INFO5992 Introduction to IT Innovations

Week 2

Tutorial 1: Massive Open Online Courses – Importance of Innovation, Enabling technologies and Peer-review

Combined Summary of the Tute classes

a) Identify the key enabling innovative IT technology used in MOOCS – lots of new innovation due to the MOOC innovation!

- Automated grading tools – new technologies are enabling automated marking of assessments involving essays and even designs
- Peer grading – new theories are emerging that is making peer grading objective as well as beneficial to both the student who submitted the essay and the students grading the submission
- IT infrastructure / computing hardware – internet, cloud, smartphones, PCs, cameras
- Authoring software and support for interactive multimedia – this is making the MOOCS content developer (Teaching staff) more productive and better at delivering the content. Provides easy access, anytime and anywhere service.
- Web 2.0 – html 5, multimedia/videos, learning management system (e.g., blackboard system), online discussion/forum
- Proctoring MOOCs exam – Typing pattern analysis tools, signature checking tools
- Big data – learning from student performance, detect cheating, customized contents etc.

b) Peer-assessment for MOOCS is an area which needs further development – what are its challenges and innovative solutions?

Challenges:

- Providing personalized, qualitative feedback on assignments
- Misunderstanding the course content by the marker
- Lack of experience of the student graders / assessors
- Inconsistency and varied patterns: different grading types and different cultural backgrounds
- Marker who is experienced with the topic might be more strict than average marker; also markers with a different background to the topic
- Tendency to give everyone the same grade / hesitation to give very good or very bad marks

- Students cheating in exams
- No group contributions - how can we promote group assessments or activities?

Innovative solutions:

- Iterative training process – instructor iteratively train the students to grade the assignments with a small number of graded assignments; students are ready to go after the given grade is similar to the instructor's grade. Grading the grader can turn out to be enjoyable and become self-learning
- Good rubric – comprised guiding questions or dimensions that student work was graded on, and gradations of quality for each dimension, from poor to excellent
- Fortune cookies – instructor provides fortune cookies (snippets of feedback) to the students, which allows students to use to give feedback for the submissions
- Use of AI has the potential to radically improve rubric and also feedback development
- Use of sophisticated social networks for encouragement and acknowledgement of graders
- Use of regular link calls with the students should be done to ensure everyone is on the same page and is clear about the grading is to be done (regularly connected with instructor)

c) What are the next major innovative technological breakthrough for MOOCS?

- Automated essay marking using machine learning: AI first to analyse a large batch of essays graded by a human teachers, then applies that it has learned as it grades student papers. It allows to provide instant feedback and enables students to submit an essay numerous times.
- Support for new media format e.g., 3D video reconstruction, virtual reality headsets, Virtual Labs – We have Prof David Lowe in our school working on this – see http://www.labshare.edu.au/project/images/site/6.%20Evolving_remote_laboratory_architectures_to_leverage_emerging_internet_technologies.pdf
- MOOCs in Remote Area: Making MOOCs accessible in the remote and underprivileged areas across globe.
- Gaming Avatars: Gamification of MOOCs classroom will provide a fun and interactive way to engage students online. With every student having a gamified avatar, they would be able to interact and learn in a way as if it looks like they are in the middle of a game scenario. This will ensure that the course delivery is better too because it wouldn't be the usual content videos.

- VR+Mixed Reality Classrooms: Virtual labs and classrooms: could provide more practical based learning (e.g. learn how to become a painter and carpenter)
- Real-time translation of MOOCs course: Since MOOCs have students from all across the globe; real time translation of courses in multiple languages is required and necessary.

d) Discuss the evolution of the education industry due to the introduction of MOOCS. You may apply 'Innovation System' concept into your discussion.

- MOOCs focus on teaching subject knowledge. Traditional universities could focus on additional skills, such as teamwork, group discussion, nurturing 'soft skills, and also provide interactive forum for ideas / innovation.
- Traditional courses could get adapt hybrid model where online contents are used together with campus interactions, including supervised exams
- Easy Access – Anytime - based on person's availability /diverse people/ Location Free/ Cost, diversified Contents- wide range of course from any Universities.
- Creates a global classroom, could facilitate learning from peers around the world
- IT technologies such as Web2.0 and online forum which enables MOOCs. The wide usage of MOOCs allows to create innovative learning experience such as automated essay marking and peer assessment.
- Hybrid Classroom Content: Flipped classrooms have become more popular since the class content can now be pre-read and students can come to classrooms for fun, interactive and collaborative discussions with fellow students and peers. Eg: Y Combinator launched a MOOC course for start-ups recently where you work on an idea remotely and then come to the demo session after 10 weeks to present your idea and how the business case has evolved over the weeks (and show a prototype, if necessary).
- Popular social network website such as Facebook can be also used as an open alternative to traditional learning management systems. – important bridge formal and informal dimensions of learning and benefit. – Learners already know how to use these tools, and they need less support to become autonomous and self-directed.