FROM TECHNOLOGY TO PEDAGOGY - USING E-LEARNING INITIATIVE TO DRIVE PEDAGOGY REFLECTION AND REDESIGN

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Abstract

Using technology to enhance teaching and learning has been a heated discussion and a well-explored topic in contemporary education. The adoption of educational technology has shed light on addressing the challenges presented by the learning styles and habits of millennial students. It is now common to see teachers using multimodal teaching resources, interactive tools, online learning management systems, and the like to empower and engage their students. This paper presents a case study on an e-learning initiative at The University of Hong Kong with three cases of teachers developing their Small Private Online Courses (SPOCs) with the support from the e-learning unit. The project documents were reviewed and teachers and project team members were interviewed to understand their collaboration model and their perspectives towards the initiative. Findings revealed teachers' positive experience with and attitudes towards e-learning, as well as the collaboration with the e-learning unit. More importantly, all three teachers reported their pedagogy reflection and redesign in the process of developing their SPOCs. Lastly, challenges were identified and some strategies to tackle them were shared in the hope of provide recommendations for institutions and teachers facing similar difficulties.

Keywords: e-learning, SPOC, pedagogy, learning design, outcome-based learning.

1 INTRODUCTION

The higher education teaching and learning landscape is changing and “today's students are no longer the people our educational system was designed to teach” [1]. These two concepts “teaching and learning in higher education” and “students changing needs” are the key driver which makes e-learning an important issue in tertiary education system. Furthermore, in the same study, they also noted that changes brought by the society and technology contributes hugely in the way we communicate and learn today [2]. In the most recent efforts, universities are redesigning Massive Open Online Courses (MOOCs) into Small Private Online Courses (SPOCs) [3]–[5] and focusing on using these courses as a supplement for on-campus teaching through the exploration of blended or hybrid mode of teaching [6]. While others argue that the SPOCs as a concept is not new [7], referring to the long history of distance education, nevertheless, it puts e-learning into the spotlight again. As Fox [4] stressed that MOOCs can be converted and fit into the on-campus teaching, we can say that it does add value into the current teaching model that we have. But the 21st century learners or the “digital natives” [1] being tech-savvy are having these expectations from their instructor to support their learning needs. In other words, today’s learners are expecting their professors to “incorporate technology into their teaching and to be proficient in using it” [8].

Under such background, The University of Hong Kong launched a 2-year project, Using Small Private Online Courses (SPOCs) as Vehicles to Address Fundamental Issues in the Effective Design, Organization, and Assessment of Learning Outcomes in Massive Open Online Courses (MOOCs), aimed at investigating and developing new approaches to the pedagogical design for delivering tertiary level courses online. Adopting a design approach [9], the project team iteratively produced learning designs, tested those designs and revised the designs on the basis of findings.

This paper aims to expand the knowledge on how the e-learning initiative drove pedagogy reflection and redesign in this SPOC project. Laurillard [10] mentioned that documenting good pedagogical design and finding common patterns that can be shared and further developed can help improve teaching and learning. Insights from this paper address the following questions:

1  How was the e-learning initiative unfolded?
2  Who are the people involved in the initiative and what are their roles?
3  What are participants’ experiences with and attitudes toward e-learning?
4 What kind of pedagogy reflection and redesign emerged from the initiative?
5 What are the challenges faced and the effective strategies adopted to tackle them?

2 METHODOLOGY

This study will use a multiple qualitative case studies in unfolding how the e-learning initiative drove pedagogy reflection and redesign in these SPOC projects. “In a case study, the case is a sharp focus of attention” [11]. Researchers use this approach to better understand a phenomenon and to illustrate an idea or an issue. In this case, pedagogies and strategies vary from one instructor to another and at the same time, challenges and experiences in implementing these courses varies on a personal level. Hence, this study requires a thorough examination of the circumstances involving the application of SPOC in higher education. In this way, other instructors will be able to draw out naturalistic generalization [12] when they recognize similarities to their own teaching or if they find these cases interesting.

The teachers invited to participate in the project all possess a track record of achieving (i) consistently high student evaluation ratings, (ii) success in facilitating students’ achievement of learning outcomes through learner-centered approaches, and (iii) exemplary levels of student engagement. The courses are introductory-level and cover a wide range of disciplines. The target audiences of these courses vary from HKU undergraduate students to senior secondary school students in Hong Kong. Three cases completing the design-test-evaluate circle in the first stage of the SPOC project are presented and discussed. Applications of these SPOCs vary in different levels of integration based on the instructor’s commitment and willingness to adopt e-learning. Showcasing these various implementations will provide a spectrum of the utilization of SPOCs and will deepen our understanding of how instructors adapt to these changes in their on-campus courses.

Participants’ interviews will be one of the main sources of data. These semi-structured interviews will be collected in the following manner:

1 There will be a pre-interview before the start of the course and a post-interview at the end of the course. The total engagement for each interview will be roughly 1-2 hours.

2 Aside from the pre and post interviews, the researcher will also conduct post-class short interviews of 10-20 minutes each during the implementation of the course. The schedule of these short interviews will be predetermined during the pre-implementation interview. The researcher will ask the participants to identify the key changes that he/she considered in developing the course. These interviews are aimed to validate the key changes that were highlighted in the pre-implementation interview against the actual implementation of the course.

3 RESULTS

The project unfolds with an interactive design approach, assigning one project team member to each course and work closely with the instructor. The project member handles multiple aspects of the project, including but not limited to course design, instructional video production, course implementation management, course evaluation, and research. Each course team has its own collaboration model based on the preference and working style of the team members, allowing sufficient flexibility and comfort in the process.

3.1 Course 1

3.1.1 Experience and Attitudes of Teacher 1

When asked to describe his role in the course, Teacher 1 mentioned that his role had substantially changed in comparison to the previous run. From what was once a one-man show, the entire course design and development transformed into an orchestra of teams; one that handled creation of lecture videos; another that designed classroom activities; and another team that handled the implementation of the course in terms of managing the courseware and coordinating different activities. As he pointed out, “I guess my role is both bigger, and smaller, compared with before. Bigger, in the sense that I need to work on more pedagogical things...we have to [make] videos and come up with classwork. These are things that are new, and I have to think about them and come up with designs that I haven’t tried before. It’s also smaller in the sense that it’s not just by myself. I have to rely on a number of people to help me accomplish things.”
Teacher 1 expressed how developing his SPOC was a “hugely positive experience” for him. Even though he was stressed out for six to seven months before launching the course, once the course was complete, he felt a big sense of achievement and satisfaction: “You feel stronger, you feel energised, and so it’s a hugely positive experience, even though there are lots of imperfections.”

3.1.2 Pedagogical Reflection and Redesign

Teacher 1’s reason for conducting a SPOC is that he is “advocating or promoting [to] people to experiment with these kind of new pedagogies. [It is] not saying this will definitely be good, but there has always been coming up with new ways of teaching, because students are coming with a new way of learning”. Knowing that digital natives have a different way of learning, the teacher needs to accommodate these changes. He also highlighted that his subject being “a common core course, it's not a discipline-specific course, the motivation of spending more energy, or investing more of the time, or being more motivated in the course is not high.”

Hence, in redesigning his flipped classroom, he came up with a framework that guided his practice of designing engaging classroom activities. These are: 1) credit bearing; 2) collaboration; 3) co-creation; and 4) competitiveness. By adding these elements, he discovered that his in-class time became more engaging. He mentioned one instance that “[a] students, like solving the Rubik’s cube, they don’t know how to solve it, they pull out their laptops and start watching the videos. Which, to me, is good, because it’s just in time, learning. I don't care when you learn it, I just care you eventually learn it, you appreciate that. That, to me, is perfectly legitimate, and is good, actually. They feel the need to actually pick up the skills, or concepts”.

3.1.3 Challenges and Tackling Strategies

One of the biggest challenges that the course team and particularly Teacher 1 experienced was the alignment of the course learning outcome with the assessments. He highlighted this in one of his statements: “I realise that there is a problem, there’s an issue that we need to tackle, in the revision of the course, is the alignment of all these classwork activities, and expectations, and assessments”. During the course production, the question of ‘what to do during in-class time?’ was one of the puzzle that Teacher 1 invested time in solving. Because of this, the alignment of the course was overlooked. He said, “I’ve mainly focused on the degree of engagement in the classroom activities” and he further added that the alignment problem was one of the things that he wants to focus on in the next iteration of the course.

3.2 Course 2

3.2.1 Experience and Attitudes of Teacher 2

Having taught this course for 10 years, Teacher 2 witnessed the change in his students’ learning habits: “The attention span is getting shorter and there are so many things you can learn without even coming to the university.” He elaborated that it has come to the point where the combination of technology and students’ learning style has challenged the teacher's role in the classroom: “Now I see my role as a teacher is not to teach, is actually to stimulate their interest on a big topic like mental health or a small topic like stigmatization of our mental health.” He views his role has shifted from knowledge disseminator to one that stimulates students’ interest in topics, thus igniting students’ motivation to seek for knowledge.

Teacher 2 hoped that the SPOC would be a change driver in getting his students to become more active learners in the class. He expressed past frustrations in his ability to teach due to the didactic style of lecturing he adopted. As an advocate of active learning, he hoped that the integration of technology would be one driving factor in getting his students to participate more in his class.

3.2.2 Pedagogical Reflection and Redesign

The original format of Course 2 predominantly composed of instructor-led lectures, tutorials, and a core experiential learning activity. Through working with the e-learning unit, a blended version of this course was developed with the aim of better achieving learning outcomes by blending face-to-face classroom activities with online components.

One of the key components of this redesigned arrangement was to repackage didactic teaching materials into bite-sized online videos in order to make more effective use of class time. Some of these videos portrayed concrete concepts, while others involved street-interviews with students on-
campus. These videos not only allowed students to digest meaningful content in a shorter time-frame, but also presented a window to broad perspectives among the general community. During class, videos were shown and used as an effective starting point for small group discussions. Teacher 2 expressed that, “each student...were amazed by the funny videos...they knew they could have fun in class, they could discuss something that is not quite related to the lectures, so they can think outside the box.”

Another feature of the blended mode was to increase instructor-to-student and student-to-student interactions in the classroom. Interactive tools like Mentimeter and online forums were used to facilitate discussions. As Teacher 2 indicated, “using mentimeter in class, they find interesting and fun to have in the lectures...It actually makes them more focused...feel they can participate in the learning process.”

The facilitated use of videos allowed students to have more class time to engage in meaningful discussions of course content. For the next iteration, the course team will take one step further to develop more challenging in-class activities that foster deeper student interactions with course content and with each other.

3.2.3 Challenges and Tackling Strategies

The process of creating instructional videos posed as a key challenge for Teacher 2. Writing a script, modifying it, and reading it in front of the camera was, as he described, an unnatural and awkward experience: “reading the script and talking from my mind is actually quite different, so I have to follow the script...”. Researcher 2 also noted in her reflection journal that the first draft of Teacher 2’s scripts were written in a rather formal language with the content focusing on cold, hard facts. Course assistants would review the scripts before filming “to make it more conversational, and changed the content so that the facts were revealed through examples that students could relate to easily.”

It was apparent that the filming process was challenging for the teacher. The experience of scripting lectures that were once delivered freely was taxing and time-consuming for him. Reading the final script naturally in front of the camera was also something that required a lot of practice. To tackle these challenges, Teacher 2 indicated that the e-learning unit “actually helped a lot in terms of preparation and developing the script and reading and understanding the scripts.” Researcher 2 also indicated that the filming team “…would try to boost [Teacher 2’s] energy by shouting encouraging words like “[Energy!]” and giving pointers on improving body posture...keeping an upbeat vibe in the room was important for those initially uncomfortable with filming.”

The second challenge that Teacher 2 expressed was about the connection between online and offline learning: “It’s always a constant worry for me that the online learning and offline learning don’t match and the students will feel there is no need to the video watching because you are not talking or you are not referring your lecture back to the video”. This is a valid point to consider when we tackle the design of in-class activities and making sure it relates back to the concepts taught or issues raised in the instructional videos.

3.3 Course 3

Unlike course 1 and 2, course 3 is launched fully online to local senior secondary students. Therefore, the production and implementation process was somehow different from the previous two courses.

3.3.1 Experience and Attitudes of Teacher 3

As Teacher 3 reported, she considered her role in the production stage as the content provider, while the production team packaged the content into video and other online format. As to the implementation stage, due to the new learning mode, her role shifted towards a promoter, advocating for the course and e-learning to fellow teachers and students.

Teacher 3 identified her primary goal of participating in the project was to get firsthand experience on e-learning. At the same time, she’s hoping this initiative could help students gain both knowledge, which is basic cultural theories and studies, as well as skills, namely self-directed learning on an online environment. Reviewing her general experience of her teaching the SPOC, Teacher 3 expressed her high expectation of the impact of SPOC to Hong Kong learning environment and learning culture. As she pointed out, Hong Kong is quite an assessment-based society, and the new teaching mode could help promote the new learning attitude, which “allows students to learn autonomously and independently”.

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3.3.2 Pedagogical Reflection and Redesign

Since the SPOC version is a shortened and condensed version of the original on-campus course, the first task was to redesign the course syllabus and structure. Researcher 3 first observed the on-campus course, and identified the key knowledge points of each session and the connection between them. The revised course structure was then proposed by the researcher and modified by the course teacher, with updated learning objectives, major topics, detailed activities, and assessment tasks. Most importantly, since the course was fully online without face-to-face instructions and interaction, the course design had to serve the purpose of both delivering the core content knowledge, while scaffolding students’ learning experience.

Teacher 3 identified three key types of activities to be adopted in the online course, namely instructional videos and readings, knowledge check quizzes, and final assignment. Knowledge check quizzes after each instructional video and reading serves as formative assessments, helping students to check understanding of key concepts and theories. The final assignment serves as the summative assessment, assessing students’ mastery of knowledge and skills.

Another major component of the SPOC was the discussion forum. In order to trigger meaningful discussions among students, discussion prompts were carefully embedded in the learning sequence. For example, in session 2, mini-movie analysis, students were first introduced to the genre with an example mini-movie, True Move. After viewing the mini-movie, they are presented a poll asking about their attitudes towards the mini-movie, and then shown the results of their peers’ voting. It is clear that different people perceived differently towards the same piece of work, so a discussion prompt asking about reasons for their perception was placed to encourage students to share their ideas.

3.3.3 Challenges and Tackling Strategies

Teacher 3 identified the biggest challenge of adapting the course to a SPOC was to make the language as accessible as possible while retaining the depth of the theory. As quoted from her interview:

"...in the face to face teaching you can adjust your own speech and maybe what you're going to say according to the student's reaction. I can adjust what I want to say, what I'm going to say based on the student's facial expressions. I can detect whether I should spend more time on particular points. But then in the SPOC filming, I could not see my students so I may not be able to predict whether what I'm going to say is interesting to the students."

The same challenge was also identified by the researcher, as indicated in her reflective journal:

"While the teacher has a better understanding of the content, her language tend to be more textbook like, with quite a few jargons and long sentences with several clauses. And due to her busy schedule, the script was always ready a few hours before the filming, where there was not sufficient time to polish it. And these problems were left for post-editing to solve. Sometimes captions and illustrations can help, sometimes we had to shuffle the sequence of the sentences to make more sense, and sometimes we had to cut away some sentences that were too deep and added follow up readings as alternatives."

It was apparent that teaching in the classroom and teaching in front of the camera could be substantially different, and the strategy adopted by the team was to add another pair of eyes in the design and production of the content. The teacher’s input was first consumed by the researcher, and her interpretation was then reflected in the video and approved by the teacher. The working cycle ensured that the video content was fairly accessible.

Another major challenge was in the implementation of the course. As students come from different schools and different years of study, their background varied significantly, from previous subject knowledge to English skills. The challenge of one-size-doesn’t-fit-all was then presented. As teacher 3 indicated in the post-course interview, she had identified a few areas in which students found most challenging, and wished to enhance them by adding more content-language integrated materials in the next iteration.

4 CONCLUSIONS

The adoption of e-learning is not only the selection of teaching tools and materials, but also a reflection and redesign process on pedagogical strategies. From the three cases, teachers involved in
the project shared a generally positive attitude towards their e-learning endeavours. The interactive approach adopted in the project was well received by teachers, who all agreed that the initiative was smooth and successful because of the support received from the e-learning unit. This highlights the importance of collaboration in conducting e-learning practices in teaching. In perception of their roles in teaching, all of them pinpointed the shift from a lecturer role to a more complex yet less-dominating role: a content provider, a facilitator, a mediator, etc. There is also a common factor in their reasons for starting this initiative in that they wanted to adapt their teaching to fit students’ learning style and habits in the information age.

Under the outcome-based paradigm adopted by the institution, the three teachers all went through a reflective design phase in which they re-examined not only their intended learning outcomes, teaching activities, and assessment tasks, but also the alignment among these elements. Unlike in conventional lectures where teaching could be relatively spontaneous, SPOC content is pre-designed with details reviewed by multiple pairs of eyes. This allowed teachers to evaluate whether the learning outcomes were well addressed by the activities designed. Although alignment of the elements was identified as a challenge by Teacher 1, it was also clear that efforts had been made and plans for revision would accommodate this reflection.

Another major pedagogical consideration shared among the three teachers was to use e-learning to promote active learning. Through gamification (Course 1), facilitated use of videos for in-class discussion (Course 2), and fully online self-directed learning (Course 3), students were empowered to take ownership of their own learning. In the adoption of e-learning and supporting technology, teachers embedded their pedagogical intentions in their design and maximized them with proper e-learning tools.

One common challenge faced by two of the teachers was the production of the instructional videos. Even if they were all fairly experienced teachers, the difference in the mode of delivery created the challenge in the elaboration of topics, use of language, as well as minor details such as gestures and body postures. One recommendation suggested by all three teachers is to work with a professional e-learning team, providing technological support as well as timely feedback as the first-hand consumer of the content. It was clearly demonstrated that this interactive approach allowed multiple perspectives in the design process and sufficient technical support.

With these cases, e-learning served as a new dimension to the teaching landscape. Looking at their teaching from another perspective allowed teachers to revisit and reflect upon their teaching. This e-learning initiative provided an opportunity for teachers to enrich their courses, advance their practices, and thus reshape teaching and learning in higher education. Their experiences provide valuable insight into the benefits and challenges faced in adopting e-learning and how to further develop and establish the e-learning environment for instructors and institutions. While e-learning itself is not the solution to challenges of teaching evolved with technology enhancement, it provides the momentum to drive change and evolve teaching philosophies and practices.

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REFERENCES

APPENDIX

Interview Questions:

1. How would you describe your role in the SPOC?
2. Why did you decide to deliver your course as a SPOC?
3. What are the key pedagogical strategies (i.e., key features and considerations in the learning activities designed for students) used in this course? Describe the main design considerations for the course overall and for each of the sessions.
4. What are the pedagogical strategies used in the design of course assessment tasks and feedback mechanisms for the course overall and for each of the sessions?
5. How similar or different is the SPOC course from the face-to-face/blended version of the course in its pedagogical approach and learning design?
6. What did you find most challenging in adapting your topics for the SPOC? What strategies did you use to address those challenges?
7. Reviewing the analysis results, and your experience of interacting with the students in this course, would you wish to make any changes to the design of your SPOC/ MOOC? If yes, describe and explain.
8. What did you want to personally achieve from delivering this SPOC?
9. To what extent do you think you have achieved your goals? What factors do you think facilitated or hindered the achievement of those goals?
10. What suggestions would you want to share with other members of the faculty regarding delivering a SPOC?
11. Overall, how would you describe this SPOC experience? How was it beneficial or disadvantageous?