The Development Path of Online Open Courses: From Resource Support to Creating Ecosystems

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Abstract: Online open courses are the mainstream online education forms at present, including conventional Mooc, commercial Mooc, SPOC and other application modes. While they are welcomed by learners, there are also some problems that cannot be ignored. The theory of "learning ecosystem" originates from ecology of education and system theory. Through the analysis of the model from the perspective of system and ecology respectively, this paper expounds that the online open courses should have the viewpoint of dynamic stability and sustainable development, and puts forward a series of solutions.

1. Introduction

Under the influence of the concept of "Internet + Education", online education has developed rapidly and a large number of online courses of various forms have been launched. These courses, which are well produced and with rich resources, are distinct from traditional classroom videos. Most courses also have dedicated BBS or social groups for learners to join in the discussion. It originally known as moocs, then called as online open courses, including regular moocs, commercial moocs and SPOC. These courses break through the limitation of time and space, have novel curriculum design and low learning threshold. These courses are favored by the majority of learners when been started running, even been called as "an educational revolution". As we all know, nothing is perfect. In the same way, there is no perfect curriculum and education model. There are many problems in online open courses, some of which even affect the development of open online courses. In the process of being focus on these problems, the theory, learning ecosystem, generated by the integration of ecology of education and system theory, has gradually been attached importance to by education researchers. A new route, which creating some learning ecosystems for online open courses, not only providing simple resource supporting, will bring new vitality into the development of curriculum model.

2. Learning Ecosystem Theory and Learning Ecosystems in Online Open Courses

2.1. An overview of learning ecosystem theory

The learning ecosystem includes both the concepts of "learning ecology" and "system". Learning ecology from the theory of "education ecology", was put forward firstly by the Columbia University professor Cremin (Lawrence Arthur Cremin, 1925-1990) in the 1940s [1]. The main research about it are including that how learners are dealing with other groups and the relationship between learning environment factors, what learners can get from other creatures and their surrounding environment, and which methods of learning are effective [2]. According to the definition of system theory, a system refers to an organic whole composed of two or more interrelated and interacting parts within a certain boundary range, which has a certain function and moves towards a certain goal. The concept of learning ecosystems has many interpretations [3]. Hao-feng Zhang et al. (2007) argue that the learning ecosystem refers to a functional whole consisting of the learning community and its realistic and virtual learning environment [4]. The learner and the learning environment, the learners and other learning individuals and learning groups are closely connected [5]. Interaction,

through the process of knowledge absorption, internalization, innovation, externalization, feedback and other processes to achieve effective learning. Xiao-hua Su (2006) believes that the network learning ecosystem is an organic whole composed of the network learning community and the network learning ecological environment. Moreover, the network learning ecosystem is a subsystem in the social ecosystem, and the social ecosystem continues to the e-learning ecosystem inputs the flow of materials, equipment, personnel, etc., continuously inputs energy flows such as funds and knowledge, and continuously inputs various information streams. At the same time, the network learning ecosystem outputs various information. Xiao-ling Han (2007) gives five characteristics of the network learning ecosystem that should be integrated, diverse, open, interactive, and sustainable [6]. Qing-mei et al. Yu (2017) believe that the online learning ecosystem is a kind of social ecosystem, including micro-system consisting of three parts: curriculum participants, curriculum resources and specific modules of the curriculum platform [7]. The middle system consisting of four parts: parents (education for minors), curriculum resource managers and the overall structure of the curriculum platform, and a macro system consisting of the institutional environment and the socio-cultural environment. The course participants are the core of the learning ecosystem. The curriculum resources are the cornerstone of the system and the way and source of the knowledge transfer of the course participants. The course platform is the guarantee for the normal operation of the system and serves the course participants and curriculum resources.

2.2. Learning ecosystem on online open course

After the online open course runs online, a group of learners, teachers and facilitators gather around the curriculum to form a learning community spontaneously. In the learning community, they share learning resources, exchange learning experiences and other information. It is common that they help both other learners and themselves. Gradually it constitutes an learning ecosystem for online open courses.

Learning ecosystems should be complete, dynamic, and evolving. Integrity is embodied in the learning ecosystem of online open courses. The provider of network knowledge and information is the producer, the learner is the consumer, the personnel who maintain the knowledge and information in the network are decomposers, and the network hardware facilities are abiotic. surroundings. The dynamic stability is reflected in the basic balance between the flow of material, the flow of information and the flow of energy in an online open course learning ecosystem. The evolutionary nature of the learning ecosystem embodied in an online open curriculum is evolving, and the evolution of system elements will gradually lead to systemic changes or development.

3. The Ecological Dilemma about Online Open Course and its Solution Strategy

It should be realized soberly that although the online open curriculum model is welcomed by many learners, there are still unfavorable factors, mainly reflected in the ecological aspects, and the existence of these problems has a cumulative effect on the negative impact of online open courses, mainly reflected in:

First of all, the majority of the courses are inclined to the presupposition. There are "teacher-centered" settings still in their choices. The learner's information literacy and metacognitive ability are different Significantly, which makes the learning effect poor. Furthermore, it spends a long period and a large workload for preparing Online open courses. It is true that most of the lecturers of the online open courses are experienced teachers, worked in the classroom. They often use all the curriculum resources to "preset" the course, and then execute the "preset" step by step, and strictly prohibit any deviation from beyond of "preset". It must not be able to take into account that there are the learning ability differences in learner's individual because of strict settings. learners must self-adjust to adapt to the network learning ecological environment, rather than play the learner's own subjective initiative to transform the environment, making it conducive to their own learning. Moreover, most of the learners in China actually have the phenomenon of over-reliance on teachers and self-learning difficulties, which further emphasizes the degree of individualized learning.

Secondly, the ecological environment pollution of online open courses is difficult to eliminate, and the accumulation of pollution leads to a gradual decline in learning effects. The online open course is convenient for learning and there is also a large amount of information pollution, which affects the learning effect, mainly including the network learning ecological environment being artificially divided, so that the huge interconnected whole is divided into several isolated groups of different sizes, resulting in some groups. The imbalance between producers and consumers leads to resource imbalance pollution caused by ecological imbalances; the non-performing information disseminators act as producers, causing the information content flowing in the network learning ecological environment to be transformed from the original learning information into the resource content pollution of bad information; The timeliness in the process of information transmission declines. The decomposers do not eliminate outdated old information in time, update the timeliness and effectiveness of information transfer in the upgraded system, and cause the outdated and old knowledge to be polluted by the resources continuously absorbed by consumers.

Thirdly, the phenomenon of emotional loss in online learning is serious, and there is no sense that cannot continue to attract learners to persist. In the process of information transmission, online learning is prone to the problem of lack of emotional interaction. Even if there is interaction, it is usually in the form of words or speech, lacking realistic eye and limb expression. Therefore, many learners believe that there is no "Human emotion" in online courses, and it is difficult to keep learning in the long running.

In order to solve the problem, the current construction and application of online open courses should be adjusted, from the perspective of providing high-quality teaching resources to the creation of a good learning ecosystem, which should include the following three aspects:

Firstly, the curriculum design shifts from focusing on resource design to doing on event design. According to the students' learning ideas instead of the teachers' teaching ideas, it is usually necessary for the teachers to reconstruct the course knowledge. In addition to the video teaching content, appropriate auxiliary resources are also necessary, especially the need to design active learning or inquiry. Learning activities and other methods are used as a basis for conducting learning activities. The design of learning activities for online open courses is at the core. Other related teaching resources, learning tools, and learning support are designed and serviced for learning activities, and try to present a complete and real learning process for learners. There are many types of learning activities and diverse evaluation methods.

Secondly, attach importance to course iterations, and application is the beginning of building updates. Online open courses are developing very fast. The completion of an online course is not the end of the event, but the beginning of a new phase. Reasonable selection, updating and utilization of learning resources and learning support services are the basis for the construction of online open courses and the requirements for purifying the learning environment. Online open courses should set up mature learning environment management strategies, control the quantity and quality of learning resources, choose the most suitable way for learners to learn, and refuse the accumulation and spread of garbage learning resources.

Thirdly, a variety of means to strengthen the interaction between teachers and students, including curriculum knowledge and learning science related content. In the course of online open courses, in addition to course knowledge, appropriate emotional exchange content should be included to guide students to learn the learning methods of this course, to help learners develop self-organizing learning skills and improve learning efficiency. The online discussion section can also add interpersonal communication content, such as holiday greetings, sharing of interesting events, and even emoticons. The emotional interaction between teachers and students naturally brings the time and space distance between teachers and students. At the same time, multiple learning incentives, such as rewards, a small amount of encouragement, and a small privilege, are used to encourage students and enhance emotional communication. In the cyberspace where the course can interact, in addition to knowledge learning, it should also include guidance for the learning methods of the subject. The content of the communication with or without the guidance of the learning method should be considered as part of the quality interaction.

4. Conclusion

Online open courses have developed rapidly in recent years, in line with the rules of the information age, and are in line with the requirements of a new generation of information literate learners. As the main development direction of future study and lifelong education, it has been paid more and more attention by educators and researchers. Establishing a good online learning ecosystem is the only way for the development of online open courses. The online open course mode does not take long to appear, and it is normal to have problems. Studying online open courses from the perspective of learning ecosystem can explain the existing problems more reasonably, and can also propose operational solutions. Relevant research and practice are worth further verification.

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