

Research on the Reform of Management Information System Curriculum Based on the Concept of OBE

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Abstract: Management Information System is the core course of Information Management and Information System, which is also a theoretical and practical course. However, with the change of social demand, the current teaching method of this course cannot meet the needs of cultivating students' practical innovation ability. Therefore, this paper focuses on the teaching situation of this course at this stage, and based on the core elements of student-centred, result-oriented and continuous improvement of result-oriented education (OBE), we have constructed a result-oriented, flexible and real-time feedback teaching mode, which breaks the time and space constraints of traditional teaching, and focuses on student participation and assessment of student learning outcomes. This model breaks the time and space constraints of traditional teaching, pays more attention to students' participation and the assessment of students' learning outcomes in teaching, and provides certain reference significance for the teaching reform of the course Management Information System.

1. Introduction

Outcome-Based Education, which first appeared in the basic education reforms in the United States and Australia, is an educational model based on learning outcomes and was first proposed by American scholar Spady W.D. in 1981 in his book "Outcome-Based Education: Controversies and Answers" based on the theories of criterion-referenced measurement, competency-based education, mastery learning and accountability for performance. Based on the theories of Criterion-Referenced Measurement, Competency-Based Education, Mastery Learning and Accountability, Spady W.D. first proposed OBE in his book Outcomes-Based Education: Controversies and Answers, where Spady defined OBE as "a clearly focused and organised system of education around experiences that ensure substantial success for students in their future lives"[1]. The OBE concept was quickly accepted and promoted and has now been fully adopted by many countries for professional accreditation of engineering education and has become the dominant philosophy of education reform in countries such as the US, UK and Canada.

The core of OBE (Outcome-Based Education) is a closed loop of teaching quality that is student-centred, outcome-oriented and aimed at continuous improvement [2]. Under the influence

of the OBE concept, the teaching mode of colleges and universities has gradually changed from "teacher-centred" to "student-centred", encouraging students to learn and explore independently, with teachers playing the role of guides and counsellors, and paying more attention to students' learning outcomes and the cultivation of practical application skills. The teacher plays a guiding and counselling role, and pays more attention to the students' learning results and the cultivation of practical application skills [3-5]. In practice, OBE is an educational model that focuses on educational outcomes.

As shown in Figure 1, the main content of the Management Information Systems course includes planning, analysis, design, development, operation and maintenance of information systems, etc. Therefore, the teaching objective of this course is to help students master the basic knowledge of management information systems, have the ability to use abstract thinking and logical thinking to analyse and solve problems, and form the initial ability to use computer language to develop systems. The traditional teaching mode is mainly based on teachers' lectures and students' understanding, which pays more attention to cultivating students' summarising and synthesising ability and learning ability. However, the current changes in social demands make it necessary for students to have more practical and innovative thinking. The OBE concept focuses on cultivating students' learning effect and practical application ability, so this paper puts forward some ideas based on the OBE concept for the teaching of "Management Information System" course to improve the teaching effect.

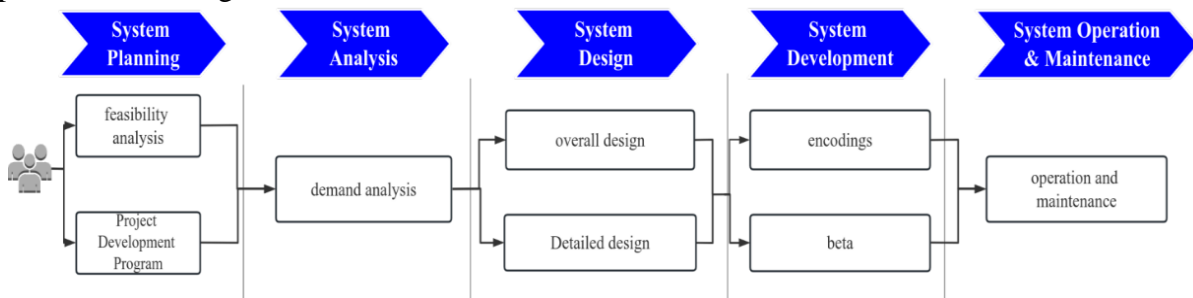


Figure 1: Management Information System development process

2. Status of Management Information Systems Courses

2.1 Pupils are not Motivated to Learn and Have Poor Study Skills

The main content of the MIS course includes the principles and methods of MIS analysis, design, implementation, operation and maintenance, which is highly specialised and requires learners to have certain understanding and theoretical knowledge. And the practical operation requires learners to have certain English and computer operation skills. When the students are weak in the basic link and do not have the corresponding ability, most of them think that only the computer and other majors with the need to develop systems need to learn the course "Management Information System", and their own majors are not closely related to this course, so the students are not interested in learning, which is not conducive to improving the effectiveness of the course teaching.

In the past teaching process on the information management and information systems students' learning habits of a sample survey, the results of the survey as shown in Figure 2, only 21% of students will often pre-study, 22% of students will often review, 21% of students in the classroom activity is relatively high, the majority of students have not established a good pre-study before class and review after class habits, participation in classroom activities and solving the issue of initiative is not high enough. As we all know that the teaching process is an interactive process between the classroom and the students, if the students' active participation in the classroom is not

enough, it will be difficult to ensure a good classroom atmosphere, and the students' learning effect will be greatly reduced.

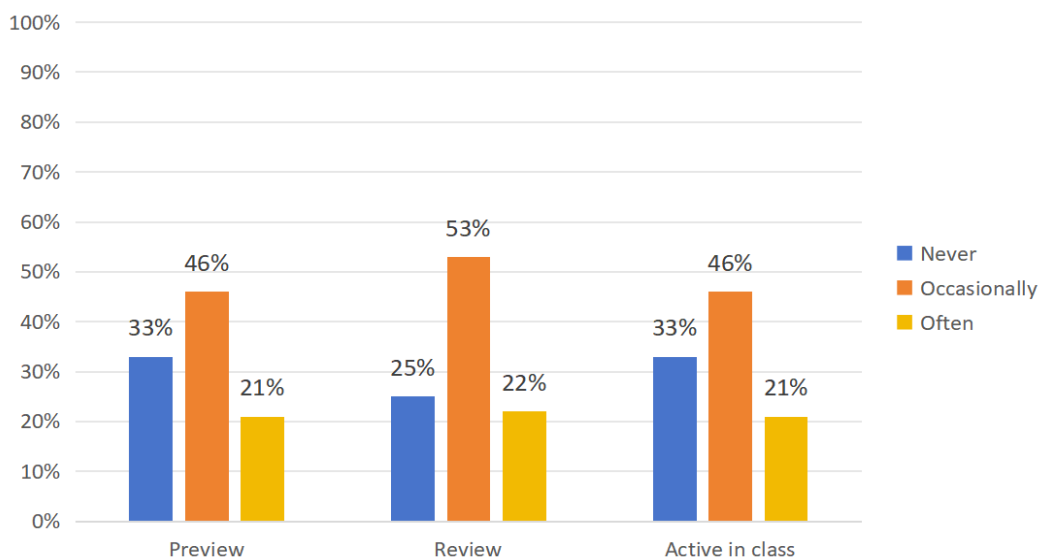


Figure 2: Students' study habits survey

2.2 The Teaching Model Is Rather Homogeneous

Management Information System is a practical course, and the development and progress of technology will also affect the change of its knowledge content, so students must have the ability to skilfully use the basic knowledge and the ability to innovate with the times [6-7]. However, the traditional teaching mode is relatively single, the application of digital resources and information technology means is relatively small, the teacher's teaching process is mainly based on theoretical narratives, the practical part is relatively small and not very focused, the students' classroom activity and participation is relatively low, so it is difficult for students to practice and consolidate their knowledge in a timely manner in the course of teaching [8-9].

In addition, there is a lack of effective communication channels between teachers and students, the interaction time between teachers and students is more limited to the classroom, and there is less mutual understanding and communication, so it is difficult for teachers to make a comprehensive assessment of the overall learning situation of students, and students don't fully understand the concept of the teacher's teaching design, and they can't keep up with the teacher's teaching tempo, and the cooperation between students and teachers is relatively low, which leads to a significant reduction in the effectiveness of teaching [10-11].

2.3 Less Teaching Software, High Maintenance Costs, Less Choice of Teaching Materials

MIS is a course that combines theory and practice, and the practical part of the course has a narrow selection of teaching materials due to the diversity of MIS software. In addition, most of the mainstream MIS software on the market is professional software for enterprises, not educational software, which focuses more on the needs and management functions of enterprises than on the teaching functions and needs, resulting in a lack of teaching functions and high maintenance costs.

MIS is a highly specialised and practical interdisciplinary subject, which is also difficult for liberal arts students to learn. And some textbooks pay more attention to the theoretical knowledge of the explanation, adding a more difficult technical application of part of the knowledge, such as E-R diagrams, decision trees and other abstract knowledge, which is not conducive to improving

students' motivation to learn.

2.4 Single and Imperfect Course Assessment and Evaluation System

The traditional evaluation method tends to focus on the final theoretical examination, which has two disadvantages [12]: (1) Management information system is a practical course, purely theoretical knowledge of the examination cannot fully reflect the students' mastery of the course and the teaching objectives, and it is also difficult to evaluate the students' application of knowledge. (2) Assessment is only a way of testing students' learning outcomes, and the accumulation and integration of knowledge is a long-term process. If the assessment is carried out only at the end of the semester, and the control of the whole learning process is relatively small, it can't improve the students' ability and quality in a comprehensive and holistic way.

3. Exploring the Reform of MIS Curriculum Based on the Concept of OBE

As shown in Figure 3, this paper constructs a student-centred and skill-oriented teaching model based on the viewpoint of the OBE concept, which focuses on cultivating students' independent innovation ability and achieving the teaching goal of helping students form the ability of information management and application. The teaching model divides the course teaching process into three stages, including pre-course preparation, in-class lectures and practical demonstrations, post-course consolidation, and assessment and evaluation of the three stages, from the simple understanding of the knowledge points, integration, and then skilled use of the whole process of power, to enhance students' enthusiasm for learning, and enhance the teacher's role in supervision and guidance.

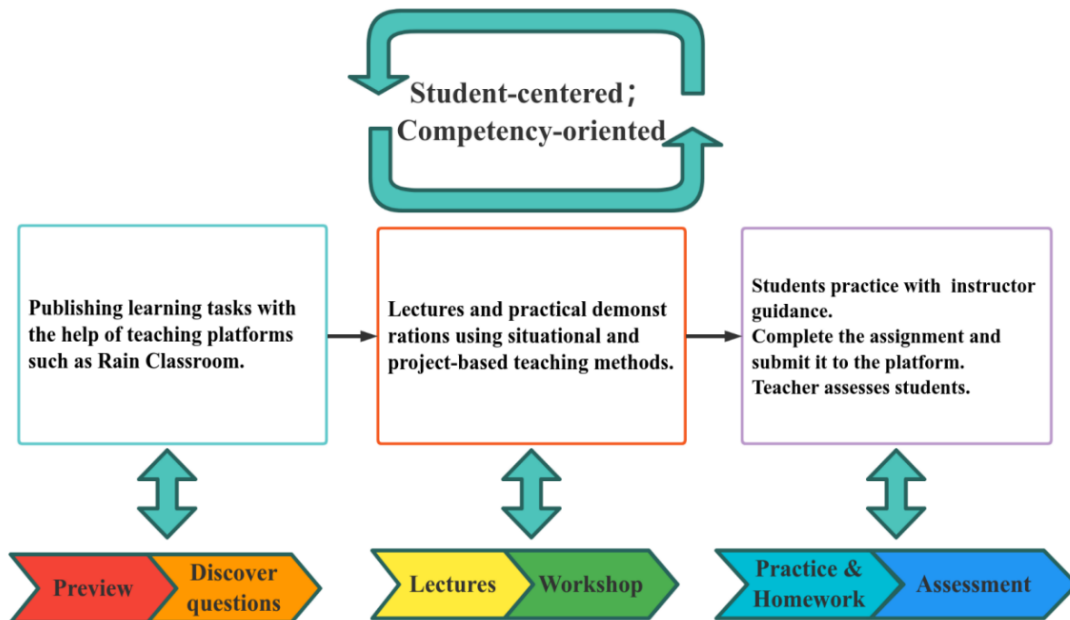


Figure 3: Flow of the teaching model based on the OBE philosophy

3.1 Pre-Course Preparation

This stage mainly adopts the project teaching method, with the project as the main line, the teacher as the guide, the student as the main body, with the help of digital resource machine information technology means, to enhance the fun of learning, and guide students to actively

participate in the course learning process.

First of all, teachers can be based on the requirements of the curriculum, in the rain classroom, catechism and other teaching platforms issued learning tasks, including teaching learning resources knowledge learning, problem solving and other ways and limit the completion time; students should take the initiative to view the resources of the digital platform in a timely manner, on the basis of which to summarise and generalise the relevant knowledge, to find out the problems in the process of learning and record them in a timely manner, so as to solve and consolidate the improvement in the later stage.

Second, teachers can design relevant cases according to the knowledge points and teaching objectives of each chapter as an introduction to increase students' interest in learning. For example, in the information system analysis part of the knowledge points, can be combined with life examples, so that students analyse what the development needs of the student information management system, triggering students to think about the knowledge of learning, as a way to stimulate students to explore the principles of knowledge and technology independently.

In addition, the teacher guides the students to use the digital platform or network communication platform to give feedback on the learning situation, including difficult questions, the degree of mastery of key knowledge and so on. At the same time, the teacher analyses and collates the feedback to facilitate the design of teaching links in the class.

3.2 In-Class Lectures and Hands-On Demonstrations

This stage is the most critical part of the teaching process, mainly using theoretical and practical integration of teaching methods, the use of situational, project task-based teaching, through the operation of the demonstration to solve the knowledge of the class, as well as teaching the important and difficult points.

Firstly, the teacher analyses the cases and scenarios in the pre-course session to stimulate students' thinking about the cases, which in turn leads to the knowledge points of the course, so that students can combine theory with practice and fully understand the knowledge points.

Second, the exploration of extended problems can enhance students' ability to answer questions and innovate. Teachers can set some extended problem projects and guide students to explore and solve them in groups, so that students can master the application of current knowledge and come up with ideas or insights according to real needs.

In addition, teachers can operate the demonstration of some knowledge points that require strong practicality, remind students of the problems they need to pay attention to during the demonstration process, help students clarify the direction of innovation that can be explored at present, and allow students to think independently about the path of innovation and exercise students' innovative thinking.

3.3 Post-Course Consolidation and Assessment and Evaluation Phase

The post-course consolidation method at this stage mainly adopts the task-driven teaching method and the independent inquiry method to help students consolidate what they have learned; the assessment and evaluation is the quantification of students' learning effect, and through the comprehensive assessment to understand students' mastery of knowledge points, the teacher can reflect and summarise the experience and shortcomings in the teaching process, and optimise the teaching design scheme.

Firstly, under the guidance of the teacher, students carry out practical operations and task extensions, and complete and submit homework after the course. On the one hand it can consolidate the knowledge points learnt and on the other hand it can help teachers to better analyse the learning

situation and understand the students' knowledge point mastery.

Second, the evaluation methods are diversified, and a comprehensive evaluation model combining various evaluation means, such as process evaluation, performance-based evaluation and result-based evaluation, is adopted to encourage students to maintain a high level of enthusiasm and motivation for learning all the time, and to actively explore and think in the stages of pre-class study, in-class study and post-class revision, so as to achieve a satisfactory learning effect.

4. Conclusion

The Management Information System curriculum can help students understand the application of new generation information technology in management, such as big data, and master the management of management information system and the process of information system construction. The OBE concept is a kind of construction concept of the curriculum system, which is result-oriented, student-oriented, and adopts the reverse thinking way.

This paper analyses the existing problems in the teaching process of the current management information system course, which are mainly due to students' lack of awareness, low motivation to learn, a single teaching mode, a single assessment method, and so on. On this basis, it puts forward the idea of reforming the management information system course, which mainly divides the teaching process into three stages: pre-study before class, lecture and practical demonstration during class, consolidation and assessment after class, and integrates the OBE teaching concept into each stage, and builds an innovative teaching mode by focusing on students and taking ability cultivation as the guide. By establishing rich practical links, students can apply theoretical knowledge in practice and make use of what they have learned; by comprehensively using online and offline teaching resources and carrying out blended teaching, we can provide students with rich teaching content and enhance their enthusiasm and activity in class; and by adopting a comprehensive evaluation mode that combines various evaluation means, such as process-type evaluation, performance-type evaluation and result-type evaluation. Through the above concept, on the one hand, students' learning enthusiasm and practical ability have been improved, and on the other hand, teachers' teaching level and teaching quality have also been improved in the process of teaching innovation.

The introduction of the OBE concept into course teaching is a major innovation in the teaching mode, especially for courses such as Management Information System and other practical courses, it is more important to pay attention to the integration of the OBE concept in the teaching process, so teachers and students need to work together in order to produce good classroom results. Of course, in order to achieve efficient collaboration, it is also necessary to continuously improve and upgrade the teaching system to meet the needs of the development of the course teaching [13].

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References

[1] Spady W. G. *Outcome-based education: critical issues and answers*. Arlington: American Association of School Administrators, 1994.

- [2] Xugang Zhang. *Application of Design-Based Learning and Outcome-Based Education in Basic Industrial Engineering Teaching: A New Teaching Method*. *Sustainability*, 2021, (3): 185-198.
- [3] Ugochukwu Chinonso Okolie, Sunday Mlanga, David Oluseyi Oyerinde. *Collaborative Learning and Student Engagement in Practical Skills Acquisition*. *Innovations in Education and Teaching International*, 2022(6): 669-678.
- [4] Martina Jordaan, Nita Mennega. *Community Partners' Experiences of Higher Education Service learning in a Community Engagement Module*. *Journal of Applied Research in Higher Education*, 2022(1): 394-408.
- [5] Rong Hu, Jingwen Hu. *Construction and Analysis of College Students' Entrepreneurship Guidance Model from the Perspective of Ideological and Political Education under Big Data*. *Mobile Information Systems*, 2022(2): 1-11.
- [6] Ciardiello, Angelo V. *Student questioning and multidimensional literacy in the 21st century*. *The Educational Forum*, 2000, 64(3): 113-115.
- [7] Pomper R, & Saffran J. R. *Familiar object salience affects novel word learning*. *Child Development*, 2018(2): 1-17.
- [8] Treagust D F, Chittleborough G, Mamiala T L. *Students' understanding of the role of scientific models in learning science*. *International Journal of Science Education*, 2022, 24(4): 357-368.
- [9] Liu Qigang. *Exploration of chain practice teaching mode in information management and information system*. *Experimental Technology and Management*, 2021, 38(01): 159-162.
- [10] Molloy E, Boud D, & Henderson M. *Developing a learning-centred framework for feedback literacy*. *Assessment & Evaluation in Higher Education*, 2020, 45(4): 527-540.
- [11] Kulgemeyer C. *Towards a framework for effective instructional explanations in science teaching*. *Studies in Science Education*, 2018(54): 109-139.
- [12] Solano Jhiamluka, Zuniga Gutierrez Melba. *Barriers and Solutions to Successful Problem-Based Learning Delivery in Developing Countries - A Literature Review*. *Cureus*, 2023, 8(15): 183-197.
- [13] Jinfeng Yang, Yuxiang Hou, Jun Nie, Wen Wang. *Mixed teaching reform of computer courses under OBE engineering education concept--Take introduction to database system as an example*. *Curriculum and Teaching Methodology*, 2022, 5(13): 1-5.