

Research on MOOC's Ways of Teaching Students According to Their Aptitude

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Abstract. Online education offers new possibilities for teaching students in accordance with their aptitude. Nowadays, the research on MOOC is usually from the perspective of teachers, not students. By comparing the different treatments in content differences, rhythm differences, and method differences between traditional education and MOOC, this paper concludes that online education can realize the possibility of teaching students in accordance with their aptitude. Based on the perspective of personalized services, the concept of teaching students in accordance with their aptitude has been redefined, and the ways of it are analyzed in detail from the service links.

1. Introduction

At present, the research and application of MOOC are mostly limited to try to achieve teaching with series of measures such as improving platform design and teaching mode reform, but neglecting the core of online education development – centered on learners [1]. It should be noted that students are masters of the class, instead of teachers. This paper has changed the research perspective, from the perspective of “learning”, that is, from the perspective of obtaining personalized services, to analyze how MOOC can teach students in accordance with their aptitude when providing undifferentiated teaching services for large-scale people.

The structure is as follows: Section 2 interprets the definition of teaching in accordance with students' aptitude, and obtains the advantages of such online education by comparison. Section 3 redefines the concept of "teaching students according to their aptitude" based on the perspective of personalized services, and how MOOC realizes it from five personalized service links, and gives the corresponding optimization methods. Section 4 concludes the paper and points out further work.

2. MOOC and teaching according to students' aptitude

2.1 The Content of Teaching Students According to Their Aptitude

"Teaching students according to their aptitude" refers to the provision of differentiated teaching on the basis of understanding individual differences of students. This paper focuses on the interpretation of "teaching students according to their aptitude" from the perspective of "difference".

Content differences – everyone starts learning new knowledge from different levels, which requires teachers to adjust their class contents according to students' actual situation in the teaching process.

Rhythm differences – each person's ability to absorb of knowledge is different, which means that the teaching progress should be adjusted according to the students' mastery level.

Methods differences – the level of adaptation to the teaching method is not the same for students, which needs teachers apply the teaching method flexibly for meeting students' learning and thinking requirements.

2.2 The advantages of MOOC when teaching students according to their aptitude

Traditional education follows the principle of efficiency and benefit priority, and aims at maximizing the benefits of the vast majority of students. It is obviously difficult to realize the vision of teaching students in accordance with their aptitude by adopting highly homogeneous education contents and education methods for all students. However, online education offers a new possibility for teaching students in accordance with their aptitude. It gives students autonomy not only in time and space, but also contents and rhythms. Students can adjust their courses accordingly and thus become the subject of teaching in accordance with their aptitude. The different treatment methods of content differences, rhythm differences and method differences between traditional education and MOOC are shown as TABLE I.

TABLE I. TREATMENT METHODS

| DIFFERENCES | CONTENT DIFFERENCES | RHYTHM DIFFERENCES | METHODS DIFFERENCES |
|-------------------------------|--|-----------------------------|--------------------------------------|
| Traditional teaching in class | Same textbooks and requirements | Teacher controls the rhythm | Unitary teaching method |
| Massive open online courses | The quantity、range、depth、difficulty、sequence、schedule of content can be selected | Students master the rhythm | Enrich the presentation of knowledge |

3. MOOC's ways of teaching students according to their aptitude

MOOC redefines the class and provides new ideas for teaching students in accordance with their aptitude: the course is flexible enough to adjust students according to the personalized and diversified needs of them, and basically covers the needs of students at different levels. In this case, teaching students according to their aptitude is transformed into the perspective of learners, that is, the process of obtaining personalized teaching services. Then in MOOC age, the key to teaching students according to their aptitude will be how to realize personalized services. The key to realize individualized service lies in giving full play to the role of service links, which can be further divided into five parts – platform support service link、teacher service link、teaching assistant service link、users' self-service link and user - provided service link.

3.1 Platform support service link

Platform support services can be analyzed from the big data they generate and the functions they provide. Through the big data provided by the platform, we can analyze and predict users' learning behaviors [2,3]. Users' personalized needs can be satisfied through the platform's personalized recommendation, certificate binding, credit certification and other functions.

The platform support service link can be optimized in the following ways:

(1) The platform can set up special data mining departments to transform course data into valuable information and timely feed back to the cooperative universities to improve the teaching effect.

(2) By combining the university, MOOC platform and education administrative department, the multi-level credit recognition mechanism for the MOOC market and a functional organization related to the recognition of MOOC credits can be established [4].

3.2 Teacher service link

In traditional classes, learners are usually classified in a manual way. Teacher should solve the question of most students, preceding solving special questions of some students. For teachers, this method is limited by differences in time, space and perception, and the operation effect is not satisfactory. For students, it not only ignores their personality differences, but also has efficiency problems. In fact, online education is not really one-to-one tutoring either, but the advantage of

online education is that large-scale learners can be classified and centralized through technology, and then be answered by teachers and teaching assistants, which greatly improves efficiency and enables students to really "speak" – to ask questions.

In teacher service link, teachers can improve the probability of personalized services through the following methods:

- (1) Set up stepped teaching contents and problems at different levels in advance through the learners' data provided by the platform;
- (2) Classify according to their specific learning situations. The teacher then carries on the targeted guidance, teaches, answers questions;
- (3) Fully mobilize students' initiative and promote students' exploratory learning by setting after-class extension questions.

3.3 Teaching assistant service link

Teaching assistants, who mainly provide learning auxiliary services, play a variety of roles on the MOOC platform, such as forum supervisor, learning monitor and community reporter. To a large extent, such auxiliary services are non-differentiated and do not belong to personalized services, but the process of promoting individual learning through some kind of auxiliary services by a teaching assistant is essentially the process of getting personalized services.

Till now, the MOOC platform mostly uses artificial assistants in teaching assistant service link. When faced with massive questions, there are inevitably efficiency problems. With the development of artificial intelligence, AI teaching assistants will become the new assistants of online education to provide personalized services. Therefore, it can be optimized to the direction of artificial intelligence in the teaching assistant service link:

- (1) By optimizing techniques, the leading tasks of MOOC are effectively matched with AI teaching assistants to provide learners with the most matching teachers, courses and methods.
- (2) By creating intelligent and personalized interactions, students are encouraged to adopt efficient learning behaviors.

3.4 Users' self-service link

From the perspective of learners, teaching students in accordance with their aptitude means that learners get personalized services to complete learning. In recent years, the biggest crisis MOOC faces is the high rate of attrition. The main reason is that users' self-service awareness is not enough, which extends the passivity of offline classes to online classes. Therefore, online education platform should maximize the initiative of users when providing personalized services.

The users' self-service link can also be optimized through the following ways:

- (1) In the course selection interface, the course requirements, assessment mode and teaching time should be explained in detail as much as possible for ensuring that the learners can select the best suitable courses.
- (2) Form communities and study groups. It is easier to stick to study in groups.

3.5 User-provided service link

For individuals, the highest level of learning is to teach others, and for online education platforms, the highest level of service is that users provide services. In this link, users will get a sense of accomplishment by providing services, which also promotes the personalized learning process of other users.

However, it is difficult to provide services for customers, so we can start with the following measures:

- (1) Students are encouraged to ask and answer questions to each other. Effective answers will be scored, and the final points will be included in the assessment additional points.
- (2) Open the education interactive live broadcast window, through which users can choose to share their learning experience, paid or unpaid.

4. Summary

In this paper, we interpret the concept of teaching students according to their aptitude from the perspective of differences. By comparing different treatment methods of content difference, rhythm difference and method difference between traditional education and MOOC, we find that MOOC is more conducive to teach students according to their aptitude. Then, we redefined the concept of teaching students according to their aptitude from the perspective of learners. Finally, we analyze how MOOC realizes teaching in accordance with students' aptitude from its five personalized services links and gives the corresponding optimization suggestions. If all the links are optimized, learners can be taught in accordance with their aptitude.

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