Learning Outcome F5.1
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Identify three or more instructional technologies that you might use and explain how you will integrate these tools into your course. Consider:

- How will you use the technology in or outside of class?
- When and how frequently will you use it?
- What is the cost to students?
- How will you train students to use the technology?

Explain how your chosen instructional technologies will enhance student learning. Consider:

- What are the advantages and challenges associated with integrating your chosen technologies into the classroom?
- How will you handle technical difficulties experienced by either you or the students?

Response

To assess students' understanding and following up of a course with a class size of 100-200 students, it is crucial to use technology, thus, reducing the load on teaching assistants and instructor and to assess student learnings. Analysis from technology used can further be used to create record of student performance and to improve content as per the feedbacks received. For in-class lecture, I consider switching back and forth between power point presentation and white board as required for explaining a concept. Typically, I expect I will use white board to solve or prove a concept, while power point to conduct key points of the concept and to provide instructions for other in class activities such as clicker or a think-pair-tweet activity. I consider using effective prompts and questions to assess student learnings. I consider providing short multiple choice/ true-false quiz questions at the end of each concept to assess learning. Answer to these will not be graded, these are formative, and use just hand raising in-class. I consider a few hand raising questions to allow students to keep away from mobile during class and to encourage a

more live community engagement. Another purpose of these quiz questions is to provide intermittent breaks. Other than these “after-concept quiz” formative assessment exercises, I plan to conduct in-class clicker poll to answer a question at the beginning of the lecture (question from the topic covered in previous lecture) and one question at the end of the lecture (question from the topic taught in the lecture). For implementing, the in-class clicker activity I plan to use mobile apps such as Poll Everywhere or Plickers, so that students don’t need to buy anything. I aim to provide instructions of downloading and the process of such clicker quizzes in the first week of the lecture along with written down instructions shared with class in the shared repository. For content sharing, I plan to primarily use university’s content sharing folder if available, if not then an admin controlled cloud based document sharing service such as drop box, OneDrive etc. The feedback received from conducting quizzes will be used to assess understand of the concept taught in class. And if required, a lectern video explaining concepts will be uploaded. The video will have in-video text comments/discussion enabled. The online discussion platform Piazza will be used to cater to student questions and make announcements. Comments and discussion on other platforms will be disabled. Only Piazza will be used for announcements, questions, and discussions to not have all on-line interaction recorded at one place. Response from students on Piazza will be encouraged by incentivizing correct response by bonus points. Different types of formative and summative assessments will be introduced to provide choice to students. Four- five paired teams will be chosen to conduct “think-pair-tweet” each week to respond to an open ended question. This will enable students to use technology for academic discussion purposes. There will be bonus points for these activities. Students can use these points if they lack points in other assessment activities, thus providing them with different ways to perform and learn.

For assessment purposes, I plan to provide a step-by-step self-assessment guide that is released post assignment. This document list of small questions to be answered in order to solve the complete assignment. This will help student identify where or which question needs to more attention or focus for

student to move forward in the assignment. Students can use this to re-solve an assignment and turn in response again to attain improved score. There will be one to two separate dedicated Teaching Assistant to cater questions of the self-assessment step by step guided assignment solvers. I recognize the importance of honor code and students will sign the honor code every time an assignment is turned in. The honor code will also be present on syllabus. These assignments will be shared on the resource sharing platform. I am curious as to have TAs use live video responding platform where students' questions are visible and TA choses five different questions from students for each assignment problem. When done in an offline method, sometimes TAs end up re-explaining same question to different students. In my experience, at most times, there are few fixed set of common problems. The key questions answered and responses to them will be posted and kept open for comments and discussion on piazza after the TA session. Another interesting way to allow students to use and enjoy technology while enabling learning is creating an infographic assessment assignment. I plan to give an infographic assignments with choice of topics and encourage students to create a 2-minute voice recording explaining the infographic. The rubric for a good infographic will be provided along with voice recording. Students will be encouraged to share this on twitter using #(topic-name)-infographic #course-name. Websites such as Creately, Piktochart, along with traditional software PowerPoint, Photoshop will be allowed.

For group project, students will be asked to submit a proposal with expected work divisions. The groups will be of 2 to 3 members to require more accountability of students. Students will be expected to summarize project on webpage. The free webpage can be hosted using Github, Diigo or institutions' dedicated server. The students can use this webpage in future to showcase their work. The execution of in-class clicker activity will need to be verified and demoed. Large class size can lead to overload on app performance which hence, needs to be tested. For using webpages for infographics, it is crucial to check what services are offered for free or what services can be purchased by the institute. For the suggested design where Piazza, web service video sharing with comments switched on, and institute's content

sharing portal, will be primary platforms of communication, it is important to integrate piazza and the online web service to allow students to direct to a single place for most discussions and questions. Further, it is noted that moderation of these by TAs will become an important task.