



Application of SPOC in Online and Offline Blended Teaching Mode in Universities in the Post-pandemic Era

Dongqing Pan^(✉)

Business School, NingboTech University, Ningbo 315100, Zhejiang, China
pandongqing@nit.net.cn

Abstract. SPOC (small private online course) is getting more and more attention from universities because of its high degree of integration with undergraduate education, individualized teaching, and students' intrinsic learning ability. In terms of design ideas, it is necessary to enrich learning resources before, during and after class with clear purpose and guidance, strengthen teacher-student and student-student interaction during class, and emphasize targeted communication between teachers and students after class. In terms of the implementation path of the reform, it is suggested to advocate the systematization of teaching objectives and the integration of course teaching and curriculum elements, carry out ideological education by means of influencing character by environment and analyzing cases, construct virtual learning communities centred on teachers and students, focus on and reflect students' participation, and implement diversified course grade evaluation.

Keywords: Post-pandemic era · SPOC · Online and offline blended mode · Participation

1 Introduction

COVID-19 pandemic has been going on for more than two years and has now entered the “post-pandemic era”. In the “post-pandemic era”, it does not mean that the pandemic has completely disappeared and everything has returned to the status quo ante, but that the pandemic is fluctuating. With the backflow of foreign countries and seasonal factors, outbreaks can occur on a small scale at any time. Therefore, COVID-19 pandemic will have a profound impact on production, life and study for a longer period of time.

After the outbreak of the pandemic, China's higher education quickly responded, moving from “offline teaching” to “online teaching” in a very short period of time. Overall, the results of comprehensive online teaching are satisfactory. However, there are also some problems in practice, such as poor infrastructure, network congestion, teachers' lack of online teaching experience, and barriers in teacher-student interaction. With the emergence of these problems, new orientations and requirements are required for the reform of university teaching (including online and offline teaching) in the post-pandemic era.

© The Author(s) 2023

A. Volodin and I. Roumbal (Eds.): ICECIDT 2022, ASSEHR 677, pp. 582–590, 2023.
https://doi.org/10.2991/978-2-494069-02-2_64

At present, the post-pandemic era coincides with the network era and the intelligent era (hereinafter referred to as the overlapping period of three eras), which requires rational thinking about the existing online and offline blended teaching mode in colleges and universities. How can colleges and universities cope with these new problems and phenomena? Which mode of online teaching will be carried out? How will online instructors change and adapt their roles in the classroom? What new requirements will online teaching place on students? How does the offline teaching mode dovetail with the online teaching mode? Facing these questions, teachers need to have a scientific and rational understanding of online and offline blended teaching; second, teachers need to be able to think deeply and calmly about various problems that arise in online teaching; third, teachers need to have a full understanding of the laws of teaching and conduct a useful exploration of the effects of teaching evaluation. In view of this, it is very necessary to discuss the new connotation and characteristics of online and offline teaching and mode in universities in the post-pandemic era, so as to fully understand and grasp the new trends and changes of online and offline blended teaching mode, and to combine SPOC theory and its practice to promote the enhancement and transformation of online and offline blended teaching mode, means and methods, etc.

2 Literature Review

Although there are a few of existing research results on the application of SPOC (small private online course) in the online and offline blended teaching mode in undergraduate universities, they have some depth and involve a wide range of perspectives.

2.1 Focusing on the Understanding of SPOC in University Teaching

Xu Min (2020) argued that SPOC had deep knowledge construction characteristics and could help increase the stability of students' online learning [1]. Hu Lihua et al. (2020) believed that SPOC changed the traditional single course format, and achieved the inheritance, improvement and transcendence of MOOC [2]. According to Wei Haibo (2021), SPOC course platform had various "networking" functions, and teachers and students could upload and download teaching contents, thus supporting synchronous and asynchronous interactions between teachers and students [3]. Ma Yanmiao et al. (2021) argued that online systems such as SPOC provided more diverse options for students. Tan Mengna and Fei Yuanyuan (2021) believed that introducing SPOC online course mode into English language teaching improved students' engagement and enhanced teaching effectiveness. According to Liu Lindong et al. (2021), the blended learning mode combining SPOC online courses with traditional courses provided a fragmented and personalized learning environment for learners, effectively improved students' creative thinking, and broadened their learning channels [4]. Sun Lixin, Li Shuo, and Song Yuxin (2021) considered SPOC as the integration of physical classroom and massive open online course MOOC, with both online and offline learning functions [5]. Chen Xifeng (2021) believed that SPOC was conducive to the integration of fragmented learning time and more conducive to practical teaching [6].

2.2 Focusing on the Practical Application and Support of SPOC in University Teaching

Gu Chunxia (2020) pointed out that SPOC could meet diversified online learning and could be applied to online and offline blended teaching. Tao Yingchun (2021) argued that with the influence of SPOC, some universities carried out online teaching by using online platforms such as Rain Classroom, Super Star and Tencent Classroom, and realized real-time online communication between teachers and students in “air courses” on the Internet. According to Zhang Jun’e et al. (2021), SPOC could help reconstruct the teaching process and optimize the learning mode [7]. Ji Xianghong and Chen Yunzhi (2021) believed that with the use of SPOC, it further increased the amount of information in teaching, improved students’ participation and learning experience, and enhanced teacher-student interaction [8]. Xie Hosheng and Chen Yuxian (2021) concluded that SPOC blended teaching realized the organic integration of online and offline teaching, and significantly improved students’ participation and learning effect based on teaching practice [9].

2.3 Focusing on the Construction of Support Service System for SPOC Application in University Teaching

Hu Fangxia and Zhang Xue (2020) advocated the construction of a high-quality support service system including service providers, service targets, content and environment [10]. Ye Bo (2019) pointed out that the VET cloud system was built in “Smart VET” and could be used for the construction and operation of SPOC.

2.4 Focusing on the Identification of Teachers in Online Teaching

Based on the interview data of college English teachers, Xu Yueting and Tao Jian (2020) explored the online teaching identity of foreign language teachers with the use of positioning theory, and found that teachers’ positioning at multiple levels was involved in the whole process of online teaching, and this understanding could help change the online teaching mode [11].

To sum up, according to the existing literature, researches on the change of online and offline blended teaching in universities in the post-pandemic era are gradually enriched, which are not only from the macro perspective, micro perspective and teacher identity perspective, but also involve the geographical span. However, the existing researches need to be further deepened. In order to deepen the understanding of online and offline blended teaching, it is necessary to integrate the Internet era and the Intelligent era, explore the new connotation and characteristics of online and offline blended teaching in the overlapping period of three eras, and combine SPOC theory and its practice to translate it into practical teaching programs and steps.

3 The Degree of Integration of SPOC and Online and Offline Blended Undergraduate Teaching

SPOC is an online and offline blended teaching mode that is designed for a small and specific group of people and integrates traditional classroom teaching. The concept was

developed by Armando Fox at the University of California, Berkeley. And its basic form is to use MOOC videos or online evaluation and other functions to assist classroom teaching in traditional classes. Since SPOC is highly targeted, individualized and sustainable, universities in China, such as Peking University and Tsinghua University, have begun to carry out SPOC practice on physical campuses.

3.1 Fitting Point of SPOC Mode and Undergraduate Education

According to the spirit of the National Education Conference, the overall improvement of talent cultivation quality requires adjustment and reform of the existing traditional teaching mode of undergraduate education. The flipped classroom and MOOC that have emerged have been promoted and applied to various types of university teaching, obtaining good teaching results and a number of contented teaching achievements. Based on these teaching reforms, scientific educational concepts and powerful teaching technologies, SPOC teaching mode has gained good development space and broad development potential after its introduction.

Theoretically, SPOC teaching mode better adapts to the values of exclusivity and pursuit of high achievement of elite universities, and can help universities achieve the goal of improving teaching quality. On the other hand, SPOC redefines the role of teachers in teaching, and teachers are no longer just responsible for teaching, but education, emphasizing the role of cultivating people. In SPOC, teachers need to focus more on teaching and students. Before the class, teacher is the provider and integrator of course resources and must be able to organize and arrange the online and offline course content according to the needs of the students. In the class, the teacher is a guide for students' learning, a mentor in group discussions, and a facilitator of problem solving. These characteristics are highly compatible with the current goal of "four returns" in education.

3.2 SPOC Mode is More Compatible with Teaching of Students According to Their Abilities

SPOC teaching mode can be considered as an upgraded version of MOOC. In this mode, teachers can screen some students to participate in SPOC based on their depth of learning, breadth of knowledge, classroom activity, previous course grades and other information. Since the information available is more adequate and effective, the teacher is able to ask targeted questions and make discussions or assign certain special projects based on students' understanding and feedback of classroom knowledge points, especially important knowledge points, and truly teach according to their abilities.

3.3 SPOC Mode is More Compatible with Students' Intrinsic Learning Motivation

In SPOC, the teacher is almost completely involved in the whole process of students' learning, which greatly stimulates students' intrinsic learning motivation. In addition, in modes such as MOOC and flipped classroom, although the initiative of students' learning is also emphasized, the implementation is prone to the phenomenon that a small number

of students are more active and most of them are still not highly engaged. In contrast, individualized instruction for students by teachers is possible in SPOC. At the same time, SPOC can form attendance for students explicitly or implicitly, including online and offline teaching, which can serve as a supervisor for some lazy students and also save teachers time and energy to care about attendance.

4 Design Ideas of Online and Offline Blended Teaching Based on SPOC

4.1 Enriching Learning Resources Before, During, and After Class with Clear Purpose and Guidance

The pre-class contents belong to the pre-study part of knowledge points, and refer to the introduction of basic concepts and theoretical knowledge points. At the same time, practical tasks are given to students to try to complete the tasks, so that they can easily find out the problems and identify the important and difficult points, and then they can study in a targeted way. In addition, students are required to complete the pre-class contents before class, and teachers can know the extent of students' self-study by the length of online study time. The main purpose of pre-class contents is to find the most important points and the "practical" points, avoid spending most of the class time on points that everyone is familiar with or that students can learn on their own.

In-class contents are mainly based on the questions asked by students, which were used in online and offline teaching. Therefore, it is necessary for teachers to record a few minutes of video to explain the important and difficult points. The offline classroom is extended around these knowledge points, and teaching methods such as brainstorming and role-playing are adopted to carry out flipped classroom. For post-class consolidation learning, students can use fragmented time to watch short videos repeatedly, individualize communication with teachers, and focus on understanding and mastering knowledge points. Advantages of in-class content arrangement are as follows. The online and offline classroom teaching mode based on mobile microlecture flipped classroom is not limited by time and space, and is a blend of formal and informal learning that deepens the application of knowledge points.

The post-class content refers to the knowledge summary in the PPT presentation format, which composes the important and difficult points of the chapter and facilitates students' review and consolidation of knowledge points. The online post-class assignments are also given, and students can complete them on cell phones.

4.2 Using Pre-class Learning to Promote Teacher-Student and Student-Student Interaction in Class

In classroom interaction, there are differences in understanding of pre-class learning of students with different bases, lacking conditions for interaction. Therefore, teachers are required to make clear requirements for pre-class learning tasks and test pre-class learning contents when available in order to grasp students' understanding of pre-class contents and make appropriate adjustments during interactive sessions in class. In addition, it is important to note the positive effects of student-student interactions. Although

some students with poor foundation do not understand the learning content deeply, they will have a set of their own ways of thinking. In addition, students with good foundation would obtain the inspiration in the class discussion, while students with good foundation can also share or list their own experiences, opinions and thinking patterns in the discussion, which invariably help the understanding of the learning contents of students with poor foundation. Moreover, the learning effect brought by this interactive discussion mode among students is far better than that of classroom learning.

4.3 Paying Attention to Targeted Communication Between Teachers and Students After Class

SPOC mode requires teachers to pay attention to the time not only before and during class, but also after class. According to the traditional views, it is believed that the post-class review is very important, but it is mainly conducted by students on their own, or the teacher-student interaction is considered as a question-and-answer session. In SPOC, teachers should carry out different work separately with students of different foundations to address individualized problems.

5 The Implementation Path of the Reform of Online and Offline Blended Teaching Mode Based on SPOC

5.1 Systematization of Teaching Objectives

Generally speaking, teaching objectives are divided into macro, meso and micro levels. In the SPOC teaching mode, the overall objectives of teaching should be given, and specific and operable milestones should be formulated for different stages of learning. Specifically, the overall goal is to accomplish the educational task of strengthening moral education and cultivating people, shaping students' values, imparting knowledge and cultivating their abilities. The milestones are divided into meso level and micro level. At the meso level, the phased objective refers to the construction of students' professional knowledge and the cultivation of their abilities in the professional knowledge, theoretical knowledge, tool application and data analysis. At the micro level, the phased objective refers to the implementation of teaching contents. In the online and offline blended teaching mode, the systematic teaching objectives would be completed by means of the pre-class deep learning, classroom interaction, after-class guidance and other means, focusing on knowledge points and refining the mind map.

5.2 Integration of Course Teaching and Curriculum Ideology and Politics

First is to carry out interactive ideological and political education. In the course content design, it is suggested to integrate the national policies, laws and regulations related to the profession, and be good at mining the surrounding phenomena, especially the news reports rich in political content to enrich the course teaching, so as to help students establish the correct ideological values implicitly. For example, in the teaching of "uploading and publishing of cross-border e-commerce products", in order to help

students better understand the issue of intellectual property protection, it is emphasized that there should be no infringement or theft of pictures on the cross-border e-commerce platform, and that students should abide by the regulations of the platform and the laws of the country, so that students can gradually acquire good professional ethics. Second is to enhance students' ideological and political awareness with the use of case study method. In the teaching, teachers should consciously collect and organize some cases in reality to deepen understanding and conduct correct ideological guidance. For example, in the teaching of "introduction to cross-border e-commerce platforms", the introduction of the major news event of "the sky-high fine imposed by the General Administration of Market Supervision on Ali" will help students better understand the regulation of monopolistic behavior by Chinese government departments according to the "Anti-monopoly Law", so as to enhance students' professional ethics of complying with national laws and regulations.

5.3 Building Virtual Learning Communities Among Faculty and Students

It is suggested to build an online learning center with teachers and students as the main body. First, from the perspective of students' experience and cognition, and guided by students' sense of gain, the course knowledge points can be optimized. Important knowledge points should be studied before class and interactive in class, and key knowledge points can be recorded in short videos for students to learn in class and consolidate after class. Second, the course knowledge points are project-oriented, so that students can be driven by project tasks and realize the internalization of motivation. Third, the course teaching assistants are selected by students on a voluntary basis. The teaching assistants should be able to help teachers mobilize the online learning atmosphere, collect online information and assist in recording teaching videos.

5.4 Diversification of Course Grade Evaluation

Grades are designed to reflect student participation. In the era of information technology, teachers can use the learning data of intelligent teaching such as Super Star Learning Pass to accurately grasp students' learning activeness, implement bonus and penalty points, weaken the result assessment, and emphasize the process assessment. In terms of the assessment method, the diversified means of "paper examination + clock in online learning + online work report + industry tutor assessment" are adopted to assess students' learning situation.

6 Conclusion

SPOC can be widely used in the online and offline blended teaching mode of universities, which is the improvement and upgrade of MOOC. In the post-pandemic era, it is necessary to combine SPOC theory and its practice in order to promote the integration and upgrading of online and offline blended teaching modes. This study discusses the positive role of SPOC in undergraduate education, which is mainly reflected in the fit between SPOC and undergraduate education, the fit between SPOC and teaching according to

students' abilities and the fit between SPOC and students' intrinsic learning motivation. In teaching practice, the design concept and ideas need to be re-planned, the purpose and guidance of blended teaching should be clarified, and the learning resources before, during and after class should be organized and enriched based on this guidance. Meanwhile, the interaction between teachers and students in class should be strengthened, and targeted communication between teachers and students should be emphasized after class. More targeted measures and methods are proposed in the implementation of the reform.

Authors' Contributions. This paper is completed by Dongqing Pan independently.

References

1. Xu, Min. 2020. Research on the mechanism and strategy of SPOC based teaching mode under the background of all online courses. *Comparative Study of Cultural Innovation*, 4 (in Chinese).
2. Hu, Lihua. 2020. Research and practice of the effectiveness of the blended teaching model of university computer basic course based on SPOC. *Comparative Study of Cultural Innovation*, 8 (in Chinese).
3. Wei, Haibo. 2021. Evolution of blended teaching mode in the era of artificial intelligence. *Computer Knowledge and Technology*, 17 (in Chinese).
4. Liu, Lindong, Jiyan Lin, Yilin Wu, and Qian Zhang. 2021. Design and application of web framework and development course based on SPOC. *Computer Knowledge and Technology*, 17 (in Chinese).
5. Sun, Lixin, Shuo Li, and Yuxin Song. 2021. Exploration and analysis of SPOC mixed teaching model in colleges and universities—Based on the reform of flipped classroom teaching mode. *Journal of Adult Education College of Hebei University*, 23 (in Chinese).
6. Chen, Xifeng. 2021. Exploration of SPOC blended practice teaching for professional quality courses in the post-MOOC era—Taking “Advertising Psychology” course as an example. *Guangxi Education*, (11) (in Chinese).
7. Zhang, Jun'e, Ying Jin, Liming You, Huiying Qin, Xiaoling Feng, and Ke Liu. 2021. The excellent course construction and reflection of nursing management for postgraduates. *Chinese Journal of Nursing Education*, 18 (in Chinese).
8. Ji, Xianghong, and Yunzhi Chen. 2021. Investigation into the instructional practice of asynchronous SPOC hybrid course of commodity packaging design. *China Education of Light Industry* (01) (in Chinese).
9. Xie, Hosheng, and Yuxian Chen. 2021. Exploration of blended teaching mode in vocational education based on SPOC concept. *Vocational & Technical Education Forum*, 37(04) (in Chinese).
10. Hu, Fangxia, and Xue Zhang. Research and practice of blended learning support service system based on SPOC. *Journal of Higher Education*, (02) (in Chinese).
11. Xu, Yueting, and Jian Tao. 2020. Research on the identity of Foreign language teachers in universities in the context of online teaching. *Foreign Languages and Their Teaching*, (05) (in Chinese).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

