Flipped Streamed Tutorials in the Department of Nursing
Faculty of Medicine and Health Sciences | Department of Nursing

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Learning and assessment activity:
Virtual classrooms

Learning technology:
Microsoft Lync

Context
Background overview
Using streaming to host virtual classrooms is fast becoming a reality at many universities and Stellenbosch University is not excluded. Currently there are trials occurring in various university departments that uses Google Hangouts and Hangouts-on-Air to test streaming capabilities' potential.

At the Faculty of Medicine and Health Sciences, the SURMEPI e-Learning team has been requested to setup a number of webinars for small groups of people using Microsoft Lync. They have also been giving training on how to use Microsoft Lync to the Faculty's staff during lunch time sessions.

The challenge and possible advantages
Due to budgetary constraints, the Department of Nursing approached the Faculty's e-learning team to provide alternatives to normal satellite streaming through Telematics at the Centre of Learning Technologies. The purpose of this streaming exercise is for additional classes (tutorials) to be had, using an online platform, but also allow for real-time interactions between the student and lecturers, whether it be by IM (instant messaging) or verbal interactions. This platform would have to be able to handle up to 200 active connections.

Learning environment
The options
The alternatives presented to the Nursing Department included the use of:

- **Google Hangouts** (including Hangouts-on-Air)
  Google Hangouts allows for live video streaming for 15 active participants, while the rest would watch the feed via YouTube with a 30 second delay.

- **Microsoft Lync**
  Lync allows for live video streaming online with a larger capacity of active users (150 active users). This capacity can also be increased as needed (with prior notice). It also for users to dial into the conversation should they experience any problems.

- **Telematics**
  This option was discussed with the Nursing Department as everything is already in place to do these broadcasts. Due to budgetary constraints, this was deemed as not being an option.

- **Adobe Connect** was not considered due to the high costs involved.

Setting up
Since the expected attendance was around 200 participants and Telematics was not an option, it was decided to go with either of the other 2 options. Some research was done into how this streaming project could be done while at the same time allowing online participants to enjoy the virtual classroom experience. Another point for consideration was that the query was made with a rather short notice period, especially when considering the expected participant capacity.

Google Hangouts
The method suggested was as follows:
- Create a Google Hangout-on-Air.
- Send the links to both the Hangout and YouTube to all the participants.
- Allow up to 13 active participants to join the Hangout at any one time.
- All participants not active will follow the discussions on YouTube with a 30 second delay.
- The lecturer must always be mindful of this delay when asking questions.
- All non-active users wanting to ask questions could use either the Hangouts IM or Q&A facilities or call in via Hangouts and wait for the call to be accepted.

Microsoft Lync
- Create an online meeting request via Microsoft Outlook (you need to be an active Lync / Skype user to do this). This link can be scheduled for an extended period (over the duration of the module) to facilitate other sessions with the same group.
- Send the link created to all users and include the necessary login information:
  - the link (include the dial-in number)

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- instructions on how to access the meeting
- instructions for online meeting etiquette (mute sound when entering the meeting)
- instructions for interactions between the lecturer and class

After careful consideration, especially considering the fact that the majority of the participants are not fully computer literate, it was decided to do the trial using Microsoft Lync because of the reasons:

- It has an easy to use user-interface.
- The lecturer was already a user.
- Participants did not require Lync accounts.
- Supports larger participant capacities.
- Technical support available at the Faculty.
- IT available should further technical support (increased capacity) be needed.

A test meeting was done in order to familiarize the lecturers with the program and to identify any problems that might occur during the actual meeting. Based on this test, the lecturer sent out login instructions to the participants via the SUNLearn News Forum.

General
Challenges
Problems experienced by the participants (as reported by the lecturer, Marianna van der Heever):

- Not all students were admitted.
- Poor internet connectivity.
- Most students complained about sound as they were unable to hear the discussion.
- Person conducting the discussion can answer questions relating to the topic under discussion but cannot attend to technical issues such as sound or poor internet connectivity – extra person required for that.
- The headset would only solve some of the problems related to sound since with the headset on the lecturer would not be able to take questions from the students in the room.
- Students in the room should be accommodated with a microphone and students who join in through the link should be able to hear the questions or issues that those in the room ask.

With regards to the report by the lecturer;
- All students were admitted, but with no audio coming into the meeting.
- Meeting was open to all who received the link.
- Some of the participants' devices were not correctly setup for sound or their sound was not enabled (Wielligh assisted participants with this via the IM function).

These problems were noticed by the technical team monitoring the session remotely and prompted an investigation into the poor connection and sound quality that was experienced. The following was discovered to be possible reasons for the challenges experienced above:

- Poor internet connectivity on the user end caused problems. An internet connection at 3G speed (or higher) would suffice – this was tested using a cellphone as the session was in progress.
- The investigation highlighted 2 incidents that impacted that connectivity:
    - The presenter and the presenting assistant both signed into the session using the same Lync login details. This caused a conflict at times.
    - Although the laptop used to present from, was plugged into the network, the device WiFi (default connection) was left on. Considering that the session occurred in an area where the WiFi signal is known to be unstable, this was to be expected.
- External audio devices are required for the participants to communicate with each other and the lecturers.

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- The presenter should deal with session and focus on the content of the session, while another person should be dealing with questions from the participants as well as recording the session.

Advice
Advice for presenters:
- Each presenter and assistants to have individual Lync profiles.
- Host computers should be connected to the network via LAN cables and not WiFi.
- Host computers to deactivate their WiFi for the duration of the session.
- External audio devices, such as a headset, is a requirement (headset or conference calling microphone).
- Use the PowerPoint sharing options on Lync.

Advice for participants:
- External audio devices, such as a headset or a cellphone earpiece, is a basic requirement.
- Another basic requirement is the internet speed should be 3G or higher.
- Students must also be aware of the fact that when entering the online session, their microphones are on and the need to keep it muted until they want to speak. Unless otherwise specified, students will enter the session as being muted. If they want to make a comment or ask a question, they can unmute themselves by clicking on the microphone icon.
- Students should also use the IM and/or Q&A functionalities to pose questions while the lecturer speaks.

General advice:
- A test call, with all the online students, should be scheduled at least 1 day ahead of the class.
- A chat activity on SUNLearn could be used to help students with issues during the test call.
- Students should receive a short training session on how to participate during their course induction at the start of the year.