Research on Strategies for Improving Classroom Participation in Management Courses under the SPOC+BOPPPS Blended Teaching Model

Yuxuan Huang, Yumeng Zhan*, Nan Yao, Wenjing Cui
School of Digital-Intelligent Economics and Management, Guangdong University of Science and Technology, Dongguan, Guangdong, China
**Corresponding Author*

Abstract: Classroom participation shapes both the immediate effectiveness of teaching in management courses and the extent to which objectives for cultivating application-oriented management talent can be realized. Management courses at private undergraduate institutions commonly suffer from insufficient participation: students engage passively in behavior, deal with course content at a shallow cognitive level, and show little emotional investment. The SPOC+BOPPPS blended teaching model addresses these problems across three stages, online preparation before class, structured interaction during class, and closed-loop incentives after class. Taking the New Retail Operation Management course as a case, this study combines a questionnaire survey (352 questionnaires distributed, 326 valid), classroom observation, interviews with teachers and students, and analysis of students' reflective writing to diagnose participation problems along behavioral, cognitive and emotional dimensions; it sets out the design rationale of "dual drivers and three-stage integration" and explains the mechanism through which the model raises participation. A pre-test/post-test comparison between two parallel classes shows that the overall mean participation score of the experimental class rose from 2.77 to 3.43, a larger gain than that of the control class. Drawing on teaching practice in the "decision-making" unit, the study proposes strategies for improving participation along the three dimensions and reflects on the constraints encountered in practice, with a view to informing classroom reform in private undergraduate management education.

Keywords: SPOC; BOPPPS; Management Courses; Classroom Participation; Blended Teaching

1. Introduction

1.1 Research Background and Significance

Private undergraduate universities are responsible for cultivating application-oriented talents to some extent, and management programs are among the necessary courses in this regard. The Ministry of Education's Education Informatization 2.0 Action Plan (Jiaoji [2018] No. 6) advocates for promoting "Internet plus education" and integrating information technology into all aspects of education [1]; similarly, the Opinions on the Construction of First-Class Undergraduate Courses (Jiaogao [2019] No. 8) have proposed deepening the integration of modern information technology with teaching, replacing low-quality "water courses" with "gold courses", and actively guiding students towards inquiry-based and individualized learning [2]. Given this, how to shift management courses from teacher-centered lectures to student-centered participation has become a problem that teaching reform in private undergraduate institutions needs to address.

A typical manifestation of good teaching is the active participation of students. The content and application of the management course are closely linked to the results of students' participation in case discussions, situation simulations and group collaborations. However, there is a problem of low participation in private undergraduate institutions; thus, students are passive, their cognitive engagement is superficial, and their emotional investment is weak. Poor participation will not only affect what happens in a particular lesson but also reduce students' ability to apply management theory in real life and thus hinder the achievement of the goal of

Copyright @ STEMM Institute Press

application-oriented training.

Therefore, the problem of low participation in management courses needs to be addressed in practice. SPOC (Small Private Online Course) and BOPPPS (Bridge-in, Objective, Pre-assessment, Participatory learning, Post-assessment, Summary) are both mature methods widely used in higher education, and they can be combined naturally to connect online and offline learning and organise classroom interaction. The two are combined in a SPOC+BOPPPS blended teaching model, and based on teaching practice in private undergraduate management courses, the problems of participation and how to address them are investigated, along with the corresponding operational strategies.

1.2 Literature Review

SPOC was proposed by Professor Fox of the University of California, Berkeley, as a way to supplement classroom teaching with MOOC resources for small-scale, private and highly participatory online learning [3]. He Bin and his co-author describe SPOC as an inheritance, refinement and transcendence of MOOC; it integrates high-quality MOOC resources with the strengths of face-to-face teaching to restructure and renew the teaching process [4]. Domestic research has focused on the development of SPOC courses and the design of blended teaching sequences, and has generally concluded that online learning before class frees up classroom time for interaction.

The BOPPPS model started at Canada's Instructional Skills Workshop (ISW) program. Based on the achievement of instructional goals, the six parts of a lesson are organised as follows: bridge-in, objective, pre-assessment, participatory learning, post-assessment and summary; at the centre is the student, and participatory learning is employed [5]. The model is feasible and easy to implement, and it can improve both the structure of classroom interaction and the timeliness of feedback.

Research on Classroom Participation. Fredricks and others have classified learning engagement into behaviour, cognition and emotion [6]. The Chinese scholar Kong Qiping defines student participation as the type of mental activity and the extent of behavioural effort students put into learning, and studies it from the same three aspects [7]. Empirical studies in this area have generally found that behavioural engagement is easy to observe but often remains superficial, and cognitive and emotional engagement are more difficult to cultivate and are more dependent on instructional design and the quality of teacher-student interaction.

Although research on SPOC, BOPPPS and classroom participation has produced a large number of works, systematic studies that integrate the three and focus on participation in private undergraduate management courses are still lacking. This paper is a particular case of the above.

1.3 Research Approach and Methods

Mechanism analysis is used to diagnose the current situation, followed by practical tests, and finally, a strategy is proposed. Four Ways Are Used. A questionnaire survey collects data on students' participation in the New Retail Operation Management course at the behaviour, cognition and emotion levels. Structured classroom observations cover 12 teaching units in the same course. Qualitative data are obtained by interviewing teachers and students, as well as through students' self-assessments. A teaching experiment compares the pre-test and post-test results of two parallel classes in the course taught with the SPOC+BOPPPS model.

2. Concept Definition and Mechanism Analysis

2.1 The Nature of SPOC and BOPPPS

SPOC (Small Private Online Course) is an online course model for a particular group of students. Set admission requirements to limit high-quality MOOC resources to a specific campus class, combine the flexibility of online study with the organisation of in-class teaching, and shift the core of knowledge transmission online before class to free up time and space for deeper learning in the classroom [3, 4]. Blended teaching, in turn, aims to combine the advantages of self-directed online learning with those of face-to-face interaction and reorganises the teaching process to enable deeper learning.

The six parts of the BOPPPS model are: Bridge-in (to grab attention with a situation, question or case), Objective (to state what students should learn and achieve), Pre-assessment (to gauge students' prior knowledge), Participatory Learning (to have students actively learn through discussion, cases and practice), Post-assessment (to check if the objectives have been met), and Summary (to review the main points and assign

 Copyright @ STEMM Institute Press

follow-up tasks) [5].

2.2 A Three-Dimensional Framework of Classroom Participation

Following Fredricks et al. and Kong Qiping [6,7], this study defines classroom participation as the type of mental activity and the extent of behavioural effort students invest in their learning in class, and investigates it in three dimensions. Behavioural participation refers to the degree of open participation in listening, speaking, discussion and hands-on activities. Cognitive participation refers to the investment of thinking at the level of understanding, connection, questioning and elaboration of knowledge. Emotional participation refers to students' emotional experiences and sense of value in learning, such as interest, enjoyment, a sense of achievement, and identification with the meaning of the course. The three are related: behavioural participation carries and expresses the other two, cognitive participation determines the depth of engagement, and emotional participation provides the motivation to continue. Therefore, to increase participation, the three dimensions need to advance together.

2.3 The Mechanism through Which SPOC+BOPPPS Raises Classroom Participation

The SPOC+BOPPPS blended teaching model connects the development of online resources with classroom organisation to form a chain of online preparation before class, structured interaction in class, and closed-loop incentives after class. The effect of participation can be explained in stages.

Preparation for class online reduces cognitive load and gives students a head start in learning. Before each class, the SPOC platform will release micro-lecture videos, reading materials and preview quizzes, and students can learn some knowledge and prepare specific questions [8] for the class in advance. This arrangement reduces the cognitive load of in-class activities, provides students with the necessary background for case discussions, and gives them the confidence to engage in cognitive and expressive activities; thus, they will not be reluctant to participate due to difficulty in following the lesson [9].

Structured Interaction in Class Boosts Participation at All Times. The six components of BOPPPS provide an institutional arrangement for engagement: the bridge-in arouses emotional interest through a situation and a question; the pre-assessment has all students answering in real time; participatory learning shows behavioural engagement by means of group discussion, case questioning and role simulation; and the post-assessment and summary offer immediate feedback to boost cognitive engagement. Due to the organisation of interaction, participation is no longer the exclusive right of a few talkative students but has become a regular feature of the whole class.

Closed-loop incentives after class extend participation outside of class. Platform learning data are linked to the process evaluation, and after-class forum discussions, reflective journals and extension tasks form an incentive loop that records participation, evaluates it, and provides feedback. This increases the motivation to participate and promotes the continuous deepening of cognitive engagement and the development of emotional identification with the course.

3. Current State and Problems of Classroom Participation in Private Undergraduate Management Courses

3.1 Research Design

To investigate the current situation of participation, the study selected the New Retail Operation Management course as its research object and distributed a participation questionnaire to the 352 students in the two parallel classes, collecting 326 valid responses (163 from each class), with a valid response rate of 92.6%. According to the three-dimensional system by Fredricks et al. and Kong Qiping [6, 7], this instrument has been developed and consists of 17 items: 6 for behaviour, 6 for cognition, and 5 for emotion; each is rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). At the same time, the two teaching assistants also conducted structured observations of 12 teaching units in the course; semi-structured interviews were held with the two teachers who taught the course and with 15 students; and 96 pieces of students' reflective writing were collected. It should be noted that these two parallel classes are the same classes used for the teaching experiment in Section 4, and their pre-test means (2.77 and 2.80) are included in the overall mean of 2.79. The three problems mentioned above directly led to the

Copyright @ STEMM Institute Press

instructional design of the experimental class: front-loaded pre-class tasks and structured grouping were aimed at promoting passive behavioural participation; question chains and the pre-test/post-test loop were employed to achieve shallow cognitive participation; and situational introductions with timely feedback were designed to motivate weak emotional participation.

3.2 Survey Results on the Current State of Participation

Table 1 shows the overall level of the three dimensions of classroom participation.

Table 1. Descriptive Statistics of the Three Dimensions of Classroom Participation in the New Retail Operation Management Course

Dimension	No. of items	Mean	SD
Behavioral participation	6	3.02	0.86
Cognitive participation	6	2.58	0.91
Emotional participation	5	2.76	0.89
Overall	17	2.79	0.89

Note: N = 326; five-point scale.

Table 2. Mean Scores of Representative Participation Items

Dimension	Representative item	Mean
Behavioral participation	Listens attentively in class; no off-task activity	3.31
Behavioral participation	Answers the teacher's questions fairly completely	2.87
Behavioral participation	Raises hand to speak or asks questions spontaneously	2.43
Behavioral participation	Takes part in group discussion and states own views	2.78
Cognitive participation	Can restate and explain the core concepts of the course	2.94
Cognitive participation	Relates management theory to actual firm cases	2.61
Cognitive participation	Questions views or analyzes them from multiple angles	2.38
Cognitive participation	Summarizes and synthesizes what has been learned after class	2.47
Emotional participation	Finds the content of management courses interesting	2.82
Emotional participation	Feels a sense of achievement in classroom learning	2.63
Emotional participation	Believes management knowledge is valuable for career development	2.68

Note: five-point scale.

As shown in Table 1, the participation in the course is slightly below the middle of the scale (total mean of 2.79). Behavioral participation is relatively high, emotional participation is in the middle, and cognitive participation is the lowest; this is consistent with the findings in the literature that behavioural engagement is easy to achieve, but cognitive and emotional engagement are difficult to foster.

The means of the items in each dimension (Table 2) show a relatively spread-out distribution of participation.

Classroom observation results (Table 3) also show this phenomenon.

Table 3. Key Indicators of Classroom Observation (before the Intervention; Averages across the 12 Teaching Units of the Course)

Indicator	Mean or proportion
Instances of students raising hands or speaking spontaneously (per unit)	6.3
Instances of students answering when called on by the teacher (per unit)	14.2
Share of group members who actually speak during discussion (%)	61.5
Instances of off-task behavior such as mobile phone use in class (per unit)	12.4
Share of students giving a responsive answer to the teacher's question (%)	52.3

Note: The unit of observation is one teaching unit (one class session), and two observers used the classroom observation schedule to record; the values are the overall averages of the 12 teaching units in the New Retail Operation Management course and serve as the baseline for the current situation.

3.3 Major Problems Identified

Together, the questionnaire data, classroom observations and qualitative materials (interviews and reflective writing) have identified three problems in the class.

Behavioural participation is passive. The attendance rate is relatively high, but many students are not actively participating in class. Students raise their hands or speak up far less often than they are called on; free-riding occurs in group discussion; and the use of mobile phones in class is frequent among some students. One student reported in his/her self-evaluation that he/she had paid little attention during class. I only answer when the teacher calls my name, and in group discussions, I mostly listen to what others in my group are saying. This kind of

 Copyright @ STEMM Institute Press

behavioural participation is at a low level of compliance and lacks genuine interest.

Cognitive participation is superficial. Most students can remember the concepts, but few are willing or able to apply them in practice and analyze problems from multiple perspectives, or learn them in depth (the relevant item means are only 2.38 and 2.61). According to the teacher's report, most of the students use the same template for case analysis. They can list the knowledge points but cannot explain why or what to do; where classroom interaction is limited to repeating information, it is difficult to foster the development of managerial thinking or decision-making ability.

Emotional participation is low. Students rate the interest, value and sense of achievement of management courses as low, and their motivation is driven more by external evaluation pressure than by intrinsic interest [10]. This weakness will reduce the continuity of behaviour and cognition, and thus, low investment will fail to yield a sense of achievement and lead to further reductions in investment.

4. Implementation of the SPOC+BOPPPS Blended Teaching Model

4.1 Overall Design of the Model

Based on the mechanism analysis above, the model is built according to the design idea of "dual drivers and three-stage integration". The two drivers are theoretical foundations that provide a knowledge base, and technological support in the form of the SPOC platform and analysis of learning behaviour data to inform instructional decisions; three-stage integration refers to the coordination of the pre-class, in-class and after-class stages. The framework will be employed for the online preparation before class, organised interaction during class, and closed-loop reinforcement after class. Before class, micro-lecture videos, case materials and preview quizzes are uploaded to the SPOC platform for students to learn the initial knowledge; during class, teaching follows the six BOPPPS components and is centred on participatory learning; after class, the platform discussion board, reflective journals and extension tasks complete the loop, and the process performance is counted towards the course grade. The whole system is shown in Figure 1.

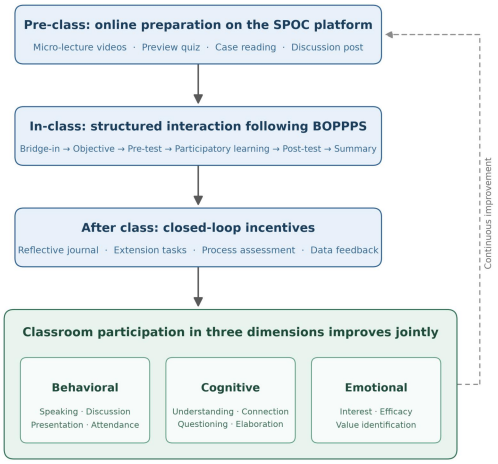


Figure 1. Overall Framework of the SPOC+BOPPPS Blended Teaching Model

4.2 A Teaching Unit in Practice

The "decision-making" module of the New Retail Operation Management course (two class hours, about 90 minutes) demonstrates the application of the model in practice.

Before class (SPOC platform). A micro-lecture on "Types and procedures of decision-making" (about 8 minutes) and five preview questions were released, along with a case for pre-reading: "Store expansion decisions at a restaurant chain". The students posted their recommended books in the discussion area.

In class (six BOPPPS components). Bridge-in (approx. 5 min): Play a short video of a chain brand going abroad and then ask the audience what they would do if they were in charge. Learning Objectives (approx. 3 minutes): To differentiate between various types of decisions, learn how to make decisions, and apply decision-making methods to simple decision problems. In the pre-assessment (about 7 minutes), students answered five questions on the platform within a time limit and received instant feedback on whether they were correct; based on this, the teacher adjusted the direction of teaching. Participatory learning (about 60 minutes) started with a group discussion of the case (groups of four to five students, with explicit roles for the chair, the recorder and the spokesperson), followed by group reports on their decision logic, and then moved to a role simulation of the decision situation, where different groups took on the roles of senior managers, middle managers and operational staff and argued for decision options from their respective positions. A brief follow-up (about 10 minutes) was held to see if the goals of the decision-tree exercise had

been achieved. In the summary (about 5 minutes), the teacher and the students together drew a knowledge map of the unit, and the teacher assigned the homework.

After class (closed-loop incentives). Students filled in a reflection journal for the unit ("What I have learned and what is still unknown"), participated in an extended case discussion on the platform board, and earned credit for the coursework grade (20%) based on preview completion, pre- and post-assessment scores, and contributions to the discussion; all of this was recorded by the platform.

4.3 Comparative Analysis of the Intervention Effects

To test the model, two parallel classes of the course (176 students in each) were selected: the experimental class was taught using the SPOC+BOPPPS blended model, and the control class was taught in the traditional way. Distribute the participation questionnaire before and after the intervention, and the results are shown in Table 4.

Table 4. Pre-Test and Post-Test Means of Classroom Participation in the Experimental and Control Classes

Dimension	Experimental class pre-test	Experimental class post-test	Control class pre-test	Control class post-test
Behavioral participation	3.01	3.58	3.02	3.14
Cognitive participation	2.56	3.29	2.60	2.74
Emotional participation	2.74	3.42	2.78	2.90
Overall	2.77	3.43	2.80	2.93

Note: 163 valid questionnaires in each class; five-point scale.

The post-test means of the three indicators in the experimental class all increased; the total mean rose from 2.77 to 3.43, and this increase was relatively larger than that in the control class, which rose from 2.80 to 2.93. Classroom observation points in the same direction: After the intervention, the experimental class averaged 14.8 instances of spontaneous speaking per unit and had a 92% rate of verbal contribution in group discussion, both of which were higher than the baseline recorded in the 12 units before the intervention (6.3 instances per unit and 61.5%). Students' reflective writings in the experimental class often included statements such as "Preparation before class gave me more confidence in the lesson" and "I was really thinking during the discussion", and thus, the model had a positive effect on behaviour, cognition and emotion.

5. Strategies for Raising Classroom Participation

Based on the diagnosis of the current situation, mechanism analysis and teaching experiments, the following strategies have been proposed at the levels of behaviour, cognition and emotion.

5.1 Strengthening Behavioral Participation through Task Design

5.1.1 Advance the tasks to prepare all students in advance

Preview works in the SPOC platform can be posted and viewed, such as posting a case recommendation or taking a preview quiz; completion counts towards the coursework grade and serves as a form of behavioural participation before the lesson starts.

5.1.2 Structure group work to prevent free-riding

Discussion groups have assigned roles, such as chairperson, note-taker, spokesperson and challenger, rotate these roles among the members, and each person is responsible for their own role; after the group presents, randomly selected members are asked questions to keep the whole group interested.

5.1.3 Use classroom interaction tools to expand the scope of participation

Random calling, on-screen comments, timed polls and quick-answer quizzes in tools such as Rain Classroom and Xuexitong can be used to distribute the opportunity for students to answer and make classroom responses more timely and inclusive.

5.1.4 Incorporate behavioural participation into process evaluation

A classroom performance assessment of speaking, discussion and presentation serves as a motivation for students to actively participate.

5.2 Deepening Cognitive Participation through Question Chains and Demanding Tasks

5.2.1 Design question chains to bring knowledge to life

A series of questions can be used to lead students to deepen their understanding of the content in

 Copyright @ STEMM Institute Press

increasing order, starting with "What is it?", then "Why?", "How?", and finally "What if the conditions were different?".

5.2.2 Give case teaching and situation simulation equal weight

Management courses can use real-life cases and simulations that require students to complete the entire cognitive cycle of diagnosis, analysis, decision-making and justification instead of filling in a template, and follow-up questions such as "what is your evidence?" and "can you think of a counterexample?" can promote critical thinking.

5.2.3 Use writing to extend cognitive participation

Reflective journals, decision memos and other written tasks require students to summarise, compare and evaluate what they have learned in their own words, thus transferring cognitive engagement from the classroom to after-class study.

5.2.4 Close the loop between pre-assessment and post-assessment

The pre-assessment identifies knowledge deficiencies, the post-assessment verifies the achievement of goals, and frequently occurring problems are addressed collectively in class to maintain the focus of cognitive engagement on genuine learning issues.

5.3 Reinforcing Emotional Participation through Situations and Feedback

5.3.1 Open the lesson with a situation to spark interest

Management situations close to students' lives and current events, decisions by well-known enterprises, campus entrepreneurship cases, etc., can give students a sense of immediacy to the management knowledge and arouse their emotions.

5.3.2 Promptly and positively inform the child of their success to boost self-confidence

Specific, timely and encouraging feedback on what students say and do well can help them develop a sense of self-efficacy in learning and achieving good results; students who participate little are given graduated tasks and encouragement so that they do not feel left out.

5.3.3 Build display platforms to enhance identification capabilities

Report sessions, case roadshows and class votes for the best proposal allowed students to experience the application of management knowledge in practice and turn external interest into internal motivation.

5.3.4 Embed values education to give participation more meaning

By incorporating social responsibility, a sense of national duty and professional ethics into the discussion of management problems, students can learn that management is not just about tools but also about serving society; thus, a higher level of emotional motivation is provided.

6. Reflections on Practice

The SPOC+BOPPPS blended model has achieved some results; however, there are also deficiencies in its application that need to be addressed. Firstly, there is an increased workload for teachers and the cost of operating the platform; building SPOC resources, writing pre- and post-assessment items, and organising process data all require considerable time and money, and building a shared resource base as a course team is one way to reduce this. The second is the differentiation of participation due to differences in self-directed learning ability. If the preparation before class is inadequate, students will have difficulty participating in class; students who are less self-disciplined in their studies need reminders, support and flexible task design, and thus cannot independently study online and keep up with the class. The third is the extent of platform data. Learning behaviour data can be used to improve teaching and provide individualised feedback, but data collection should be transparent and students' privacy protected; data-driven assessment should not replace pedagogical care. Finally, the durability and transferability of the effects have not been examined; although the short-term pre- and post-test results show improvement, it is unknown how long these gains will last or whether the model can be applied to other environments in the future. In addition, as only a single course has been studied in this paper, the scope is relatively narrow; therefore, it may not be suitable for other types of management courses, and the transferability of the results has not been tested.

7. Conclusion

Based on the New Retail Operation Management course as a case study, this paper has identified problems in classroom participation at the behavioural, cognitive and emotional levels, designed an SPOC+BOPPPS blended teaching model based on dual drivers and three-stage

Copyright @ STEMM Institute Press

integration, and explained the mechanism by which the model enhances participation: online preparation before class lowers the cognitive threshold, structured interaction in class fosters participation at all levels, and closed-loop incentives after class boost participation and strengthen motivation. Practice in the "decision-making" unit and the comparison of parallel classes provide a set of strategies, task design for behavioural participation, question chains and demanding tasks for cognitive participation, and situations and feedback for emotional participation. In the future, a larger sample will be taken, the time range extended, and other types of management courses will be added to test the applicability and effectiveness of the model more rigorously, thus providing stronger support for classroom reform in private undergraduate management education.

Acknowledgements

This work was supported by the 2025 University-level Teaching Quality and Teaching Reform Project of Guangdong University of Science and Technology (Higher Education Teaching Reform Project, Independent Category), Project No. GKZLGC2025165, and by the Doctoral Research Start-up Fund of Guangdong University of Science and Technology (Grant Nos. GKY-2023BSQD-27 and GKY-2023BSQD-04).

References

[1] Luo Qin. Research on Pathways to Enhance the Digital Literacy of Teachers in Higher Vocational Colleges in the Context of Artificial Intelligence. Knowledge Economy, 2026, (30):181–184+188

[2] Hu Yanru. Dual-Track Integrated Teaching in the Smart Era: Origins, Concrete Manifestations, and Pathway Design. Modern Educational Sciences, 2024, (3):129–135

[3] FOX A. From MOOCs to SPOCs. Communications of the ACM, 2013, 56(12): 38-40.

[4] HE Bin, CAO Yang. SPOC: innovation of the teaching process based on MOOC. China Educational Technology, 2015(3): 22-29.

[5] XU Jie, LOU Zhen, WANG Junlan, et al. Practice and research on the Instructional Skills Workshop (ISW) program in Canada. China Adult Education, 2020(16): 61-64.

[6] FREDRICKS J A, BLUMENFELD P C, PARIS A H. School engagement: potential of the concept, state of the evidence. Review of Educational Research, 2004, 74(1): 59-109.

[7] KONG Qiping. Student participation in the process of mathematics teaching. Shanghai: East China Normal University Press, 2003.

[8] Lin Huiqing, Peng Gang, Huang Hefeng, et al. Promoting Teaching Reform in Higher Education Institutions and Independent Talent Cultivation Through Outstanding Teaching Research (Conversational Paper) . China Higher Education Research, 2026, (10):1-18

[9] LI Fengqing. Theoretical foundations and instructional design of blended teaching. Modern Educational Technology, 2016, 26(9): 18-24.

[10] FENG Fang, LAN Wensi, WU Wei. Norms, techniques and cases of ideological and political social science research in universities. Chengdu: Southwestern University of Finance and Economics Press, 2025.

 Copyright @ STEMM Institute Press