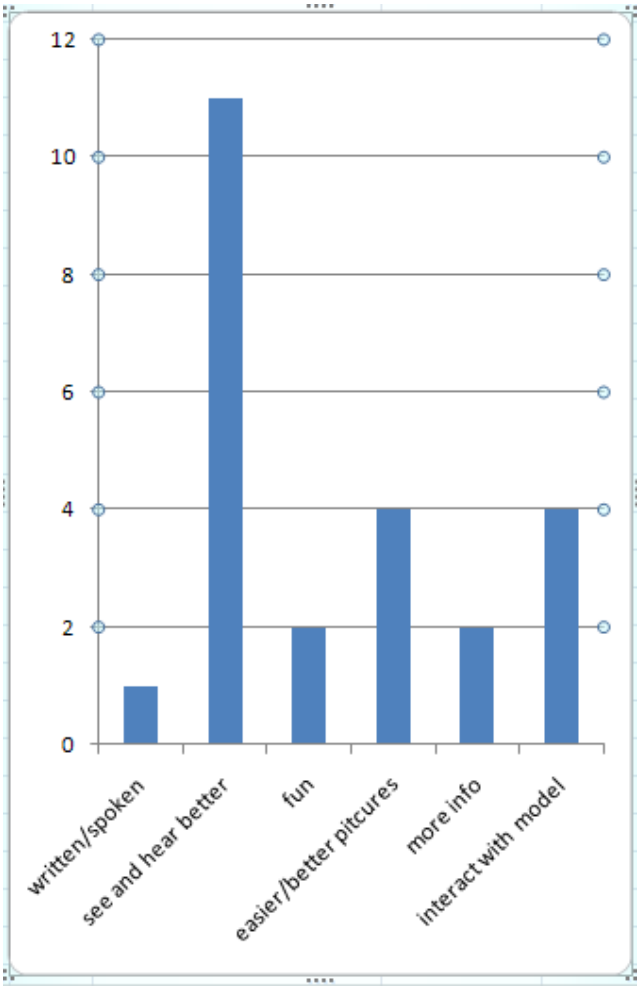
Equal third was that students found the classroom lessons easier to understand. Students did not state why it was easier but based on their other answers, being able to see and hear more clearly and interact with the educator and resources may have contributed to an increased understanding.

The students were asked if they learned more in the video conference or the face-to-face lessons. Below is the breakdown of their response:



Graph 5: Students response to learning

The response of students very clearly demonstrates that they felt they learned more in the face-to-face lesson. The reasons they gave for this are very similar to the reasons they gave for preferring the face-to-face lessons with the results presented below:



Graph 6: students' reasons for learning more in F2F lesson

The response most students gave as being the reason they learned more in the F2F lesson as shown in table six is that they could see and hear more clearly. The quality of the pictures used in table was also a factor many students felt contributed towards their learning as was the ability to interact with the resources.

One student commented that the mode of delivery in the F2F lesson, which was primarily spoken, meant he learned more. The material used on the TV monitor in the VC lesson contained more written information as shown in a screen shot taken:

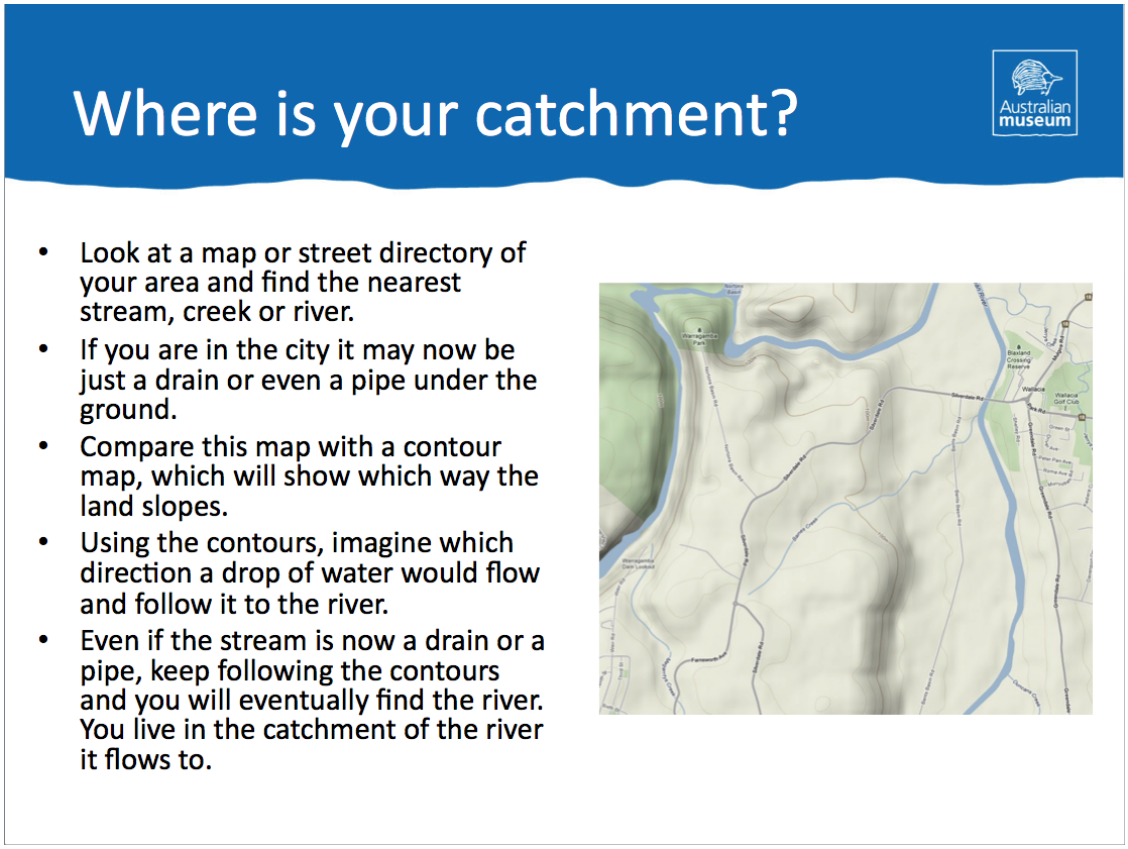


Figure 2: screen shot of information screen

It was clear in looking at student's written questionnaire responses that some of them had difficulty with written language which would have made learning more difficult in the VC lesson. Another consideration here is that students are being asked to take in two screen's worth of information at the onetime, which for students with learning difficulties would make it difficult to absorb so much information.

Teacher Surveys

The results of the teacher survey are similar to the results of the student survey. Of the four teachers who commented on the class lesson, three of them felt that the F2F lessons were more interactive, with students being able to talk more with the museum educator and ask more questions. One of the respondents stated that there should be more interactive activities for the younger students.

The teachers were also asked what they felt some of the differences to be between the VC lesson and the F2F lesson. Again, the results here were similar to the students. Some of the responses of the teachers were that the students were more engaged and could see the model more clearly. One teacher felt both the VC and F2F lessons required more interaction.

Two of the teachers commented on the importance of video conferencing and how it allows students to connect to people and places that they would not normally be able to connect to such as NASA and the Great Barrier Reef.

The teachers were asked what were some of the differences in their roles comparing the VC lesson to the F2F lessons. One teacher commented that in the VC lesson she controlled the interactions with the educator. One teacher felt there was not a great deal of difference and the other teacher stated that in the VC lesson, she provided more classroom management and encouragement to students to participate.

Observations of lessons

The role of the museum educator

The museum educator carried much of the role of teacher as well as organiser and for the VC sessions. It was observed that the sessions were well organised and that the educator had an easy relaxed style of communicating with the students where she encouraged them so that learning could be maximised. After the first video conference session, I asked her about the place of questioning in the VC lessons, below is part of her reply:

Video 1: museum educator discussing questioning

As discussed by the museum educator in the video above, she breaks the questioning up into blocks based on a sub theme of the session before moving on. As stated by the educator later in the interview (not shown in video), by questioning students she gets a good idea of their understanding of the concepts which helps to guide the progress of the lesson. This is a good pedagogical approach to take and ensures that the majority of the class can be catered for.

It was noted that while there were some opportunities for students to provide in-depth feedback, many of the questions asked during the VC sessions tended to be yes/no or one word response questions rather than open questions or questions that were open ended.

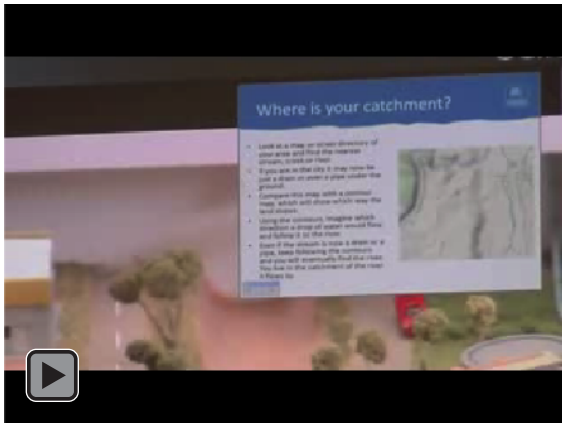
The museum educator was able to draw on the use of resources to explain scientific concepts which were clearly articulated to students as evident in figure 3:

Figure 3: the litmus test

In this example the educator was discussing with students the acidity or alkalinity of water compared to coke. Educator was able to demonstrate to students the different levels of alkalinity or acidity and get students to infer what substance was acid or alkaline and then link this to the health of rivers.

Access to the concepts using multimodal resources

Due to the multimodal nature of the video conferencing the students were able to experience in detail the concepts being explained by the museum educator. Multimodality includes (but is not limited to) written text, music and sound (Van Leeuwen, 1999), action (Martinec, 2000) and visual communication (Kress & Van Leeuwen, 1996) as modes. In video, the teacher is showing students how an oil spill can spread when it rains:



Video 2: footage of oil spillage

The video conference equipment allowed the view of the model to be focused on close up so that the students could see very clearly the phenomenon that the teacher was explaining. This gave all students in the class a clear view unlike the F2F lessons where the students were crowded around the model which made it difficult to see.

The role of the teacher

The role of the teacher was noted in both the video conference lessons and the face-to-face lessons. During the video conference lesson the teacher took on the role of nominating which students would answer questions as was indicated by one of the teacher's questionnaire answers. During the class lessons the teacher mostly acted as observers. It was not clear if the teachers had completed any of the activities sent out to them in the information pack sent to them by the museum educator prior to the VC session.

Had teachers provided the opportunity for students to participate in learning based on the topic prior to the VC lesson, this would have strengthened the lesson. It would also have allowed for the teacher to be more active during the video conference lesson. The material provided to the teachers was very detailed and provided for some excellent learning to take place that would link closely to the VC lesson. In talking with the educator, teachers do not always undertake the pre-lessons to ensure for the most video conference outcome.

The reason that the teachers took on a facilitating role for the VC sessions was many of the signals given between learners in a classroom context were not able to be replicated online. Eye contact for example, is a powerful way for the teacher to engage a student when the student's name is not known. Another signal that teachers use is pointing, another important strategy to use when the name of the student is not known. Neither of these two strategies were able to be employed due to the limitations of video conferencing. It is clear that the role of the teacher as facilitator is more important online than it is in a face-to-face lesson.

Another observation made where there was a significant difference was in the amount of time that was given over for interactions in the VC lessons compared to the F2F lessons. Students were able to ask more questions and make more comments during the F2F lessons than during the VC lessons. As indicated in the questionnaire, this aspect is valued by both the students and teachers. The students sat more passively during the video conference lessons. As was discussed by the museum educator, some of the VC lessons do contain more question time.

Recommendations

As noted earlier, one of the benefits noted by students in VC lessons is that they got to talk with students at other schools. This ability to talk with students at other schools during VC lessons is could be explored in greater detail. Where two schools participate in a video conference the museum educator could consider conducting quick polls using a show of hands and discuss the differences between the two classes. Having students speaking to students at the other school is an option that could be integrated into the lesson. This would require careful consideration in regards to what the conversation would be about and how this could contribute towards the lesson outcomes.

Where there are three or more classes these two recommendations would be difficult to put into place. This indicates that different pedagogical practices can be employed depending on the number of classes who participate in the lesson; the fewer number of classes, the greater the opportunity for interactions between educator/students and students/students.

Consider raising the level of interactivity in the VC session by allowing for more question time. This would require that questions are pre-prepared as a way of engaging students should they not readily have questions of their own. This would mean that less content would be able to be covered but this may be preferred by teachers and students.

Also providing for opportunities for students to engage with each others' ideas during the video conference sessions can be considered. For, example, if a student does answer a question and gets the wrong answer, another student could be called upon to provide the correct answer.

Students could also be encouraged to discuss their ideas directly with each other rather than the educator acting as the conduit.

It is also considering providing resources to students so that they are all required to be engaged in answering questions. This could be simply done by the teacher providing them with a paper and pen and getting them to write answers to questions or listing their ideas etc.

The types of questions posed can be considered so that a variety of questions are posed rather than mostly yes/no single word type questions being asked. The use of small groups to allow students to briefly discuss concepts to provide answers to problems posed can also be considered.

It is also worth considering calling on the teacher during the video conference sessions to provide input and ideas. This would have to be managed in such a way so as to not put unexpected demands on the teacher.

It is also worth considering getting the teacher to take on a role of interacting with the resources provided in the kit during the lesson VC lesson. For example, where the turbidity tube is shown to the students, he teacher could pass this around the class so that students could physically see and hold the object. The model used could be set up and the teacher could enact the process set out by the educator. This would involve more set up time by the teacher and may not be something that is desired by teachers if put into practice. From a pedagogical perspective, and based on results of the questionnaire, this would certainly be desired.

The use of a more student-centred approach rather than a teacher-centred approach could be adopted. It could be considered that the classroom teacher take on a greater role where interactions with resources are an integral part of the video conference lesson. For example, where the litmus strips are used, a short activity could be undertaken during the VC lesson where students conduct the test in conjunction with the museum educator. Teachers, museum interpreters and zoo guides, have long known that when children are actively engaged in learning

they are more likely to form strong memories (Kisiel, 2006) and that the use of hands on material facilitates student learning (Denton Baird, 2003).

This move to active participation would require a pedagogical shift in the lesson where less information would be provided. It may also be that resources would need to be developed for all students to engage with that would form part of the video conference lesson.

Mobile technologies such as laptops and iPads are increasingly being incorporated into the curriculum and they can be used to make lessons more interactive. Sites like Well Wisher[2] for example, allow students to individually post comments which can be accessed by all the class to provide for a focus of discussion.

Another way to enhance the interactivity of the lessons is to use online polling software such as Polldaddy.[3] Sites like these allow polls to be conducted as well as quizzes and surveys. These can potentially be then used by the teacher to provide assessment and feedback on the students.

Where students visit the museum, it is worth considering the use of video conferencing to either provide a pre or post visit. This would not necessarily link to the museum-in-a-box® kit. Rather than seeing video conferencing and face-to-face lessons as diametrically opposed, they could be seen as complimenting each other. It is also worth considering online engagement with students either prior or post the video conferencing session which could constitute a five minute session.

Conclusions

As indicated earlier in the report, video conferencing is an effective way to deliver education to students where they would otherwise not be in the position to participate in lessons such as with students in remote settings. Video conferencing also provides ready access to educators with expert knowledge. Video conferencing is an important and cost-effective way of delivering education to students in both rural and urban schools. The video conferences observed were organised and used a variety of resources to support learning.

[2] http://wallwisher.com/
[3] Polldaddy.com

This report has made a number of recommendations to be considered. One recommendation is to structure the VC lessons so they are more interactive, which has been demonstrated to be one of the most valued features of the lessons in a face-to-face setting by the students and teachers.

Using a variety of questioning techniques and incorporating the use of information and communication technologies (ICT) into the lessons are also recommendations of the report.

Some of the recommendations provided in this report would result in restructuring of the lessons increased with some extra initial input by the educator. This is an area that will need ongoing evaluation to be undertaken and the effectiveness of new initiatives to be evaluated.

STUDENT VIDEO CONFERENCE QUESTIONNAIRE

Name _____

School _____

What class work did you do before the lesson to prepare for the video conference lesson?

_____

_____

_____

What work did/will you do after the lesson based on the theme of the video conference lesson?

_____

_____

_____

What did you learn about in the video conference lesson?

_____

_____

_____

Could you see and hear the museum educator and the resources she was using clearly?

_____

If you answered no to the question above, what was the difficulty?

_____

Did you get to ask the educator a question?

_____

If yes, what was the question?

_____

Did the educator clearly answer your question?

_____

If you didn't get to ask a question, did you want to ask the educator a question, what was the question?

_____

Could you hear the questions of the students at the other school? If so, what did the students ask or say that helped you learn about the topic?

_____

_____

What were some aspects of the video conference session you really enjoyed?

_____

_____

What would you change about the video conference session for the future to improve it?

_____

_____

Are there any other comments you would like to make?

_____

_____

TEACHER VIDEO CONFERENCE QUESTIONAIRE

Name_____

School _____

How many students were in the class on the day_____

How many had permission to participate in the research project?_____

Please describe briefly the video conference lesson that the students were involved in.

_____

_____

_____

What classroom work did you do prior to the session in relation to the topic discussed?

_____

_____

_____

What work will you do after the video-conferencing session with the students?

_____

_____

Did you feel that students were able to ask as many questions of the museum educator as they wanted to?

_____

Do you feel the answers of the educator clearly answered the students' questions? If no, what was unclear?

_____

_____

What was your role during the video conferencing session?

_____

_____

Did you find the clarity of the vision and sound to be good? If no, what were the areas that were not clear and would there be a way to improve this?

_____

_____

Were the comments and questions from the students from the other school useful to your students? If yes, in what ways?

_____

_____

Will you use video-conferencing again? If so would you change anything about the way the session was conducted?

_____

_____

What do you think the benefits of using video conferencing are?

_____

_____

What do you think the draw backs of videoconferencing are?

_____

_____

Are there any other comments you would like to make?

_____

_____

STUDENT CLASS LESSON QUESTIONNAIRE

***Name*_____**

***School*_____**

What class work did you do to prepare for the lesson?

_____

_____

_____

What did you learn about in the lesson?

_____

_____

_____

Could you see and hear the museum educator clearly? If no, what were the difficulties?

_____

_____

Did you get to ask the educator a question? If yes, what was the question?

_____

_____

Did you understand the educator's answer? If no-why?

_____

If you didn't get to ask a question, did you want to ask the educator a question, what was the question?

_____

_____

What were some aspects of the lesson you really enjoyed?

_____

_____

What would you change about the lesson for the future to improve it?

_____

_____

In comparing the video-conference lesson and the face-to-face lesson, what did you notice to be the biggest difference?

_____

_____

Do you prefer video conference lesson, or face to face lesson- please explain your answer.

_____

_____

Did you think you learnt more in the lesson where the educator came to the classroom or when you had the video conference session? Please explain your answer

_____

_____

_____

Is there anything else you would like to add?

_____

_____

TEACHER CLASS LESSON QUESTIONAIRE

Name_____

School_____

Please describe briefly the lesson that the students were involved in?

_____

_____

What do you think the benefits of having the educator present in the classroom are?

_____

_____

What do you think the draw backs of having the presenter in the classroom are?

_____

_____

What classroom work did you do prior to the lesson in relation to the topic discussed?

_____

_____

What work did you do on the topic after the lesson with the students?

_____

_____

Did you feel that students were able to interact appropriately with the museum educator during the lesson to help them understand the topic?

_____

_____

What was your role during the lesson?

_____

_____

What did you notice some of the differences between the face-to-face lesson and the video conference lesson?

_____

_____

What were some of the differences in your role in the VC session compared to the F2F session?

_____

_____

Did you find one better that the other? Why/why not?

_____

_____

Were there differences in the quantity and quality of interactions between the presenter and the students between the face-to-face session and the video conference session?

_____

_____

Did you have an opportunity to speak with the Museum educator before/after/during the class visit? If so, how do you feel this improved the lesson?

_____

_____

Is there any other information you would like to add?

_____

_____

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