Received: 15 March 2020 | Revised: 19 March 2020 | Accepted: 20 March 2020

DOI: 10.1002/hbe2.191

WILEY

CASE STUDY

COVID-19 and online teaching in higher education: A case study of Peking University

Wei Bao

Graduate School of Education, Institute of Education Economy, Peking University, Beijing, China

Correspondence
Wei Bao, Graduate School of Education, Institute of Education Economy, Peking University, Beijing 100871, China.
Email: baowei@pku.edu.cn

Funding information
Ministry of Education of China and the project The Research of Faculty Development

Peer Review
The peer review history for this article is available at https://publons.com/publon/10.1002/hbe2.191.

Abstract

Starting from the spring of 2020, the outbreak of the COVID-19 caused Chinese universities to close the campuses and forced them to initiate online teaching. This paper focuses on a case of Peking University's online education. Six specific instructional strategies are presented to summarize current online teaching experiences for university instructors who might conduct online education in similar circumstances. The study concludes with five high-impact principles for online education: (a) high relevance between online instructional design and student learning, (b) effective delivery on online instructional information, (c) adequate support provided by faculty and teaching assistants to students; (d) high-quality participation to improve the breadth and depth of student's learning, and (e) contingency plan to deal with unexpected incidents of online education platforms.

KEYWORDS

COVID-19, instructional strategies, online education

1 | INTRODUCTION

Since the early spring of 2020, Chinese universities have been experiencing an unprecedented massive "migration" from traditional in-class face-to-face education to online education. Due to the widespread of Coronavirus disease (COVID-19) in China, following the government's requirements of "nonstop teaching and learning," most Chinese universities have started online education. In a short time period, millions of faculty members started to teach in front of a computer screen, and their students have to stay at home and take the courses through the internet. Beyond China, with the spread of COVID-19 across the world, as of March 13, 61 countries in Africa, Asia, Europe, the Middle East, North America, and South America have announced or implemented school and university closures and most of universities have enforced localized closures (UNESCO, 2020). This paper therefore identifies the high-impact practice principles of online higher education and provides a case study for colleagues at universities to consider conducting online education in similar circumstances.

2 | CASE CONTEXT

Since the beginning of the 21st century, Chinese universities have launched online education reforms to form an open education network based on information and network technologies. With the rapid development of Massive Open Online Courses, the number of these online courses offered by Chinese universities has exceeded 500, and nearly 3 million people have participated in these courses (Shang & Cao, 2017). As the forerunner of online education in Chinese universities, Peking University has offered about one hundred online courses. However, compared to the face to face courses offered by universities, the proportion of online courses is still low, and most of the online courses are taken by adult vocational students who have not registered at Peking University.

The outbreak of COVID-19 was unexpected and it forced Peking University to launch live online programs of a total of 2,613 undergraduate online courses and 1,824 graduate online courses in order to ensure the normal teaching operation, with 44,700 students stay at homes or dorms (Lei, 2020).

3 | CASE FOCUS

It is a massive, disruptive shift to move all the existing courses online in a matter of days. In general, a complete online course requires an elaborate lesson plan design, teaching materials such as audio and video contents, as well as technology support teams. However, due to the sudden emergence of the COVID-19, most faculty members are facing the challenges of lacking online teaching experience, early preparation, or support from educational technology teams.

In addition to the challenges to the faculty, existing research indicates that more than 60% of Chinese college students have a tendency to have ambiguous future career goals, lack active academic involvement, and spend more time in-class study compared with out-class study according to their study time (the average total graduation credit requirement for Chinese universities is 163 credits) (Bao, 2019; Bao & Zhang, 2012). In addition, based on an analysis of students' responses in social media, for such a large-scale online teaching, the challenges for students did not come from technical operational obstacles. Instead, they have difficulties due to the lack of a good learning attitude. Students often have problems such as lack of self-discipline, suitable learning materials, or good learning environments when they are self-isolated at home.

The present case study will focus on those problems presented above, and discuss how faculty can implement effective instructional strategies to prevent negative learning attitudes of college students and ensure the effectiveness of online education.

4 | INSTRUCTIONAL STRATEGIES

Based on observations of online teaching at Peking University, this paper classifies six instructional strategies to improve students' learning concentration and engagement in order to achieve a smooth transition to online learning.

4.1 | First, making emergency preparedness plans for unexpected problems

Since all the courses were switched to online education mode, the computer servers may not be able to host such a large scale of new users, the online education platform may often shut down because of overload. In order to solve all kinds of unexpected issues timely, faculty need to prepare Plan B or even Plan C before classes start and inform students in advance.

4.2 | Second, dividing the teaching content into smaller units to help students focus

Many Chinese college students have shown weak persistence in online learning, which seriously restricted their learning effectiveness (Li, Wu, Yao, & Zhu, 2013). In order to ensure that students concentrate on online study, faculty should reasonably break down the content of the in-class teaching into different topics and adopt a modular teaching method. In other words, on the basis of ensuring a clear knowledge structure in the curriculum, faculty divide the teaching content into several small modules with each lasting approximately 20–25 min.

4.3 | Third, emphasizing the use of "voice" in teaching

In traditional in-class teaching, body language, facial expressions, and teachers' voice are all important teaching tools. However, once a course is switched to online teaching, body language and facial expressions are under restrictions as it is difficult to use these tools through screens, and only "voice" could be fully functioned. Therefore, in online teaching, faculty should appropriately slow down their speech to allow students to capture key knowledge points.

4.4 | Fourth, working with teaching assistants and gain online supports from them

The technical requirements of online teaching are far greater than traditional in-class teaching for inexperienced faculty members. In view of the fact that most of the faculty at our university are insufficiently trained or supported to operate online education platforms, the support from teaching assistants is particularly important. Faculty should fully communicate with the teaching assistants before the class to make sure that they understand the objectives, knowledge framework, and teaching activities of each class. In this way, the teaching assistant can provide effective support in online teaching. In addition, teaching assistants can also provide consultations and answer questions for academically underprepared students by using email, WeChat, and other social platforms after class.

4.5 | Fifth, strengthening students' active learning ability outside of class

Compared with traditional in-class lectures, faculty have less control over online teaching, and students are more likely to "skip the class". Therefore, the progress of online teaching and its learning effectiveness largely depend on students' high-level active learning outside of class. To this end, faculty should use various methods to moderately modify students' homework and reading requirements to strengthen students' active learning outside of class.

4.6 | Sixth, combining online learning and offline self-learning effectively

Insufficient pre-class study preparation, limited participation in class discussions, and inadequate discussion depth are common

phenomena in traditional in-class teaching, similarly, those issues should not be overlooked in online teaching. In order to solve such problems in online teaching, faculty should consider two phases of teaching, the offline self-learning phase and the online teaching phase. In the offline self-learning phase, students are required to read the course-specific literature and submit short papers based on their reading of key materials before the class. Faculty should provide feedback to students' assignments and know the learning cognitive levels of students. In this way, faculty are able to make adjustments in teaching content before class. In the online teaching phase, faculty should use a discussion section for students to exchange their understanding based on their reading. Thus, students will not learn ambiguous, fragmented, and surface knowledge. Instead, they will experience deep learning during the discussion.

5 | CASE CONCLUSION

This paper concludes with five principles of high-impact teaching practice to effectively deliver large-scale online education, through the case analysis of Peking University's online education. First, the principle of appropriate relevance. The quantity, difficulty, and length of teaching content should match with the academic readiness and online learning behavior characteristics of students. Second, the principle of effective delivery. Due to students' characteristics of low concentration in online learning, it is essential to adjust the teaching speed in order to ensure the effective delivery of teaching information. Third, the principle of sufficient support. Faculty and teaching assistants need to provide students with timely feedback, including online video tutoring and email guidance after class. Fourth, the principle of high-quality participation. It is necessary to adopt some measures to improve the degree and depth of students' class participation. Last, the principle of contingency plan preparation. In view of the extraordinarily large scale of online education, it is necessary to make contingency plans in advance for addressing possible problems such as the traffic overload issue of the online education platform. Furthermore, since this online teaching "migration" is implemented quickly during the outbreak of COVID-19, students' anxiety needs to be relieved in various ways to ensure that they can actively and effectively engage in online learning.

ORCID

Wei Bao https://orcid.org/0000-0002-4134-1667

REFERENCES

Bao, W. (2019). Bridging the gap between research and practice: Identifying high-impact educational practices for Chinese undergraduate education. *Peking University Education Review*, *1*, 105–129.

Bao, W., & Zhang, X. (2012). The multi-dimensional structure and influence mechanism of student academic involvement in China. *Fudan Education Forum*, *6*, 20–28.

Lei, G. (2020). Peking University spring semester begins with online teaching. *Peking University News*. Retrieved from http://news.pku.edu.cn/xwzh/979e47acd7bf4c9592945323a2292f4d.htm

Li, Y., Wu, S., Yao, Q., & Zhu, Y. (2013). Research on college students' online learning behavior. *e-Education Research*, *34*(11), 59–65.

Shang, J., & Cao, P. (2017). "Internet plus" and the reform of higher education: A preliminary study on the development strategy of higher education informatization in China. *Peking University Education Review*, *1*, 173–182.

UNESCO. (2020, Match 13). *COVID-19 educational disruption and response*. Retrieved from https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures

AUTHOR BIOGRAPHY

Wei Bao is an Associate Professor with tenure of higher education administration in the Graduate School of Education at Peking University (PKU). She is also a researcher in the Institute of Education Economy at PKU. Her research interests include college impacts on student learning outcomes, finance of higher education, faculty development, and private higher education. In recent years, she has conducted sustainable national college student surveys, exploring how family socio-economic background, academic readiness, pedagogics, and financial investment impact students' learning among higher education institutions in China. Her latest book, *Unfinished Transformation: College Impacts on Student Development* (Education Science Publishing House, 2014), received the 2016 Outstanding Publication Award from China Association of Higher Education. She received a PhD in education from the University of Tokyo (2005) and held appointments at Tokyo University Center of Research on University Management and Policy before joining PKU.

How to cite this article: Bao W. COVID-19 and online teaching in higher education: A case study of Peking University. *Hum Behav & Emerg Tech*. 2020;2:113–115. https://doi.org/10.1002/hbe2.191