World Journal of Educational Research
ISSN 2375-9771 (Print) ISSN 2333-5998 (Online)
Vol. 10, No. 4, 2023
www.scholink.org/ojs/index.php/wjer

Original Paper

Thoughts of Courses Construction of Graduate Student with Master of Medicine Based on Online Open Courses

Xubo Shen[1]

[1] Graduate School,Zunyi Medical University,Zunyi,Guizhou ,China

Received: July 12, 2023 Accepted: August 17, 2023 Online Published: August 29, 2023

doi:10.22158/wjer.v10n4p178 URL: http://dx.doi.org/10.22158/wjer.v10n4p178

Abstract

Under the "double-track integration" training model, there are problems with short learning time, scattered locations, and inconsistent schedules for master of medicine. The traditional method of face-to-face teaching in a centralized setting cannot meet the new training requirements. The standardized training for resident physicians strictly requires a 33-month period for clinical skills training. How can we reform the teaching methods while maintaining the same length of the curriculum, in order to balance the standardized training for resident physicians and course learning? Online open courses have the characteristics of fragmented knowledge, abundant resources, diverse formats, flexible choices, and unrestricted learning time and location. They can effectively resolve the conflict between course learning and standardized training for master of medicine under the "double-track integration" training model. How to successfully develop online courses has become a key issue in the reform of course teaching for master of medicine. Based on the experience of course teaching management for master of medicine, this article discusses some considerations for the construction of online open courses.

Keywords

online open course, clinical medicine, graduate, course construction

1. Introduction

The master of medicine education aims to cultivate clinical medical talents with strong clinical analysis and thinking abilities, reaching the level of qualified resident doctors and mastering the basic methods of clinical scientific research. In 2014, six national ministries and commissions issued the "Opinions on Deepening the Reform of Clinical Medical Talent Training through Medical-Education Collaboration," which required the double-track integration of master of medicine education with standardized residency training, implementing a "fusion" training model. Graduate students are required to rotate in

clinical settings for no less than 33 months. Therefore, the learning time for master of medicine courses needs to be concentrated within two months. Due to the short duration of intensive classroom teaching, compressed course hours, students' learning efficiency is not high, resulting in insufficient grasp of professional foundational knowledge. This is reflected in the lack of solid theoretical foundation and systematic professional knowledge in thesis writing, as well as incomplete and superficial analysis in the discussion section of graduation thesis. Against this backdrop, the course learning of these graduate students faces significant challenges. Online open courses have the characteristics of fragmented knowledge, abundant resources, diverse formats, flexible choices, and unrestricted learning time and location. They provide a platform for graduate students to learn anytime, anywhere, and are conducive to graduate students systematically learning professional foundational theoretical knowledge according to their own situations. This can effectively solve the contradiction between the course learning of master of medicine course and standardized training under the "fusion" training model. Therefore, the development of online open courses has become a key focus in the construction of master of medicine courses. The construction of online open courses is conducive to better play the role of course learning in graduate student training and further improve the quality of graduate student education.

2. The Importance of Master of Medicine Courses in Curriculum Learning

The master of medicine education consists of two stages. The first stage is the curriculum learning phase, which includes the study of compulsory courses, core professional courses, elective courses, and professional elective courses. This is followed by the clinical skills and research training phase. Among them, curriculum learning is the fundamental part of graduate education and plays a comprehensive, integrated, and foundational role in the growth and development of graduate students. It is essential for the quality and level of graduate education. Curriculum teaching is the main channel for graduate students to grasp basic theories and professional knowledge. It is also the primary space for teachers to impart clinical thinking, clinical skills, research ideas and methods, and share research experiences. It is a crucial stage and an important approach to cultivate clinical thinking, clinical analysis, innovative thinking, and innovative ability. In this stage, graduate students systematically learn professional knowledge and skills based on their own professional and research needs, as well as their interests. They acquire a solid theoretical foundation and comprehensive specialized knowledge in their field, laying a solid theoretical foundation for the next stage of clinical skills and research training.

3. Current Situation and Existing Problems of Curriculum Learning in Master of Medicine Courses

The training mode for master of medicine courses before the reform was such that 95% of universities arranged for curriculum learning to be completed within 6 months after enrollment. However, with the implementation of the "integration" training mode, graduates are now required to complete a standardized 33-month residency training program, leaving only 2 months for concentrated curriculum

learning. This situation, where a large amount of curriculum learning tasks need to be completed within a short period, inevitably leads to unsatisfactory learning outcomes. Graduates perceive limited benefits from the curriculum learning and believe that it plays a minimal role in developing their clinical and research abilities. This lack of interest in curriculum learning results in complaints and a superficial attitude towards fulfilling the requirements. Consequently, their knowledge structure remains incomplete, and they do not have a solid grasp of foundational theories and specialized knowledge. In clinical practice, this is reflected in their weak ability to identify and solve clinical problems using the acquired knowledge and methods, as well as their lack of clinical thinking. In scientific research, they exhibit a lack of innovation and weak analytical skills.

4. Necessity of Online Open Course Construction for Master of Medicine

After completing two months of public courses, the master of medicine students directly enter clinical rotations. However, the study of basic professional courses and theoretical courses can only be done during evenings or other free time. Due to the inconsistent scheduling of clinical rotations and the fact that students are placed in different training institutions, it is extremely difficult to arrange course teaching in a centralized manner. Traditional classroom teaching methods are no longer suitable for the "integration of theory and practice" training model of master of medicine students, and it is necessary to reform the course teaching methods.

In recent years, online open courses have been rapidly promoted and widely applied in China. Compared with traditional classroom teaching, online open courses have obvious advantages for the course learning of clinical professional master's students: (1) Fragmentation of knowledge. By using short videos, teaching goals can be presented in the form of "micro-courses", and students can watch course videos repeatedly or review course materials, which helps students better understand and digest knowledge. (2) Flexibility and self-directed learning. master of medicine students can choose to learn according to their own time and location. With the support of online teaching platforms, students can learn anytime and anywhere during clinical rotations, which improves learning efficiency effectively. (3) Personalized learning. Most online open courses are based on knowledge points, and the teaching content is relatively modular. Students can selectively learn based on their own learning foundation and professional background, achieving personalized learning and improving learning outcomes. (4) Not limited by student scale. Master of medicine students are scattered across different training institutions during the standardized training period, and the number of students in each institution varies from a few to hundreds. Online open courses can be simultaneously accessed by students from different institutions of different scales, making the resources fully utilized. In summary, online open courses can break the limitations of time and space, enhance learning autonomy, and increase students' interest in learning. These characteristics precisely meet the needs of clinical professional master's students for course learning, allowing them to engage in personalized course learning anytime and anywhere based on their actual situations. Therefore, the construction and application of online open courses for master

of medicine courses can not only effectively solve the contradiction between course learning and standardized training under the "integration of theory and practice" training model but also achieve personalized learning and improve the learning efficiency of master of medicine students.

5. Considerations for the Construction of Master of Medicine Courses Based on Online Open Courses

The construction of graduate courses in clinical medicine based on online open courses is an innovative educational model in the current digital era. This model transforms graduate courses in master of medicine into online formats by utilizing online platforms and information technology, allowing students to learn anytime, anywhere through computers or mobile devices. Currently, there are few online open courses specifically designed for master of medicine, and the quality of these courses varies greatly. Most online courses are primarily focused on teaching resources, and the content and teaching methods are still centered around the course syllabus, without truly achieving knowledge fragmentation. Some online courses are even recorded during classroom teaching and do not fulfill the true purpose of online courses. Therefore, in the process of online course construction, it is necessary to change teaching concepts, accurately position online courses, and avoid wasting human and material resources by constructing courses for the sake of construction.

5.1 Sharing Educational Resources

Through online open courses, high-quality educational resources from around the world can be integrated and shared. Different universities, research institutions, or professionals can collaborate to offer courses and share their experiences and expertise. Excellent online open courses can be recommended and incorporated into the "National Smart Education Public Service Platform," promoting the joint development and sharing of excellent online teaching resources and reducing resource waste. This model helps to address the problem of unequal distribution of traditional educational resources and improves the efficiency of resource utilization.

5.2 Independent Learning and Personalized Customization

Online open courses provide students with space and time for independent learning, allowing them to study according to their needs and interests. Students can choose specific course modules based on their individual needs and arrange their study schedule according to their learning progress and abilities. They can also customize specialized learning plans based on their academic direction and interests to better meet personalized demands.

5.3 Interaction and Collaborative Learning

While online open courses emphasize independent learning, they also emphasize interactive and collaborative learning. Through online platforms, students can interact and communicate with other students, teachers, and professionals. This interaction can take the form of online discussions, collaborative projects, or virtual laboratories, enhancing students' cooperation and communication abilities, and improving learning outcomes.

5.4 Practice and Field Training

The nature of clinical professional master's degree programs highlights the importance of practice and field training. For courses that involve clinical practice skills, online open courses can utilize virtual laboratories, simulated case analyses, and other methods to combine various professional fields. Taking advantage of the "Virtual Reality and Industry Application double-track integration Development Action Plan (2022-2026)," a batch of virtual reality digital courses can be developed to promote the upgrade of practical clinical skill training for graduate students to self-experience. This allows students to engage in practical training in virtual environments, improving their clinical skills and practical abilities. Additionally, universities can also collaborate with relevant medical institutions to transfer some courses to real-life settings for practical training to ensure that students gain real clinical experience.

5.5 Quality Assurance and Certification System

The development of online open courses relies on strict quality assurance and certification systems. Universities should establish corresponding standards and procedures to review and evaluate the online courses offered, ensuring the quality of online courses. Similarly to traditional courses, upon completion of online open courses, students should receive the appropriate certificate or degree that holds the same academic recognition as traditional education.

6. Conclusion

Currently, under the "double-track integration" training model, in order to meet the 33-month standardized training for resident physicians, the author believes that prioritizing the development of online courses in the construction of master of medicine's courses is an effective approach to address the challenges of limited course learning time and restricted learning time and space. By employing rational design and effective utilization, leveraging digital technology to expand learning opportunities, we can overcome these issues.

Funding

This research is under the projects: Research and Education Reform Project for Postgraduate Education at Zunyi Medical University ("Construction of Postgraduate Curriculum System Based on Online Courses" (ZYK50)).

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