An Experimental Comparison between Online and Offline Seminar for Junior Students in University—OBE-Based Perspective

Yun Zhou[1,*] and Yifan Ji[2]

[1] School of Law and Economics, Wuhan University of Science and Technology, Wuhan, Hubei, China
[2] VOYAH Automobile Technology Company Ltd., Wuhan, Hubei, China
Email: 372654500@qq.com (Y.Z.); 532041393@qq.com (Y.J.)
*Corresponding author

Abstract—**Seminar is a student-led teaching mode with student-teacher interaction. The seminars for juniors are more fully infiltrated by the concept of OBE (Outcome-Based Education). After the outbreak of the COVID-19 epidemic, online teaching became widely used and entered a new stage of its own development, which both challenged and facilitated the development of traditional offline seminar courses. Our team encountered the real dilemma of Wuhan's closure of the city in the process of offering the seminar "Social Security System Reformation in China" for juniors, and experienced an unusual process from online teaching to offline teaching. This paper hopes to explore the path of effective integration of OTO (Online to Offline) seminars by reflecting on the two rounds of OTO course experience.**

Keywords—**seminar, OTO (Online to Offline), OBE-oriented**

I. INTRODUCTION

Seminar is a common teaching format in universities. Unlike the freshman seminar, which emphasizes guiding students to adapt to university studies and establish professional cognition, the seminar in the third year focuses on the application of knowledge and theories learned, and can more focus on implementing the OBE education philosophy. With the development of modern information and network technology, the world has entered the Internet era, which means that the form and content of seminar have to be changed accordingly to meet the new requirements and standards for learning outcomes in the new era of OBE education philosophy. On the other hand, the development of the Internet has also provided new technology to support the seminar with more dynamic and depth. At the beginning of 2020, a sudden COVID-19 epidemic swept the world, changing the world unprecedentedly in many ways like never before, including the impact on normal social interactions between people, disrupting the normal teaching order in schools from time to time, and rapidly promoting and developing online education using the Internet as the medium. It is foreseeable that in the post-epidemic period and in the near future, online and offline integrated teaching will become an inevitable trend in the education field, and OBE-oriented junior seminars urgently need to accelerate the exploration and practice in this area. Our team took on the seminar "Social Security System Reformation in China" for the first time in 2020 during the Wuhan epidemic closure period, and we had to adopt online teaching methods. After the city was unblocked, the second course was switched from online to offline, which is the opposite of the common path of other courses from offline to online during the epidemic period, which is interesting and gives us an unusual way of thinking about the integration of online and offline teaching.

II. LITERATURE REVIEW

The OBE concept, namely outcome-based education, was first proposed by Spady [1] in 1981, and its core idea is that instructional design and implementation should aim at the final learning outcomes achieved by students through the educational process. Later some scholars conducted deep research around the influence of study outcome on education. Morcke *et al.* [2] explored the underpinnings of OBE, just as its historical origins, theoretical basis, and empirical evidence of its effects. Reddy and Reddy [3] pointed out that outcome based education process may emerge out as one of the most useful methods of teaching-learning process. Barman *et al.* [4] made an empirical contribution to the debate about outcome- and competency-based approaches in health sciences education and showed variations of how teachers enacted the same outcome-based framework for instructional design.

Li *et al.* [5] took earlier research on OBE in China. They made a comparison between the result-oriented education and traditional education, proposed that the result-oriented education reform of Chinese higher engineering education should focus on conversion from subject-oriented to target-oriented, from teacher-centered to student-centered and from quality supervision to continuous improvement. Cui [6] used questionnaire survey and fuzzy comprehensive evaluation to construct the evaluation

index system of the seminars in business courses on the OBE concept.

The research on OBE, on discussion-based teaching and on online education are abundant. Even though, the exploration and practice of introducing OBE idea into OTO Seminar is still of some innovation.

III. THE IDEA OF OBE IN JUNIOR STUDENTS' SEMINAR

This concept of OBE has been developed over the past 40 years and has become more and more widely accepted in the educational community. The seminar is typically characterized by student participation and student-teacher interaction, and its advocacy of learning to apply is clearly in line with the main idea of OBE. In designing the teaching program of the seminar "Social Security System Reformation in China", we also consciously highlighted the OBE orientation and design all aspects of the seminar course around the learning results.

A. What is the Outcome?

The way of evaluating learning outcomes simply based on test scores has long been abandoned, and learning outcomes have been given a richer connotation. Learning outcomes are not only the acquisition of specific knowledge and theories, but also the improvement of various abilities, the accumulation of experience, the formation of good values and personal cultivation, and so on. "Outcome" is a continuous, accumulative, and superimposed process, based on the reapplication of the results of the previous stage, so the pursuit of learning outcomes should not only be based on the immediate period, but also look to the future, so as to integrate with the concept of lifelong education and achieve the true meaning of learning [7, 8].

B. Role of the Seminar: Take Advantage of the Last Outcome to Obtain the Next Outcome

The purpose of our junior seminar is to change the traditional teacher-delivered passive learning style and improve students' active learning through student-led research and discussion work on a certain topic. Based on this purpose and the OBE concept, we have given the seminar "Social Security System Reformation in China" four clear learning outcome objectives.

1) We hope that students can use their previous expertise, basic theories and research methods to analyze and research a certain topic, so as to achieve "learning for application".

2) We hope that students will develop their own independent views, including critical awareness, in the process of exploration, and become thoughtful and creative people.

3) We hope that the team spirit of students can be reflected in the group learning process and enhance their ability to cooperate.

4) We hope that by discussing realistic topics in the field of social security in China, students will strengthen their sense of social responsibility and better serve society in the future.

Obviously, the goals of learning outcomes in these four areas are actually the further optimization of past learning outcomes, and thus confirm that learning outcomes are a continuous existence. In the process of lifelong learning, there is no final learning outcome, only a better learning outcome (how to do better).

IV. DESIGN OF THE OBE-ORIENTED SEMINAR

The design of teaching plan is crucial to the realization of teaching objectives. Based on the seminar objectives set in the previous section, we planned three aspects of the seminar: the group assignment, the seminar process, and the course assessment, and our course mind map is shown in Fig. 1.
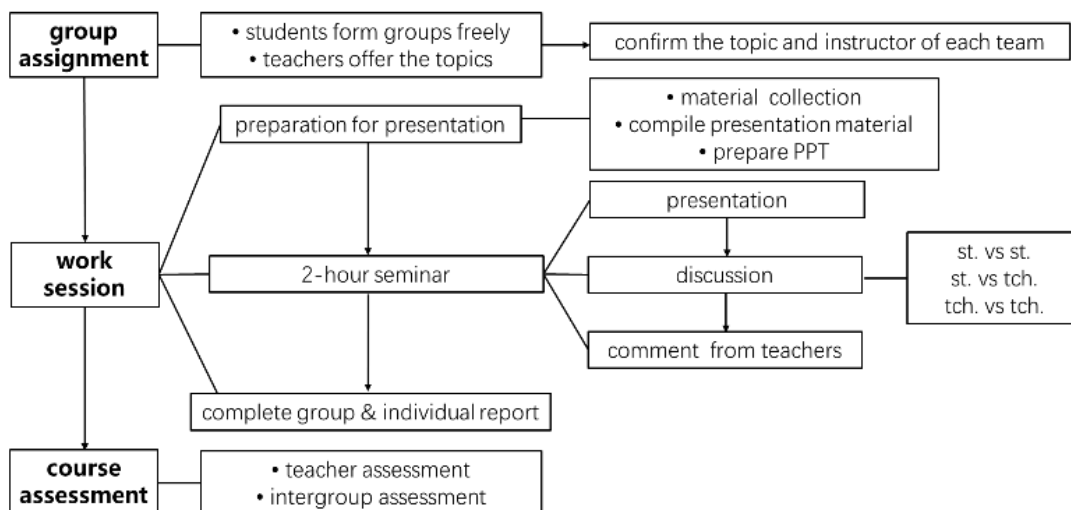

Fig. 1. Design of the OBE-oriented seminar.

A. Group Assignment

The seminar was shared by 2–3 teachers and took the form of student group work, with each teacher directing a number of groups and students divided into groups of three with a maximum of four members per group. The reason for having no more than four students in a group is that it is difficult to control hitchhiking with more than four students, and a group of two students cannot coordinate possible internal arguments, while the three-person combination is more stable in interpersonal relationships. The reason for sharing the seminar with several teachers is that we hope the seminar course can be conducted among teachers, teachers and students, and among groups, so that more new ideas can be generated.

B. Work Session

After the students have formed study groups by themselves, the whole process of the seminar will consist of three parts: determining the topic of the group – data review and preparation of the presentation – presentation & discussion. The topics are chosen by a team of teachers who draft a number of directional topics (slightly more than the number of groups), from which the students select and assign instructors, and then the group members and instructors agree on the final topic of the seminar. The preparation of the presentation is done under the guidance of the teacher. The discussion in the seminar is based on the research of a certain topic, so the seminar allows the students to master the scientific paradigm of research, which will lay the foundation for the thesis work in the fourth year, which is why the instructor's intervention is necessary for this part. Presentation & discussion, in this session, we design a group to make a presentation about its chosen topic, and each group member needs to take part in the show, and then the teacher and other groups will ask questions for discussion. In each seminar, at least two teachers should participate, and if possible, we hope to invite people who are good at the field to participate in the discussion, so as to realize the real meaning of the discussion, that is, to continue to explore and think in depth, and we hope that in this process, teachers and students can gain in thoughts.

C. Course Assessment

TABLE I. RATING SCALE

Combination of the grade	Assessed by	Proportion
Group research report grade	Instructor	25%
Individual research report grade	Instructor	25%
Group presentation and discussion grade	Teacher group	15%
	Students' intergroup	15%
Personal presentation and discussion grade	Instructor	20%
Total		100%

The assessment of each student's seminar grade is based on a combination of the following aspects: the overall group research report grade and the individual research report grade, which are assessed by the instructor; the group presentation and discussion grade, which is determined by the teacher group evaluation grade and students' intergroup evaluation grade (each account for 50%); personal presentation and discussion grade, where discussion scores include discussion participation on other topics, are assessed by the instructor. This combination is shown in Table I.

V. SEMINAR ONLINE IS A NECESSITY RATHER THAN AN OPTION TO SEEK DURING WUHAN LOCKDOWN

For the first time in the "Social Security System Reformation in China" seminar in the spring semester of 2020, we have made arrangements for the design of the course, which is based on regular offline teaching. The seminar is a 1-credit, 16-hour course, and the number of students is 30, which can be freely combined in groups of three into 10 groups. We plan to add 4 additional hours so that each group can have 2 hours of seminar time, which is not a difficult task.

However, a sudden lockdown in Wuhan made us required that all teaching must be carried out online. This change left us a bit helpless for a while, thinking that it was an almost impossible task because seminars require discussion and communication, which is not possible with the usual MOOC form of teaching, so we asked to delay the seminars until after the epidemic was over, however, it was not approved. We had to choose between several commonly used platforms for interactive teaching – DingTalk, Wisdom Tree, Tencent Classroom, and Tencent Meeting, and finally we decided to use Tencent Meeting platform for the presentation & discussion session of the seminar. Tencent Meeting does not require additional account registration and can enable both video speaking and screen sharing. In addition, smooth operation is also an advantage of the platform. The preparation stage was decided by each study group and the instructor (some used QQ, some used WeChat), while the final research report could be submitted to the instructor by traditional online file transfer. Each presentation & discussion lasts for 2 hours, and the meeting is reserved in advance on Tencent Meeting, while the preparation phase and report writing are done off-campus, so we give students the tasks related to the seminar a month in advance. Of course, during the city closure period, all our work can only be carried out with the help of the Internet.

Frankly speaking, the online teaching during the lockdown period gave us an unprecedented degree of "freedom", which is reflected in two aspects.

1) Firstly, we are no longer limited to the established schedule strictly, and can book Tencent Meeting time more flexibly according to the suitable time for teachers and students, and even extend each seminar time appropriately so that the discussion can proceed more fully and deeply.

2) Secondly, the online seminar is not only free from time constraints to a certain extent, but also, most importantly, free from space constraints, which makes it possible to invite professionals as guests on the cloud, make more professional comments on the presentation, and participate in the discussion to exchange the latest research results and practical experience.

Fortunately, we successfully completed this round of seminar course online at this unusual time, and the effect exceeded our expectation.

At the same time, we also have to admit that this kind of seminar lacks of emotion that cannot be present in person. The non-enterprise version of Tencent Meeting could not guarantee the fluency of all participants turning on the video at the same time, so only the speaker was allowed to turn on the video each time, and it was not known whether the participants at the other end of the computer screen were concentrating on the meeting or not, thus making it difficult to generate the kind of emotional communication as when they were face-to-face. Second, in the discussion session, it was difficult for each group to discuss and communicate internally, which affected the cooperation within the team at this stage. Third, it is difficult to monitor the actual participation of other groups, which affects the scientific assessment of students. Finally, the lagging problem caused by the network operation itself inevitably affects the effectiveness of the seminar, and even some poor students may not have Internet access at home, which makes it possible to be unfair when evaluating students' class performance [9].

VI. Normal Offline Seminar in the Internet Age after Lockdown

The complete unblocking of Wuhan allowed our seminars to be restored offline in the spring semester of 2021. This time, we still let students divide their own groups a month in advance, choose among the topics prepared by the teacher team, and thus determine the instructor of the group. The offline seminar had to strictly follow the university's schedule and discipline, and everyone had a presentation & discussion at a fixed time and place every week, which allowed teachers to fully grasp the students' participation in the class, but the time and space constraint made it difficult to invite professionals to come and exchange ideas and guidance.

For the student, the speaker no longer expresses herself or himself through the computer screen, but directly to the audience, which makes him/her more or less nervous, but once in the stage, especially in the discussion stage, it is much more enthusiastic than online, and this is exactly the effect we hope to see.

VII. Outcome Comparison between Offline Seminar and Online Seminar

Our seminar was outcome-oriented, so we needed to test whether our four pre-set outcome goals were achieved and to compare the impact of the two different teaching modes, online and offline, on the achievement of the goals [10]. We found that the OTO seminars differed only slightly in the realization of the two final outcomes of independent thinking and teamwork.

A. The Goal of Learning for Application

In the 2020 online seminar, we focused on the impact of the new epidemic on social security as a central topic, around which we established sub-topics for each group, some focusing on public health, some on unemployment, some on the work-related injury insurance disputes caused by the new epidemic, some on the balance of medical insurance funds, some on the actions of public welfare organizations, and so on. All of these topics and the theories they are based on have been covered in previous major courses, and students realize the application of what they have learned through the study of realistic topics. For the offline seminar in 2021, we still focus on hot topics in the field of social security, such as social security and rural revitalization, human resources development for the elderly, welfare extrusion due to the digital divide, graded treatment, delayed retirement age, and the history of social security theory and practice of the Chinese Communist Party. Compared to the 2020 selection, we have expanded the perspective on the established subject knowledge and theoretical framework, and students can conduct more in-depth research on these topics in the future graduation thesis stage based on seminars, but this difference obviously does not come from the difference between online and offline teaching modes.

B. The Goal of Independent Thinking

Our seminar emphasizes the leading role of students, and the role of teachers is to guide, especially in the presentation & discussion session, which is hosted by students throughout. In order to prevent free-riding, we controlled the number of students in each group and required each student in the group to undertake part of the presentation and submit an individual research report. Therefore, whether online or offline, under the effect of this mechanism, students were forced to think independently, complete their own tasks, and achieve the goal of autonomous learning. But in the discussion part, face-to-face offline is more motivating for students to express their opinions than online through the screen.

C. The Goal of Teamwork

The world is in an era that emphasizes both division of labor and cooperation, and the relationship between division of labor and cooperation is one of you and me. Seminar works in groups, which determines that the completion of this work is the result of teamwork, and that each student's final grade is closely related to the team's overall performance. With the help of modern Internet technology, discussions within the group can be completed online even during city closures, but we found that the degree of integration was less than that of offline close contact, especially in the discussion sessions, where the argumentative nature of the discussions made it difficult for team members from thousands of miles away to respond collectively in a short time.

D. The Goal of Social Responsibility Awareness

Establishing a sense of family and country and social responsibility is an important thrust of education in any country, and in the OBE concept, it is an outcome goal that focuses on long-term and lifelong. Whether focusing on the impact of the COVID-19 epidemic on global social security or on the realistic hot topics of social security in China, we are consciously cultivating students' sense of social responsibility by analyzing and studying hot topics

in society and then thinking about how to solve them in order to shoulder the historical mission of building the nation step by step in the future. There is also no difference between the online and offline modes in achieving this goal.

VIII. CONCLUSION AND SUGGESTION

After experiencing both online and offline seminars, we found that as long as the teaching program is well designed, the difference between the two in realizing the OBE concept is very small. The traditional offline has a slight advantage over the pure online in achieving the two outcome goals of independent thinking and teamwork, but it cannot be denied that the online teaching with the help of modern technology has incomparable convenience and flexibility in some details, which can solve the difficulties of campus education in special times. If we can combine the advantages of both and achieve organic integration of online and offline, we should be able to achieve better teaching effects in the normal society. Based on reflections on the first two rounds of seminars, we believe that effective integration of online and offline can be achieved in at least three areas:

A. Make Full Use of the Existing Campus Course Operation Service Network Platform (e.g., Wisdom Tree) for Course Management

Compared to work groups established on QQ and WeChat, the course operation service platform can reduce or even avoid ineffective socialization due to too many members in the group. In the preparation stage of the next seminar, we plan to use the Wisdom Tree platform to group students, assign topics and research tasks, and upload and share learning resources; after the presentation & discussion, we will use the platform to submit the research report and PowerPoint and the grade will be assessed.

B. Broke through the Space Limitation with the Help of Network Equipment to Realize Remote Participation of Somebody in the Presentation & Discussion Session

As mentioned above, we had invited professionals to participate in the topic discussion through Tencent Meeting during the Wuhan city closure, which benefited teachers and students a lot, but this idea could not be achieved again during the offline seminar after the closure. The conflict of time can be solved by adjusting the time, but the limitation of space can only be broken by remote network. Since the seminar is scheduled in a more advanced classroom, we plan to debug the network conference platform in preparation for the next round of seminars, which will facilitate the participation of guests in the seminar and will also be a benefit to students who cannot attend the class for special reasons (such as those who are quarantined).

C. Use Social Software to Carry out Group Work

Social software (QQ, WeChat) is efficient for small study groups when it is not convenient to meet and when resources need to be shared and documents need to be processed. Today's social software not only allows for multi-person video, but has also developed the ability for multiple people to edit documents online, which provides more convenience for group work.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Yun Zhou conducted the research and wrote the paper in Chinese; Yifan Ji translated the paper into English; all authors had approved the final version.

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