

Instructional Strategies Study Via Classroom Observation of MOOC

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Abstract. With case study of MOOC, this paper suggests a perspective to observe experts' instructional strategies for teachers' professional development. There are four MOOC courses, which come from different fields (art, social science, and computer science), selected to focus on the analysis of instructional strategies including instructional design & lesson planning, interactive learning environment, comprehensive assessments in this paper. This method would help pre-teachers and in-service teachers engage in reflective thinking about classroom practice and contexts, and apply appropriate strategies and adjustments to curriculum and instruction.

Introduction

MOOC (Massive Open Online Course) is one of popular online learning modes nowadays. More and more open college courses are served on the Internet. For general learners, they get used to apply MOOCs for a daily learning resource. While online courses have been part of the educational landscape for a couple of decades, MOOCs offer two innovations [1]: First, a MOOC is open and free that means anyone with Internet access, and without having to meet any course prerequisites, can register and complete the course. Second, a MOOC is massive that means there is no limit to the number of people who can take the same course.

In addition to traditional web-based course materials (e.g., text, audio, video, and problem sets), a MOOC provides interactive user forums that help build a collaborative virtual online community among teachers, students, researchers, and educators [2]. Many leading universities, for-and non-profit organizations and prominent educators have been working on MOOC design and implementation during the decade so that The New York Times announced 2012 became "the year of the MOOC" as several well-financed providers emerged in association with top universities (e.g., Coursera, Udacity, and edX). Recent statistics on MOOCs indicated that 26.5% of US universities; 16.5% of Indian universities; 16.2% of Chinese universities; 3.9% of Canadian, Australian, and UK universities provide MOOCs [2]. Some researches explore some ways of integrating existing MOOCs into curricula from an instructional designer's perspective, and discussion of the curriculum and instructional design supports. For example, MOOCs could be integrated in post-secondary curricula in several ways [3]: (1) Using MOOC components as learning objects; (2) Flipping classroom with MOOCs; (3) Developing challenge courses for MOOCs; (4) Transferring credits from MOOCs; (5) Providing learner services to MOOC participants.

However, few educators and instructors realize that MOOC, as one kind of free resource, should play an important role in training teacher students and in-service teacher, especially in teachers' professional development.

In china, most colleges have made a learn-from-each-other policy that requires each teacher to watch other teachers teach at least twice a semester and write the reflection reports to hand in. No doubt it might be beneficial for fresh teachers considering their rare experience in teaching. Unfortunately, this policy is more unlikely to be effective among the experienced teachers who are too familiar with other fellow teachers to be difficult in getting new skills. To a certain extent, the emergence of MOOCs would open experienced teachers' minds and motivate them to explore better strategies in practice.

According to classroom observation, MOOC could be turned into one sort of resource on teachers' professional development. There are several reasons why it's advantageous to teachers. Firstly, in the case of "live" observation of MOOC, we can pack many observers into a classroom without providing a ridiculous spectacle to those presents[4] (i.e. there are more observers than the observed), at the same time, prevent observers from interfering teacher and students in the class as well; secondly, videos of MOOC generally recorded with high-quality technology allow us to view experts from a class again and again; thirdly, MOOC can satisfy those who look for unknown segments of class and make distinct classroom observation plans for trainers, which Pennington suggests that at first observation should "be carried out first using a segment of class taught by someone unknown to any of the candidates and previously evaluated by the trainer." [4]

Furthermore, considering economic value, the distance mode of classroom observation via MOOCs could be set up to train pre-teacher and make teachers better at low cost. For those who hardly go out of the place where they live, there is a chance to watch and study other top teachers around the world how to behave in the classroom.

MOOCs provide an opportunity by watching the proceeding in the classroom to review the content, feel real educational environment, learn more instructional strategies, and understand what the instructor would like to deliver by every designed scenario in the class.

Case Study of MOOCs

Case 1: Instructional Design & Lesson Planning

According to the course "Listen to Music", instructed by Professor Craig M. Wright at Yale University, as one of the most popular art MOOC watched and downloaded totally free around the world, it's necessary to study why the course is so attractive, what the difference between general music appreciation course and this one is. This course would be a templet of instructional design & lesson planning.

Lots of instructional materials are available on the course website. For students, a multimedia-enabled eBook links to all premium website media content, CD set, streaming music, Active Listening Guides, interactive version of the text's Listening Exercises. For instructor, the website offers so many modules, such as the Instructor's Manual, Supplementary Listening Guides, ExamView computerized testing, JoinIn on TurningPoint, Microsoft PowerPoint slides with lecture outlines and images, and WebTutor for Blackboard [5].

In the course, Professor Wright often invited some performers, like viola, violinist, and opera singers at Yale, to represent classic music in the classroom. This joyful learning environment was created to link the relevant music knowledge to live performance for enhancing student engagement on music. Another teaching scenario is more fun. Professor Wright dressed in black robe as a traditional catholic monk and turned off most of lights except one under teaching desk when he introduced medieval music with Gothic architecture of Christian church in lesson 15. Surrounded by dim classroom, students would be immersed in a mystery phenomenon of medieval church with

instructor's infectious words, contagious medieval music and church slides projected on the screen.

Apart from the great examples, it's worthy to point out that there would be some unexpected cases happened in the class although the instructor made a detailed lesson plan.

In lesson 7(video time of 00:14:20 to 00:20:00), Prof. Craig played a video about bluegrass music. Although it's so beautiful that Prof. Craig would like to "listen to this all day", the students felt less excited than him and didn't enjoyed it. This situation forced instructor to give up going on this topic and turned to another piece of music. Even a lesson was prepared preciously, there's still something out of the instructor' hand. Consider of the different level of individual interesting and taste for music, it's difficult to figure out what type of music would inspire most of students in the class before the lesson get started. So expectation for students might be fixed after class, or an investigation about students' music interests should be made before the class, because there is always something unexpected happened in the class, such as students didn't show interest in the content teacher delivered. It's a big challenge for instructor. What if students don't like the content in the class, what we instructors can do? Videos of MOOC provide instructor a chance to turn back to figure out what the problem happened in this lesson, work on it, and get more improvement on this type of issue.

Case 2: Interactive Learning Environment

Interactive calls in the Yale MOOC "Capitalism Success, Crisis, and Reform", instructed by Professor Douglas W. Rae, were made in the class. In the first lesson of the course, Professor Rae presented two kinds of calls for students, one is "cold call", usually posted questions by instructor without warning in the classroom; the other one is "warm call", which an email with heads-up questions would be sent to students by instructor previous to the class, students must prepare something to say for these questions in the class.

These calls are effective communication not only between instructor and students but also among students themselves. At the same time students have fun in knowledge transmission during the back and forth. One by one question would be thought over and discussed more deeply. These approaches help students become critical thinker by active calls and answers, and make them highly focus on the main point in the class.

Interactive grading is another approach in the Stanford MOOC "Programming Methodology" instructed by Mehran Saham. Prof. Saham practiced an integration of grade and individual instruction, which meant assignments with comments, would be hand-back and face-to-face instruction would be carried on as well. In order to learn a lot from their assignments, firstly, Prof. Saham and Teaching Assistants took each student' assignment, wrote a whole bunch of comments on it and graded it, and handed it back to each student; secondly, every week each student should meet his or her section leader with the graded assignment for about 10-15 minutes, which point out about what is good in the assignment, what are some of the things he or she need to work on, what are sort of software engineer principles the students need to develop, and so on. In that way, students are able to get more detailed information and ask questions to develop themselves as proficient programmers, as well get help if students need help when they meet their section leader.

Case 3: Comprehensive Assessments

Considering the features of course, Professor Mehran Saham designed distinct rubrics in Lesson 1, Stanford MOOC "Programming Methodology". For students learning programming, they are expected to follow a step-by-step schedule of writing more complicate program to solve more difficult problem. Hence, there are seven programming assigns weighed slightly more toward the last assign because the assigns will tend to get more complicated.

In lesson 1 of the course “Foundations of Modern Social Thought”, instructed by Professor Ivan Szelenyi at Yale, he introduced a reasonable workload and assessment for students who should undertake lots of readings for higher-order thinking for this course is full of all sorts of theories from different subjects, such as psychology, economics, political science, anthropology, philosophy and so on, engage in the hyper-prepared discussion section and tests as well. There are three tests about three blocks of the course administrated on the Internet where students can login at a given day anywhere they like. Prof. Szelenyi would give a set of questions one week before the test to make sure students have enough time to prepare, and then students are to be expected to answer some of them in the test, for instance, 2 out of 3 questions, or 8 out of 10 questions. Besides, at the end of the course there is one term paper supposed to bring different elements of the course together and link at least two blocks of the course. Through these tests and paper the students would focus on the most important citations and interpretation Professor given and reduce anxiety on exam.

Conclusions

This paper described how to do case study of MOOC on classroom observation, and presented a great deal of typical examples from different MOOCs. Pre-teachers and Teachers are able to take MOOC as a free tool to learn how experienced teachers organize their lessons successfully, and analyze instructional strategies of MOOC curriculum, including instructional design & lesson planning, learning environment, instructional delivery & facilitation, assessment. Through analyzing instructional strategies in MOOCs, pre-teachers and in-service teachers are able to figure out which one of teaching styles fit for themselves, accurate a great deal of experience in teaching and enhance their instructional capacity in short time.

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