Zoo Connect – Extending the 'Happy Hour'

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Abstract

Fundamental to discussions around Sustainability and Environmental Education amongst Taronga Zoo Educators is the potential to include pre and post visit activities into the students learning agenda designed to extend their learning experiences. This agenda is to increase the chance of positive behaviour change, past the 4 hours approximately schools spend in zoo grounds on excursions and should their teachers choose to book into and attend them, the 45-60 minutes they spend with a specific Zoo Educator in a dedicated curriculum lesson. In August 2011, an initial trial was conducted by the NSW Department of Education and Communities, Curriculum and Learning Innovation Centre and Taronga Zoo Education Centre using a webinar program, Adobe Connect . This trial attempted to reconnect with Year 7 students from Carlingford High School who had attended a Taronga face-to-face lesson delivered by Kerry Staker, and to 'extend their happy hour', as well as to explore the potential of Adobe Connect, and similar software for all schools though NSW. After the success of this original effort, a pre-excursion tutorial was delivered to kindergarteners at Beacon Hill and Schofield Public Schools, who then attended a face-to-face lesson with the same teacher, Kerry Staker. The onsite excursion and lesson was then followed up with a post-visit Adobe Connect session in which Kerry Staker and fellow Taronga Educator, Rod Cheal, delivered the lesson and asked for specific actions to be acted upon by students and teachers at the school. The third lesson was 'Animals of the Dreaming' delivered by Taronga Aboriginal elder, Col Hardy, and Taronga educator Kerry Staker. Mr Hardy's Dreamtime songs and stories, accompanied by live footage of the Education Centre animals were sent via Adobe Connect to remote indigenous schools in Toomelah Public School and Lightening Ridge Central School. A repeat of the original Classification lesson trial was conducted in June 2012 with Year 7 students from Epping Boys High School to reassess and verify some of the outcomes achieved by that particular trial. This paper is a case study of the trials of this technology and its potential use in the future to assist zoos and other environmental education facilities to improve their blended teaching methods and advance their desired results for conservation education.

Background

Abode Connect™

Adobe Connect (AC) is an online web conferencing platform for meetings, seminars and eLearning sessions. It allows various 'pods' to display an attendance list, live web cam interviews, multiple choice polls, chats, video and Microsoft PowerPoints to be seen over an overall layout, all devised and determined prior to the lesson starting. AC sessions are hosted and run by an 'administrator', in this case the zoo teacher, and attended by 'guests', the participating onsite classroom teachers and their students. The trial lesson was named Zoo Connect. The zoo teacher, or host, must invite the students into the session by providing to the classroom teacher, a specific URL address prior to the session. This was done by confirmation email, and the classroom teacher then shared that address with the students in the class. A strong wired internet connection is required at both ends for the best results, as poor quality connections cause videos to lag and audio to skip. During these trials the maximum number of connected participants was 36, 28 of which were students at individual PCs in a computer lab at Carlingford High School, others being the Zoo Educators and observing researchers from Swinburne University (Doube & Salomon, 2012) and CLIC. Figure 1 shows the AC configuration in the initial Zoo Connect trial.

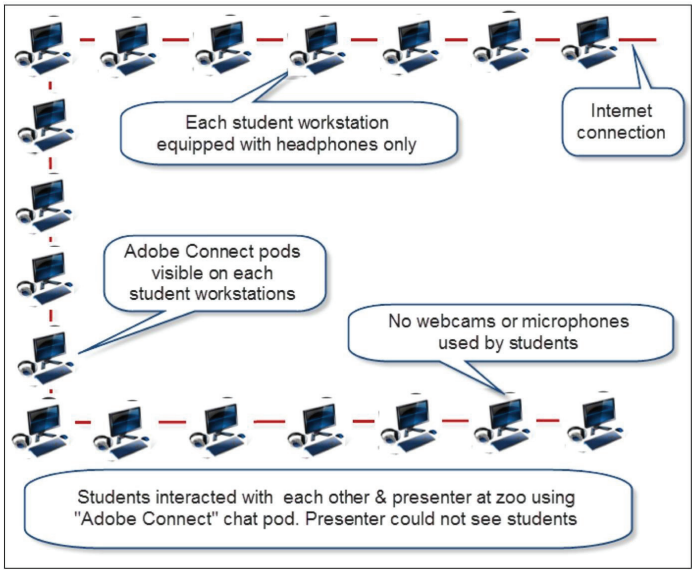


Figure 1 – AC configuration during Zoo Connect. Courtesy of Stephen Sergis NSW CLIC

The Trial

The project was conceived by educators and program developers within the New South Wales Department of Education and Training (NSW DET), Curriculum Learning Innovation Centre (CLIC) in expectation of the surge of digital classrooms and technology-assisted education. CLIC staff approached Taronga Zoo Education Centre (TZEC) as a fellow DET provider and part of CLIC itself. Zoo Educator, Kerry Staker, was assigned the particular task of working on the project and other TZEC educators were introduced as support teachers in some of the trials. The primary objective of the trial was to test the Adobe Connect platform, determine its efficacy and value in an e-classroom of the future, taking into account the usability, levels of on-task student's interaction and engagement demonstrated. Taronga teachers had a secondary objective to explore the possibilities to add value to their current lesson format and increase the likelihood that students would have greater opportunities to connect more with wildlife and make changes in their behaviour that would ensure a positive environmental outcome.

The Zoo Connect Lesson

The face-to-face lesson content was taken from the Australian NSW DET Science Syllabus for Stage 4, namely 12 and 13 year old students in their first year of high school. The lesson was heavily accessed with approximately 16500 students participating in the lesson during the 2012 school year. Delivered at the Taronga Learning Centre by Taronga Educators on a regular basis, the lesson was called and advertised under the name 'Creature Classification'.

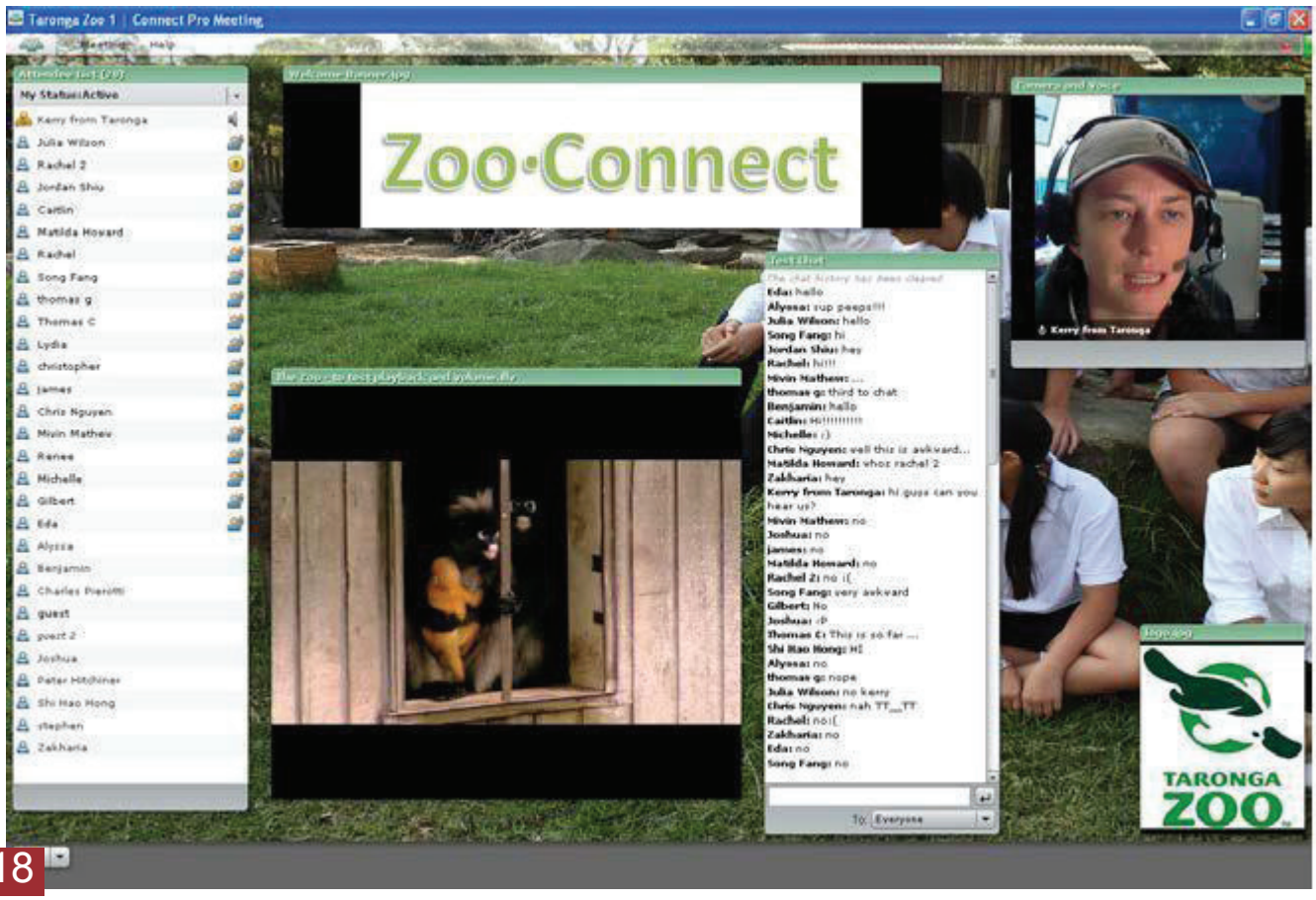
Outcomes relevant to the lesson were to:

1. Describe features of living things.

2. Classify living things according to structural features and identify that they have patterns of similarity and difference.

During the Adobe trial session, held a week later with students in their schools computer lab and Taronga teachers in an office at the TZEC, Taronga Educator Kerry Staker spoke live to the students through the Webcam pod. She also opened up a Chat Pod allowing students, who were without the capacity to ask live verbal questions, could make comments and ask written 'chat' questions. At other times the zoo teacher added multiple choice quizzes, video casts and surveys. The lesson, which lasted approximately 50 minutes, took this overall format:

- An attendance pod registered students as they logged on to the session with face-to-face assistance from their own teachers and DET CLIC staff on site.
- A video was played to refresh the student's memory of their visit and to allow them to test and adjust sound levels in their head sets.
- A pre-test pod of multiple choice questions regarding their lesson at the zoo.
- Two PowerPoint presentations with live narration by the Taronga teacher.
- Webcam of the Taronga teacher with a live animal to illustrate the lesson.



Post-test with similar questions to reassess the students learning.

• Experience survey to assess the student's enjoyment of this style of learning.

Figure 2 (opposite below) shows from Left-Right – The Attendance List Pod, Share Pod (in this case showing a video), Welcome Banner Pod, Chat Pod, and Webcam Pod with the Zoo Teacher and the Taronga logo in a Share Pod; all active over the Layout design showing students on the grass with an echidna nearby. When pods are closed by the presenter the layout is revealed as stimulus in its own right.

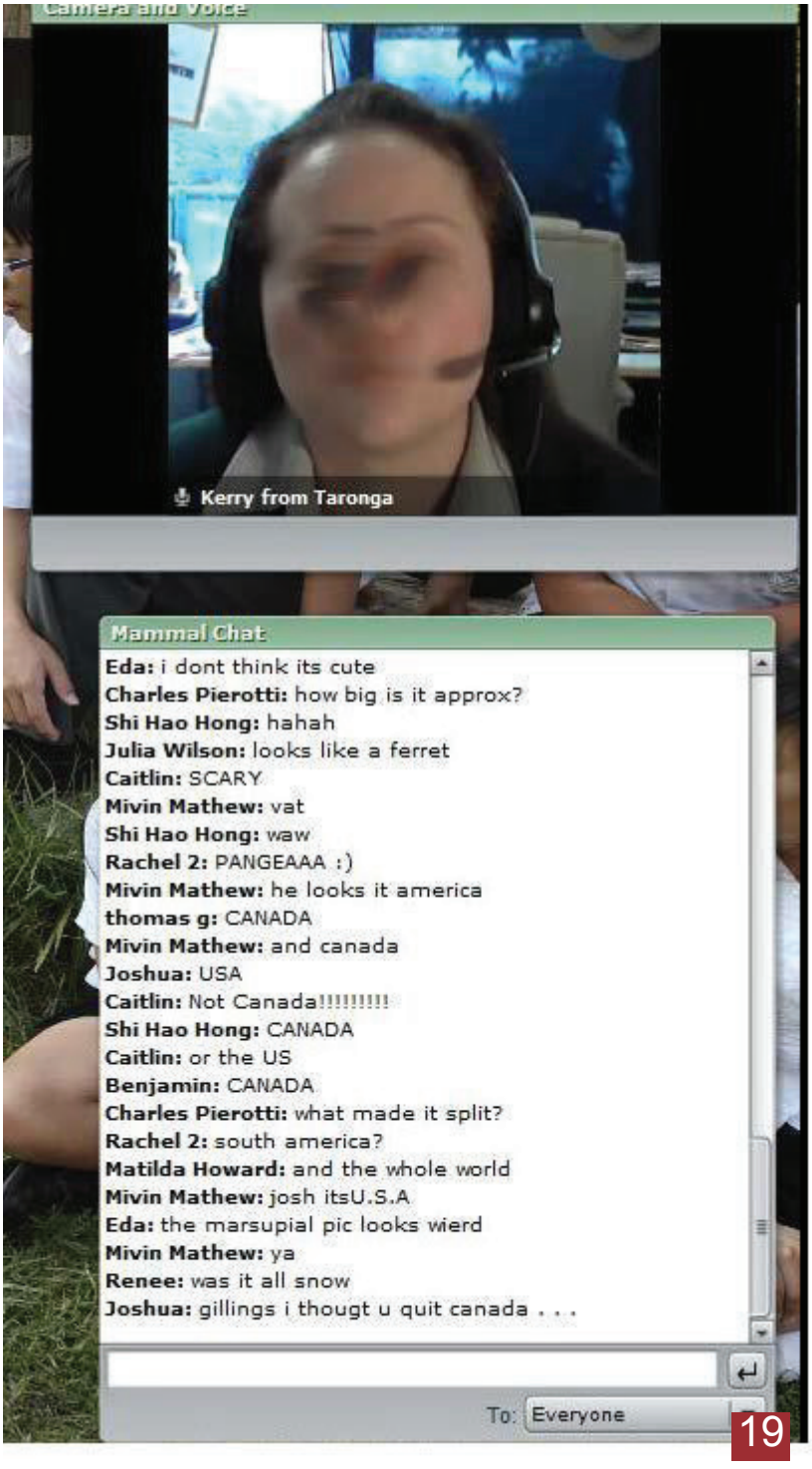
Research Design

In all, 111 students participated in the webinar lesson on 'Creature Classification' delivered over AC. The research used both quantitative and qualitative methods. A control lesson was delivered by a teacher at the schools and the subject matter to be taught was shared by the Taronga teachers to the class teachers to ensure similar content was delivered by the zoo teachers and the classroom teacher, this included Powerpoints and video. Student's behaviour was videoed in both lessons and analysed by Swinburne University (Doube & Salomon, 2012) to assess the student's on-task vs. off-task time. Of the 111 students, 100 returned pre and post test results and 73 completed lesson experience surveys.

Results

Results confirmed that AC is an effective learning tool. Pre and post test scores were tested and showed higher positive outcomes in the test group as opposed to the control group. According to Swinburne University (Doube & Salomon, 2012), the 'qualitive findings support the quantative data in suggetsing technology was the major contributing factor.' Student responses to the experience survey conducted at the end of the session revealed the students enjoyed the sessions and were appreciative of the remote learning experience. The webcam presentation and live animal access invoked enthusiastic responses and many commented on 'how lucky they were' and 'wished they could do lessons like this everyday'. Both teachers and students commented that vision of a live expert and animals enhanced their potentail learning experinece and enriched the outcomes of the tutorial. Both the students and the Taronga teacher stated that the technology was easy to use and that they could apply it in less than two minutes. However the classroom teachers were more hesitant and stated they would require further training to feel confident. The only negative responses were a result of poor bandwidth speed which caused some blurred or frozen images and distorted sound and lag times at the students' end. The teachers who prepared the initail session stated that the set up time was lengthy, (up to a few hours), but no more than when learning any other new technological teaching tool. Once created however, the Taronga teacher could, and has, used the same layout and materail over again. In contrast to predictions by teachers, students behaviour was not as difficult to manage over the AC as revealed by the videos taken by Doube & Salomon where students sat quietly and typed intensely.

Figure 3 - Chat Pod and Teacher in Webcam



The Chat Pod was the most revealing tool in the AC session. A staggering 795 entires were recorded in the first sessions and 1165 in the second. This created for the students a unique oppurtunity to look to peers for answers to questions or to join in converstaion, which in turn created a sence of community and collegial learning. These chat comments were recorded and analysised by Doube and Saloman, and off-task chatting was minimal in the first session, with 'silly' comments being censored by the students themselves. In the second session, when the 'silly' comments occurred, it took only a second for the Zoo teacher to shut down the pod and remind the students verbally that their behaviour and comments were being recorded, thus ceasing all such off task comments. One Taronga teacher,who attempted to manage the chat pod alone in one session found this difficult while delivering verbal content, but could see how simply removing the chat pod and therefore restricting the students opportunities to 'chat' could re-focus their attention.

Figure 4 – Spontaneous Chat Pod comments from students as teacher finished the lesson


Impressions of the Sessions Chat

thomas g: AWESOME
Thomas C: This was awesome
Eda: its fun.....
james: ikr
Chris Nguyen: awesome session 8D
Jordan Shiu: awesome
Renee: great
Rachel 2: Bring more animals ???
Benjamin: ikr
Caitlin: It ROX!!!!!!!!!!
thomas g: better than skewl
Rachel 2: Yes
Song Fang: awesome session
Michelle: cool^^
Zakharia: it was good i liked it
Joshua: 7 outta 10
Shi Hao Hong: yep i enjoyed it definately
Lydia: a lot
Gilbert: revolutionary!
Jordan Shiu: yp
Julia Wilson: it was interactive and a fun lesson
Jordan Shiu: yep
Rachel 2: maybe bring in a orangutan :)
Rachel: it was great! "D
Alyssa: i loved this lesson. It was the best ever!
Matilda Howard: yeah, but i couldn't tpye fast enul
Caitlin: 15 OUT OF 10
Song Fang: agreed thomas g
Eda: the animals were cute.... more live animals
Jordan Shiu: btter thanfb
Charles Pierotti: I've really enjoyed this session and hope we can do it again sometime!
Rachel 2: loved it
Mivin Mathew: it was very educative and informativei learnt new stuff
Gilbert: great work

Barriers

While chat pod behaviour and management by teachers can be addressed by teachers, the bandwidth capacity of a school will be the most hindering factor in such technology. Students were most frustrated when, for example, the presenter's voice and photos were out of sync due to lag times, many commenting on the chat that they couldn't see and/or hear at times. With time, and the introduction of Education Priority National Broadband Network standards, this can hopefully be addressed. A more intricate threat was identified when teachers from the schools were interviewed. Unwillingness to learn, develop and use new technologies such as AC were identified by the teachers as the biggest hurdle in its operation. Only new teachers were willing to participate in the trial, some more experienced teachers were heavily encouraged by their Executive staff and at least one other flat out refused. Swinburne University researchers, Doube & Salomon, feel this refusal to accept AC stems from time demands and that teachers would be more likely to incorporate this technology into their programs if they could be made aware thet their workload could reduce with successful execution, acces to 'experts' and sharing resources.

Discussion:

New Opportunities to broaden Specialist Education Experiences no matter where students are. Technology like AC offers the chance for classroom teachers to bring in an 'expert' and see them in their live setting; the expert setting being anywhere in Australia, such as the laboratory of the CSIRO, an authors office where they are working on their next book or the wood work shop of a city tradesman. Schools with difficulties caused by distance, time or circumstance such as remote central school, hospital schools, and juvenile justice centres could access experts with such equipment and capability. As Zoo Schools are in short supply and high demand, techniques such as AC could be a valuable extension device.

During the trials held over 18 months, connecting with 11 schools, Taronga teachers felt engaged with students and felt that they had a longer term connection with them that could prove beneficial in attempting to pass on lifelong conservation messages. While the 'Creature Classification' lesson outlined in this paper does not very strongly lend itself to a call to action for conservation, Taronga teachers felt it could be used in such a manner with that goal for other lessons.

Figure 5 (next page top) - Students showed photos of their practical task

The Kindergarten trial, for example, was the best example of this. The students met the Taronga teacher via AC a week before their face-to-face lesson and discussed what they were going to learn while on excursion at the zoo. Reconnecting with that teacher during their actual visit to the Taronga site enhanced this experience and built a relationship, in which the Taronga teacher, having previously liaised with the classroom teacher, asked the students to take action and build a habitat for a local species. Knowing they would see their Taronga teacher again, students were highly motivated to complete their task and build a 'lizard lounge' in their school garden so they could show photos and writing exercises about their task. When considering the long term messages modern environmental educators are aiming for, while at the same battling the minimal time spent with students face-to-face. In conclusion technologies like Adobe Connect are an absolute must into the future and as zoo educators, a way forward for our wildlife.

Follow-up

Since the trials of AC in 2011-2012, the NSW DET CLIC has been restructured and no longer exists as a unit within the New South Wales Department of Education. No further trials or roll out of AC technology is being explored at this time.

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