The Organic Fusion of MOOC and Flipped Classroom

Yu BAI

Applied Statistics Graduate, Tianjin University of Finance and Economics Department
247934035@qq.com

Keywords: MOOC, Flipped Classroom, Organic Fusion.

Abstract. MOOC and flipped classroom are the two advanced teaching modes being concerned by current education field for their features, and how to realize the organic fusion of the two modes is an exploring-worthy problem. The integration of MOOC and flipped classroom refers to turning the MOOC resources after localization processing into flipped classroom teaching processes. And it will provide efficient network learning platforms, learning tools, and high quality learning resources for flipped classroom. The organic fusion of MOOC and flipped classroom is made up of elements including environment, interaction, experience and reflection. Environment is the physical foundation and core. Interaction, experience, reflection respectively are the key elements of knowledge construction, knowledge migration applications, problem solving and innovation. They exemplify all social relationships in the field, especially power relationships, thereby making them an organic whole, playing the greatest role to improve learning efficiency.

The Introduction of MOOC and Flipped Classroom Present Condition

Along with the rapid development of information technology, MOOCs, resource sharing, and other forms of digital learning resources increasingly increase, the informationization of teaching mode and means to become the development trend of modern education, brought huge impact to the traditional teaching model, provides a good opportunity for teaching reform. Network teaching platform is a basic technology in online learning platform, is the essential condition of teaching or network auxiliary teaching. Since 2012, the massive open online courses like a digital tsunami swept across the globe, massive open online courses (MOOCs) became a higher education buzzword for 2012. A massive open online course, at the same time triggered a new wave of education informatization in the world, new challenges and new opportunities. MOOCs possesses the characteristics of large-scale, openness, self-organization and attracted a lot of the learner's participation, also offers online course construction and teaching reflection. Some scholars think when network course is creatively used, it will be a significant change, but a more fundamental or the active learning method [1]. Although the value of flipped classroom recognized by the education of the classroom, but many scholars believe that China's push to flipped classroom has no ideal effect, therefore, based on the advantages and disadvantages of the resource of MOOCs and flipped classroom, how will these two teaching models effectively fuse and improve the quality of classroom teaching, is the main purpose of this article research.

MOOC

We can officially declare massive open online courses (MOOC) as the higher education buzzword for 2012. A massive open online course (MOOC) is an online course aimed at unlimited participation and open access via the web. In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students, professors, and teaching assistants (TAs). MOOCs are a recent and widely researched development in distance education [1], which were first introduced in 2008 and emerged as a popular mode of learning in 2012. Early MOOCs often emphasized open-access features, such as open licensing of content, structure and learning goals, to promote the reuse and remixing of resources. Some later MOOCs use closed licenses for their course materials while maintaining free access for students [2].
**Flipped Classroom**

Flipped classroom refers to the time to adjust the inside and outside the classroom, will study the decision as to shift from teachers to students. In this teaching mode, the class of the precious time, students will be able to concentrate more on the initiative of project-based learning, common on the localization and the challenges of globalisation and other real world problems, to gain a deeper understanding. Teachers are no longer take the classroom time to teaching information and the information need students to complete the autonomous learning after class, they can see video lectures, listen to the podcast, enhanced ebook reading function, can also discuss with other classmates in the network, can at any time to the materials they need to refer to. Teachers can also have more time to communicate with everyone. After class, students plan their own learning, learning, rhythm, style, and presents the way of knowledge, the teachers teaching method and the collaboration method is used to meet the needs of students and make them personalized learning, the goal is to make students obtain more real learning through practice. Flipped classroom mode is a big part of the education movement, it has to do with blended learning, inquiry-based learning and other teaching methods and tools overlap in meaning, is to make learning more flexible and active, lets the student participation. The popularization of Internet and computer technology application in the field of education, make the "flipped classroom teaching mode” become feasible and realistic. Students can through the Internet to use the high quality education resources, no longer simply rely on the instructor to teach knowledge. While the class and the teacher's role has changed. More of the responsibility is to understand the students' questions and guide students to use knowledge.

**The Feature of MOOC and Flipped Classroom**

**The Feature of MOOC**

MOOCs was able to get the favour of the general public after put forward, and had grown so rapidly, has close relationship with its unique features. It mainly includes:

**High degree of openness**

Openness is the primary feature of MOOC, and it has a broad meaning. First, it has the meaning of open access, any learners worldwide are free to access and retrieve their own courses of interest in the network environment, which means it has no limit of identity, limit status, time, space and number, etc.; secondly, openness also has content provided free (or at low cost) meaning, MOOC platform offers a rich variety of nonprofit curriculum learning resources, cognitive tools, the technical environment and development mouth and other items, for free use of learners ; third, openness also gives the learner repeated and recycling, the right to modify and disseminate resources, which greatly facilitates their processing in the MOOC platform to create and produce content[3]; fourth, openness is also reflected in MOOC mass participation, former professor at Stanford University Sebastian Thrun reflect on their successes noted, MOOC biggest difference with other online courses that students' participation[4]. More importantly, MOOC courses according to learner’s port standard, based on their existing knowledge, skills and common interests from the line organizations involved in related activities [5].

**High-quality micro-video**

Micro video as a MOOC core constituent elements, its quality directly affects the learner's interest in learning and learning performance. MOOC speaker teachers generally composed of elite teachers around the world. Its course was served by the professional video production team, who carefully designed the overall structure, curriculum, content structure and form of presentation, the goal is to motivate learner’s motivation of micro video. In MOOC micro-video, the designer often with specific content targeted to embedded some small exercises, interspersed with a small test, or arrange a simulation based on the specific situation, and whenever micro video rendering or simulation test exercises when the video will automatically enter a suspended state until the learner correctly answer questions or complete the experiment, the video will continue to play. This not only helps to regulate
the status of learners, but also help learners timely inspection and found loopholes in their own
teaching, if learners are not satisfied with the results of tests or experiments, they can also re-play the
video for the second study. In addition, MOOC micro-video duration is generally controlled within
15 minutes, preferably adapted to the cognitive characteristics and learning needs of learners. All in
all, a well-designed micro-video has such huge meaning for highlighting curriculum difficulty,
summarizing the main points of knowledge, deducing cognitive load, improving learning
performance.

**The Feature of Flipped Classroom**

**Pre-class learning-deep learning instead of preview**

Do not mistake preview as flipped classroom. Just reading the textbooks, doing exercises in advance
is simply shallow prep, in classroom, teachers still have to spend a lot of time to teach knowledge.
Before the flipped classroom lessons online learning is done by the high-quality instructional videos,
students can get as much knowledge by self-taught video as what teachers teach in classroom.
Students addition to watching videos, learning online teaching resources, but also can turn to teachers
and peers for help by chat software, teachers can provide online counseling. Students can also help
each other through online collaboration between students group.

**Post-class learning-Classroom Organization**

The most important value of flipped classroom is face to face interaction productive learning
activities. After using online video teaching content and teaching resources which yet delivered to
students before class, in the class the high-quality classroom activities must be organized, eg
inquiry-based experiments or practical activities, projects based on the study and discussion.
Teachers as learning mentors rather than teaching content delivery person, can have more time to talk
with students, answering students’ questions, participate in group discussions, individually tutor, hold
small seminars to help students master and use new knowledge and skills they have learned before
class.

**The Fusion of MOOC and Flipped Classroom**

Some scholars have discussed the combination of MOOC resources and flipped classroom and
construct three new flipped classroom teaching mode - alternative MOOC video mode, "MOOC
videos + homemade videos" mode, and second-development mode[6]. Domestic and overseas, there
are researches on the fusion of MOOC and flipped classroom, such as in San Jose State University,
students take the MOOC as homework to complete in the traditional teaching, meanwhile in the class
were encourage to solve deeper problem[7]; Peking University in the course “translation practice”,
combined MOOC with the flipped classroom, to build a "progressive flip teaching” teaching
model[8]; Educational college of Zhejiang University undergraduate course "Network and remote
education", the use of the MOOC into the flipped classroom teaching mode to carry out teaching and
empirical research-based learning log analysis[9]. The former mainly takes the MOOC as a second
classroom for students to practice after school, belonging to shallow binding, then the latter use
MOOC resources for all aspects of the flipped classroom, which belongs to deep combination. The
fusion of MOOC and flipped classroom described herein is a kind of network teaching and classroom
teaching entity depths with new hybrid teaching model. On the one hand, adding the center MOOC
platform, curriculum resources, learning support systems, student tracking management system after
the localization process into the flipped classroom teaching the whole process before the class for
their students to provide efficient online learning, learning tools and high-quality learning resources,
it enables students to finish online learning and training and get new knowledge; on the other hand,
the flipped classroom personality learning concept applies to online education, promote MOOC by
the large-scale, completely open to small-scale programs, limiting open courses or small private
online course (SPOC) development, overcome a series of drawbacks bringing by large-scale and fully
overcome MOOC openness[10]. The main purpose of the organic integration of the two is on the
MOOC high-quality educational resources for processing, integration and full use of the base, the creation of "student-centered" personalized learning environment and a variety of teaching activities, the use of experiential learning, cooperative training, critical reflection, multiple interaction, self-exploration and other diverse ways of learning, to deepen students' understanding of knowledge, transfer and application, stimulate students' creative thinking, develop students' higher-order thinking skills, promote deep learning occurs.

To build a fusion mode of MOOC and flipped classroom, this article design pattern follow:

**Virtual reality learning environment before class**

Virtual context is a virtual learning space, generally include two categories: the gamification virtual learning environment. We can rely on MOOC platform center or self-built cloud computing network platform, use artificial intelligence, networking, 3D animation, simulation and other technologies, introduce the game element into the learning environment, to build a set of sound, images, scenes, characters (role) and other elements in one of the three-dimensional realistic experience virtual learning space. Second, the real situation courseware. Many MOOC multimedia video is consistent with real-life real scene, and these scenes have integrity which can maintain contact between things in real life, so it can offer the students resources to apply the knowledge to solve the problem of high uncertainty and exploration complex reality world.

**Real classroom learning environment in class**

Real classroom environment mainly refers to the mosaic nature of reality in the classroom and social situations, such as natural geography, occupation scenes work, interpersonal and family life situations, etc. [11]. We can take college - enterprise cooperation, to use real business projects, real cases and work processes in the classroom activities, design Real Training Projects, Real Project Role, Real job process, Real working condition and Real work pressure (i.e. "5R") immersive real classroom situation.

**Remote interaction before class**

MOOC features in its formation of a large number and a depth of interaction. The MOOC’s interaction mainly includes four categories: The first category is the In video interaction. The second category is testing interoperability. The third category is evaluating interaction. The fourth category is social learning interaction.

**Network Virtual Experience before class**

Network Virtual Experience before class mainly includes two categories: one is a virtual operating space experience. The aforementioned gamification virtual learning environment provided the conditions for virtual space experience. Students can experience a variety of games and virtual simulation in virtual space. Second, the virtual exhibition space experience. Many MOOC courses using conversational video, scene style teaching mode, presentation combines animation, stories, activities, and other interactive content, with a strong "one to one" presence, to enhance students' sense of presence and degree of immersion [12], has some experience effect.

**Activities Experience in class**

Real classroom experience. First, the classroom experience real-life situation. The second is to move out of the classroom or the classroom extends classroom (second class), to enable students to the corresponding real-world environment to experience that participation in social practice.

Classroom simulated experience. Using simulated scenarios, real-life experience to enrich students' class. Classroom simulated experience mainly in two ways: First, situational simulation experience. It refers to artificially create some highly similar real-world situations, so students participating in such situations and learning activities. Second, the role-playing.

**Learning reflection before class**

First, MOOC course content and presentation have diversity and integration, students can enhance visual, auditory and other sensory organs, stimulate, excite existing multi-channel knowledge and
experience to promote student contacts old and new knowledge, and integration of reflection on
teaching resources, processes, outcomes. Second, you can use MOOC platform for students’ learning
process and supervision records stored in the database to reflect the storage conditions are provided
for the students to reflect on the learning process. Third, ask students to use study notes, electronic
records and other means timely learning and online training video recorded in doubt, according to the
learning needs access to relevant information, or communicate through other communication tools
within MOOC platform station or BBS forums and discussion boards reflection.

Conclusions and Recommendations

Conclusions
First, the organic integration of MOOC and flipped classroom mainly refers to after making the
MOOC resources into the localization, fuse it with the whole process of flipped classroom teaching,
to provide efficient network platform for the flipped classroom learning, learning tools and
high-quality learning resources, improve resource development quality, reduce resource development
costs.
Second, make sure environment, interaction, experience, reflection highly efficient operate, in
order to make the organic integration of MOOC and flipped classroom possible.
Third, there is different importance among environment, interaction, experience, reflection. Environment is the physical foundation and core; interaction, experience, reflection respectively are
the key elements of knowledge construction, knowledge migration applications, problem solving and
innovation.

Recommendations
First, acquisition, processing, utilization of MOOC and the design of flipped classroom teaching
resources are required to invest some capital, teachers also need more effort, more strongly with the
students cannot do without.
Secondly, through building the establishment of incentives, rules and institutions, a learning
community, healthy learning culture, thereby affecting the behavior of administrators, teachers,
student, to achieve a depth learning purposes, improve the efficiency of learning.
Finally, master relationship among environment, interaction, experience, reflection, thereby
making them an organic whole, playing the greatest role to Improve learning efficiency.

References
[1] Manin, F.G. Will Massive Open Online Courses Change How We Teach. Communications of the


