

**A LARGE-SCALE IMPLEMENTATION OF
SYNCHRONOUS TECHNOLOGY**

FOR

TEACHING AND LEARNING

IN THE

SCHOOL OF SCIENCE AND TECHNOLOGY

Requirements of Large-Scale Synchronous On-Line System Technology at the School of Science and Technology

- Unique course content presentation to fit local part-study environment
- Student profile governed by locality, culture of learning, generally combining Visual and Auditory channels to learn
- Teaching of Science and Technology to fit local student profile/study environment must be media rich enabled by interactivity and collaboration
- Choice of session to attend in multi-group courses
- Conduct frequency not tied in to fixed schedule (ease on logistics)
- Self-paced learning with private “chat” channel to instructor
- Not confined to campus/classroom allocated
- Playback review through archiving/recording (aligned with local learning styles of students at SIM University)
- System used to conduct staff and student briefings remotely: part of curriculum taught overseas or from overseas

Extent of Scale of Implementation

- 1600+ students
- 22 courses spread over 12 degree programmes
- Up to an average of 8 parallel sessions per evening
- Minimum of 3, 3-hr VSOLL sessions per semester, per course
- Conducted 1200+ hours of VSOLL (after 6 semesters)
- Mass student and tutor briefings used VSOLL

Dean of SST (Chair of Operations)

Quality Assurance

- Student Training on Usage
- Head of Programme Mentoring of first live session of faculty as instructor
- Daily feedback report to Dean of SST on state of operations/incidents
- Periodic annual overall feedback on quality of operations and delivery
- End of trial duration (6 semesters) evaluation feedback on infrastructural and operational teething issues

Logistical Support and Technical Support

- Timetable and Scheduling of in-house support of simultaneous sessions daily
- Learning Management System, BlackBoard Collaborate and IT infrastructure live session support
- HoP live mentoring of live sessions for pedagogy and content accuracy
- Technical help-desk and on-line live support for instructors and students

Training and Certification of Competency

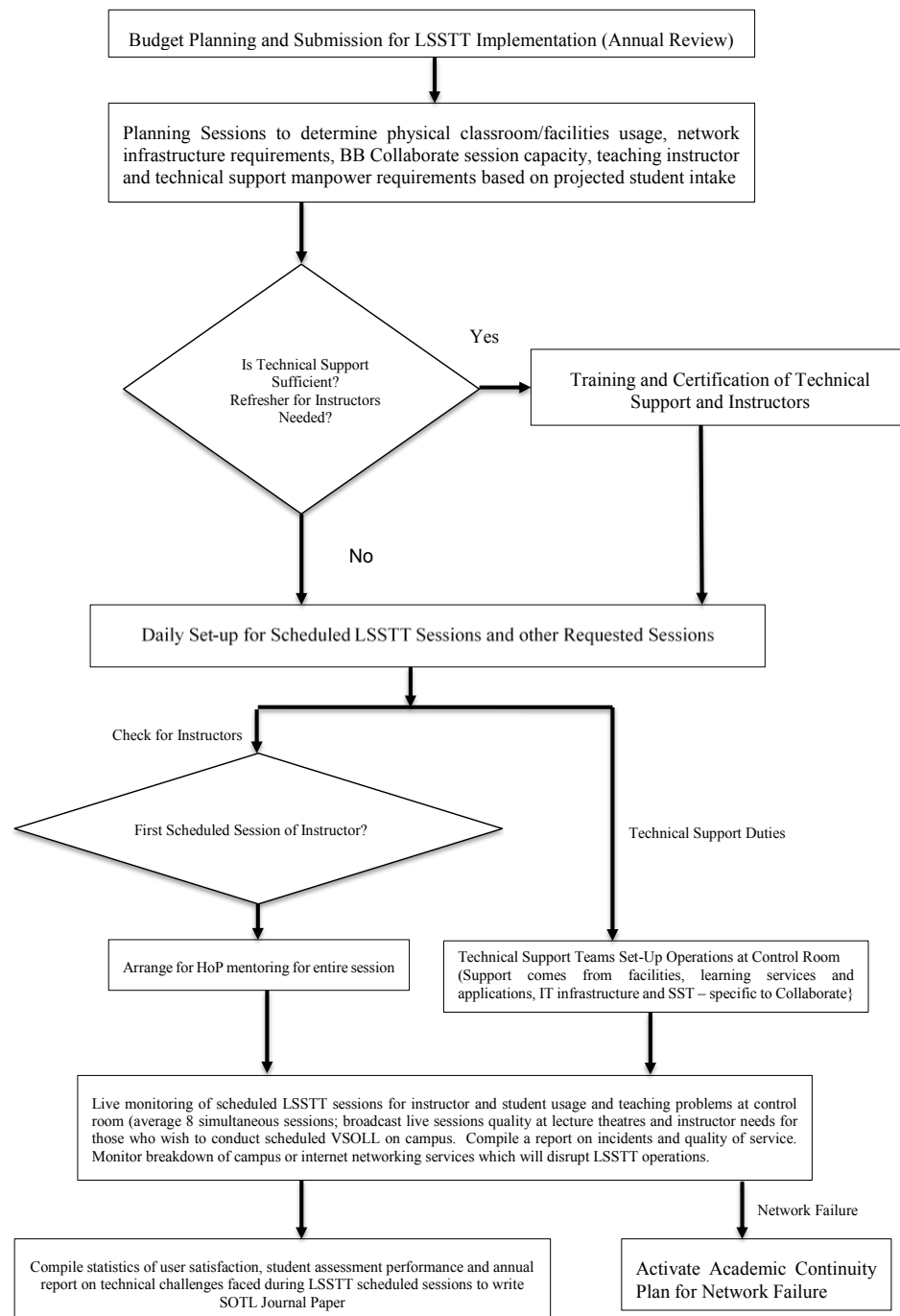
- Faculty Training and Certification
- Technical Support Training
- Refresher Training for instructors

Learning Analytics Assessments

- Analysis of Individual Course Overall Continuous Assessment Scores (In-Course Performance)
- Statistical analysis of Individual Course Overall Examination Score (End-of-Course Performance)
- Analysis of overall in-course and end-of-course performances over 6 semesters for all 22 courses
- Evaluation of student and faculty subjective feedback (on-going)

LSST Implementational Steps

- Annual Budgeting
- Logistical Planning of allocation of physical space, network capacity, computers and application software copies
- Training and Certification of Technical and Academic Support
- Quality Assurance Mechanism: mentoring, surveys, assessment of daily QoS, record Logs for incidents/disruptions daily
- Contingency for Academic Continuity

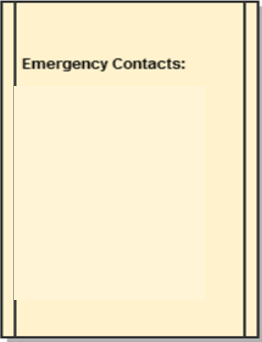
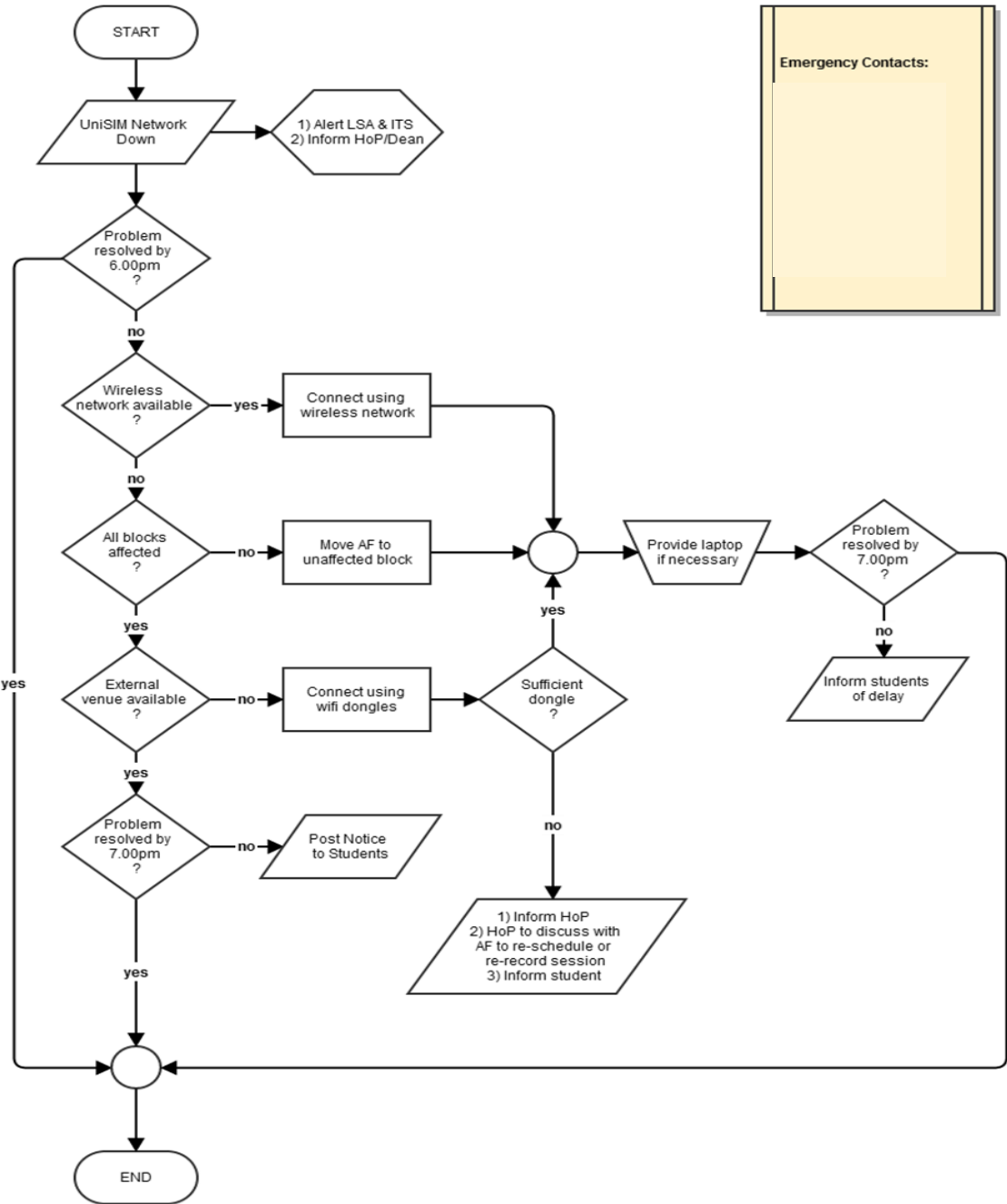


Planning and Execution Steps for LSSTT:

- Budgeting
- Facilities, IT Infrastructure, LMS, BB Collaborate Systems resources
- Training and Certification
- Daily Tech Support Meetings/Planning
- Carrying out QoS monitoring and live on-line support
- End of day status reporting and assessment of QoS
- Statistics/data collection on user satisfaction, technical problems, usage problems
- Provisions for academic continuity

Arrangements for Academic Continuity due to Network Failure:

- Critical timing checks at 6 and 7 pm
- Wireless Network Alternative if UniSIM Network fails
- Communication channels with students
- Alternate presentation arrangements



SST's LSSTT Challenges

Collaborate problems experienced by AFs

S/No.	Problem / difficulty	No. of times happened	Remarks
1	Used the "Restrict Participants" checkbox under the Participants' tab	1	
2	Difficulty in loading PowerPoint	5	Can resort to sharing desktop or sharing application
3	Slow loading of Desktop	1	Use Application Sharing instead
4	Could not see the activated link for Collaborate session	1	Refresh browser
5	Microphone problem	6	
6	Could not see what the student has typed in chat box	1	
7	Could not see words written on PowerPoint slides	1	Change to using the white board
8	Could not see Desktop	2	Did not share desktop
9	Concentrated too much on teaching but minimized the Chat log	2	Do not minimize the chat application. Must read what the students posted on the chat box.
10	Selected the wrong device for audio / microphone setup device	3	
11	Plugged the microphone/headphone to the wrong port	1	
12	AF conducted Collaborate session in Lecture Theatre. Subsequently, he conducted the actual Collaborate session late	1	Avoid confusing the students by conducting the two modes!
13	Can't load PowerPoint file because it was corrupted	1	
14	PC problems which made it harder to use Collaborate	4	

Collaborate problems experienced by students

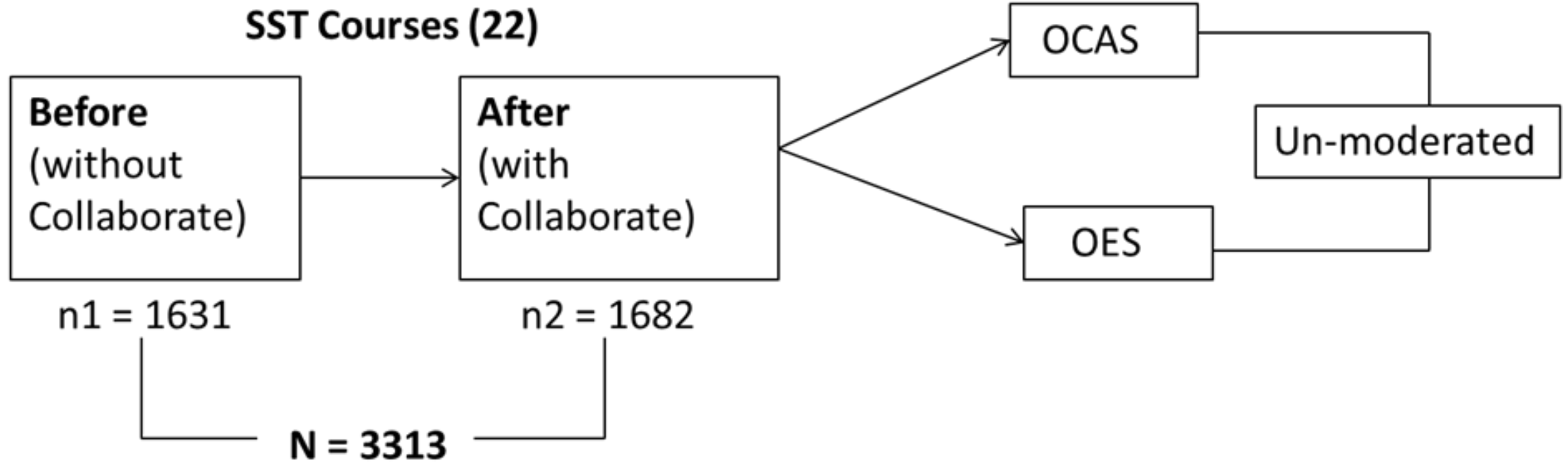
S/No.	Problem / difficulty	No. of times happened	Remarks
1	Did not know how to login to Collaborate	4	
2	Did not do audio setup	6	
3	Difficulty in hearing the instructor's voice	1	
4	Students chatted in the private room	1	
5	Students sent private message to instructor	1	Students should not private message the instructor
6	Student took 45 minutes to log into Collaborate	1	
7	Students did not know where to download the recordings	2	
8	Student could only login into Collaborate only after 1 hour has elapsed!	1	Students to view the recorded version
9	Student could only access Collaborate using Internet Explorer	1	
10	Students not enthusiastic about Collaborate. They wanted face-to-face teaching. HFS students expressed their frustrations over the use of Collaborate. They were worried that their results might be affected especially when they could not understand what was taught over the Internet. Mainly MTH and HFS students.	1	
11	Student logged into the wrong course for Collaborate session. She logged into ICT 321 instead of ICT 211.	1	
12	Student unable to view Youtube video	1	
13	Active participation via chat boxes but no participation via audio channel	2	

Competency Test on VSOLL Usage

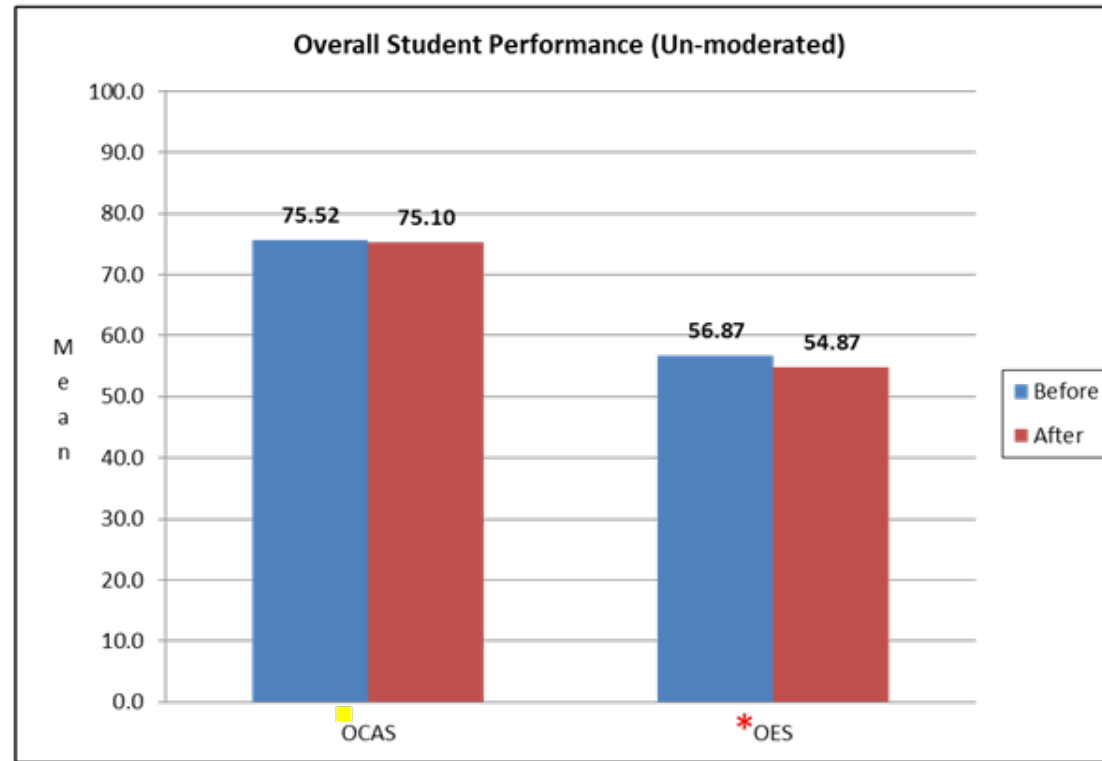
S/No.	Test Item	Put a (v) if acceptable	Remarks
1	Have he/she done the audio setup wizard?		
2	Is he/she able to test the headset and microphone?		
3	Does he/she know that he/she has to click the "Talk" before speaking on the microphone?		
4	Can he/she load a PowerPoint presentation file? <i>[Get him/her to load up a PowerPoint Presentation.]</i> He/She must be advised to use PowerPoint Presentation (Load Content) and the annotation tools to guide students through the lesson. He/she should aim to engage the student more than just giving a didactic lesson.		To be given as an advice.
5	Does he/she knows how to cancel permissions for the students like speaking using the microphone, annotating, creating text on whiteboard, engaging in text chat? <i>[Get him/her to try and disable the permissions.]</i>		
6	Does he/she know how to use the pointer and other tools on the whiteboard? <i>[Get him/her to try out the tools.]</i>		

7	Does he/she know how to use the Application Sharing feature to show documents other than PowerPoint? <i>[Get him/her to do it once].</i>		
8	Does he/she know how to use the Web Tour feature to show websites? <i>[Get him/her to try it out at least once.]</i>		
9	Can he/she upload a document (e.g. a PDF document) for the students to download? (Window menu -> Show File Transfer Library. Use a small file.) <i>[Get him/her to do it once.]</i>		
10	Can he/she do a simple poll for the students and publish the results? <i>[Get him/her to do it once.]</i>		
11	Can he/she save a chat file at the end of the Collaborate session? <i>(N.B. The chat file contains all the messages written by the students and the moderator. The moderator might want to follow up on the questions raised by the students.)</i>		
12	He/She must know how to create a shared collaborate session if he/she is teaching more than one T group. He/She must also include the other T groups. [E.g. He/She teaches T01 – T03 groups. He/She goes to T01 group and creates a shared session. He/She MUST then include T02 and T03 groups.]		To be given as an advice. <i>The AF must be enrolled in all the T groups before he/she can share the collaborate session with the other T groups.</i>
13	He/She is to be advised to disable their internal PC speaker so as to prevent echo during the lesson. (This can be done by right clicking the mouse on the volume icon on the tray and to the playback devices.)		To be given as an advice.

Impact on Students' Overall Academic Performance Before/After LSSTT



Study on the Impact on Student Performance with the Introduction of Collaborate in SST



p=0.05 (Level of Significance)

Before – without Collaborate
After – with Collaborate

Legend

- * Significant increase
(variance equal)
- * Significant decrease
(variance equal)
- * No significant difference
(variance equal)
- Significant increase
(variance not equal)
- Significant decrease
(variance not equal)
- No significant difference
(variance not equal)

Discipline	Student User Satisfaction Feedback
Facilities and Events Management	<ul style="list-style-type: none"> • I am glad that this module has more virtual lectures than classroom lectures.
Info-Comm Technology	<ul style="list-style-type: none"> • At first I was skeptical about the e-learning type of approach. After going through the e-learning lesson, I actually find it very convenient without sacrificing the quality of the lesson. The lecturer does a great job facilitating the class. • Very good approach to tap on technology such as blackboard collaborate. • The E-learning is a interactive and new way for student to engage lecturer via online discussion. • More of the web seminar will be good. • This course is one of those course that I would highly recommend to have Blackboard Collaboration. It requires a lot of interaction not just among students but also tutor to learn and view Use Case, State Chart diagram etc.
Multimedia Technology & Design	<ul style="list-style-type: none"> • Introduce more webex sessions.
Mathematics	<ul style="list-style-type: none"> • Virtual classroom seminars are highly recommended as compared to physical classroom seminars • e-learning and discussion is good. something different and independent work for us to do • E-course will be effective if it meets the learning objectives. Competence of users for e-module must be surveyed beforehand • Good video learning experience • E-learning is good
Biomedical Engineering	<ul style="list-style-type: none"> • Teaching through webinar actually makes learning much more conducive

Collaborate Excellence Day 2015

- Opening Address by Dean, SST
- Best Practices for Webinars (ICT)
- Using Collaborate to Teach Mathematics (MTH)
- A Personal Reflection on a Collaborate Session (BME)
- Bells and Whistles of Collaborate (BME)
- Presentation of Collaborate Awards

[LSSTT Reflections after 6 semesters of implementation](#)

Concluding Remarks to share....

- LSSTT is novel, implementational scale at SST is not trivial
- Many implementational challenges ranging for variation of user abilities to huge logistical/technical challenges: largely reduced through education, mentoring and training
- Changing of mindsets essential to make adoption work through mentoring
- Community of Practice set-up : Annual “Collaborate Day”
- Maintenance of high QoS through mentoring, training and community sharing of “good practices” (linked to points 2 and 3 above)
- Critical back-up alternatives to maintain Academic Continuity (“BCM”, commercially)
- User feedback and effectiveness as a pedagogical tool still on-going
- Alternatives to BB Collaborate under evaluation: Adobe Connect and Panopto

Thank You

Q & A