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Application of Learning Pass Information Technology Platform in Blended Teaching Module on Integrated Moral-art Education

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Abstract:
The in-depth integration of modern information technology with contemporary education and teaching is a major development strategy for China's education and a trend in the development of world education. This study takes Learning Pass information technology platform as the teaching platform and introduces blended teaching into the classroom teaching of Chinese moral education course. Then the construction of resources and the design of blended teaching process are carried out to explore the effect of blended teaching based on Learning Pass information technology platform. Through specific teaching practice, the problems in the design and application of blended teaching can be improved to enhance the effect of moral education teaching. This study adopts a quantitative research approach to collect and analyse receipts. Questionnaires were distributed to learners and interviews were conducted to obtain more accurate data. It was found that the blended teaching module on integrated moral-art education implemented on the basis of Learning Pass information technology platform was significantly better than the traditional classroom teaching. The blended teaching approach with the help of information technology not only enhances students' independent learning ability, but also stimulates students' interest in learning and enables them to master the knowledge of the course more comprehensively. Teachers can better grasp the learning status of students through the Learning Pass information technology platform and provide personalized services to students.

Keywords: information technology, blended teaching module, learning pass platform, integrated moral-art education, moral education, art education.

INTRODUCTION

In the 21st century, the rapid development of information technology is profoundly changing various aspects of human society, and the field of higher education is also deeply influenced [1, 2].Educational informatization is an important means to improve the quality of education and achieve educational equity, which is attracting widespread attention from countries around theworld[3].Major countries are building educational informatization and digital infrastructure, vigorously developing information technology and digital educational resources, enhancing the educational informatization and digital capabilities of teachers, students, and school administrators, and promoting the digital transformation of the education sector [4].In 2020, UNESCO and the International Association of Universities launched the "Digital Transformation of Education Empowering Schools" initiative, advocating for global universities to undergo digital transformation. Economies such as the United States and the European Union have also successively launched plans and measures for the digital transformation of higher education [5-6]. Universities around the world are actively exploring and formulating information technology development strategies to achieve innovative development. For example, Stanford University has proposed the "Open Environment Education 2025" campaign Slightly, Minerva University has implemented an O2O style educational system, while Singularity University adopts a model of not awarding degrees or offering credit courses [7, 8].

With the advent of the information age, more and more computer information technology is being applied to the field of education and teaching [9].The Chinese Government has long recognised the important role of information technology in the development of education, and the Modern Distance Education Project was set up as part of the Plan of Action for the Revitalisation of Education for the 21st Century, which was launched at the end of the last century [10].Since entering the new century, the Chinese Government has further deepened its understanding of information technology, and the Outline of the National Medium- and Long-Term Plan for Educational Reform and Development (2010-2020) stresses that "information technology has had a revolutionary impact on the development of education, and it must be given high priority"; in 2010, China formally released the Outline of the National Medium- and Long-Term Plan for Educational Reform and Development (2010-2020). Subsequently, educational informatization was comprehensively elevated to a national strategy, and the educational action plan and roadmap were clarified. In 2021, the Ministry of Education issued the Ten-Year Development Plan for Education Informatisation (2021-2030), stressing the need to make greater efforts to promote the in-depth fusion of information technology and education, which is a necessary way to achieve the development goal of modernising education.

As Chinese colleges are vigorously promoting the construction of digital campuses, blended teaching is widely used in the teaching field. Especially affected by the previous new crown epidemic, various universities are vigorously promoting and practicing blended teaching approach as a development and extension for the traditional classroom. They combine computer network information technology with traditional teaching to break the time and space constraints of teaching and enhance students' learning initiative. For example, the widely-used Learning Express information technology platform in various colleges and universities not only breaks through the limitations of traditional teaching, but also achieves differentiated teaching and improves the classroom teaching effect.

With the rapid development of information technology, especially the rise of big data, cloud computing, artificial intelligence and other new technologies, the traditional mode of education and teaching in colleges is facing great challenges and new reform opportunities. However, many colleges refer to information technology only at the tool level and do not integrate it in depth. Especially when it comes to integrating specific courses with the Learning Pass information technology platform, the level is uneven and in urgent need of change. This study utilized a mixed research method, both quantitative in the form of questionnaires and qualitative in the form of interviews. Researchers collected a large amount of real and effective data through questionnaire surveys and interviews. It was found that the blended teaching module on integrated moral-art education implemented on based Learning Pass information technology platform was significantly better than the traditional classroom teaching. The deep integration of information technology and higher education can not only break through the temporal and spatial limitations of traditional teaching models, but also provide students with comprehensive and personalized learning services. It can also fully stimulate students' interest in learning, make full use of modern learning tools to actively learn and explore learning, thereby achieving students' comprehensive development and improving the teaching effectiveness.

RESEARCH FOUNDATION

Information, matter and energy are the three elements that constitute the world, and information represents the epistemological meaning of things through the process of "acquisition, transmission, storage, processing, regeneration and application" [11, 12], that is, it is the result of people's perception, reflection and objectification of things. Information is the product created and generated by information technology, and it is also the direct embodiment of the value of information technology. Information technology is the "codification" of real things [13], with digital, virtual and network as the typical characteristics of the modern information technology computer technology, multimedia technology, the Internet and virtual reality technology into the field of education, profoundly changing the form of educational organisation and the existence of teaching. The entry of computer technology, multimedia technology, the Internet and virtual reality technology into the field of education has profoundly changed the forms of educational organisation and the state of teaching and learning, altering the way in which the spiritual world of the educated is affected by material or symbolic means, and replacing it with immaterial information, which carries the main connotations of educational teaching. The way in which information technology enters the field of education and exists in the field of education is obviously not a single form of independent existence in the age of audio-visual technology, but is presented in a combined manner and is committed to solving the contradictions of education and teaching as a whole by integrating it with education, and is therefore also known as systematic educational technology.Long ago educators began to explore ways to integrate information technology into curriculum education in order to improve teaching pedagogy and enhance teaching effectiveness. There are three main forms of integration between them.

Computer-assisted Instruction

As education crosses over from the age of appliances to the age of electronic information, audio-visual teaching technology plays an important role in carrying on the tradition. Converting the physical content of teaching from textual symbols into electronic signals required by audiovisual technology has greatly enriched the form of teaching and strengthened the power of presentation, but teachers have to add extra labour to convert the information, the burden of students' confidence in accepting it increases, and a large increase in the storage of information is a thorny issue. Students' favour is due to the fact that they can get instant feedback on their answers, choose their own learning topics, set their own pace of learning, and use their hands and brains to stimulate the development of their independent learning abilities. Teaching machines as an individualised learning method, by simulating the human learning process and directing the learning towards the final goal, will push the behaviourist "reinforcement" theory of learning into an actionable development track. The teaching methods embedded in them have become very popular and effective in various school courses, the military, and business, and the programmed instruction movement, characterised by "small steps, positive responses, timely feedback, self-paced learning, and a low error rate", has taken the world by storm [14, 15].

Integration of Multimedia Technology in Education

With the influx of information into the field of teaching, learners of information from the quantity of access to the quality of resource requirements, the need to meet the learning needs of non-linear, comprehensive, can stimulate a variety of sensory media resources [16]. This makes the use of computer storage and preliminary processing of information for in-depth processing and multi-channel display, based on computer technology as a comprehensive treatment of text, sound, image multimedia technology came into being. With the development of artificial intelligence technology, the gradual emergence of intelligent teaching system ITS, student model, teaching model and expert model effective integration. Analysing students' cognitive structures and learning styles, examining teaching methods, diagnosing the effectiveness of education and teaching, and determining the best Teaching strategies that give full play to the integration, interactivity, diversity, timeliness and scalability of multimedia technology Characteristics. In a multimedia teaching environment, complex teaching information is presented in a vivid and imaginative way, prompting students to Learners' multiple senses are involved in multi-channel information interaction. [17] It enhances the autonomous learning experience, not only reduces the cognitive load of the learners, but also enhances the cognitive depth, and the pace of teaching is easy to control, easy to create a vivid, intuitive, and graphic learning atmosphere, enriches the dissemination of the classroom teaching information and the presentation of the strength of the classroom teaching information, and empowers the learners with personalised, autonomous interactive learning scenarios to realise their understanding of the educational environment, the content of the education, and the effect of learning. Information technology controls.

Integration of Internet Technology into Education

Computer Internet technology developed on the basis of computers, communication equipment and application software, the actual Data storage, processing and transmission, as well as equipment interconnection, data exchange and sharing, and through high-speed network. The Internet enables timely human-computer interactions, forming a "global village" that transcends regional, racial, and cultural boundaries [18]. Universities share information with each other, or research institutes connect with universities to work on scientific research projects [19]. Universities are interconnecting to share information, or research institutes are interconnecting with universities to research scientific research projects, and young people coming out of the traditional "ivory tower" are bringing this management and communication method to various fields of society, thus promoting the development and application of information technology [20]. Network information technology effectively solve educational information dissemination restrictions, break through the language barrier, across the time and space boundaries, closer to the distance between the learning object, is in the computer technology to protect the information storage, multimedia technology to achieve the information processing and control of the teaching information will be effectively delivered to the learning object of the success of the practice. Moreover, it is a free, equal and relatively low-cost delivery practice. It not only breaks the original school and teacher monopoly of knowledge access, but also meets the desire of learners to learn "all the time, everywhere", and greatly promotes the fairness of education. It also makes the benefits of education more accessible to more people.

METHODOLOGY

With the arrival of the information age, more and more information technology and teaching equipment are beginning to be applied and promoted in the Open University. Blended teaching cannot be carried out without the support of online teaching platform. Blended teaching needs to integrate the traditional classroom and online classroom, and in the process of integration, a certain medium is needed, which is broadly called the intelligent teaching platform. At present, MOOC, Learning Pass information technology platform, UMU, Blue Ink Cloud Classroom, Rain Classroom and other platforms are widely used in education and teaching because of their unique functional advantages. In the post-epidemic period, online teaching technology continues to grow tremendously, many frontline teachers have tried to adopt the Learning Pass platform for teaching in their teaching practice. Currently, the most used platforms in Chinese universities are the Learning Pass platform and the Rain Classroom platform. The researcher conducted a comparative analysis of these two most used online teaching platforms. Through the comparative analysis, the researcher found that the Learning Pass information technology platform has more complete functions, especially it has more advantages in providing teaching effects.

Research Process

In this study, the researcher adopts the ADDIE model as the model for the study. The ADDIE model is a teaching model widely used by many educational designers and training programmers to develop education and training programmes. It appeared in 1975 at the University of Florida. The five steps as follows: Analysis, Design, Development, Implementation, and Evaluation (see Figure 1). The ADDIE model, represents a series of core steps in the instructional system design process and has the

advantage of providing a set of systematic processes for designing and developing programs in a systematic and focused manner, which ensures efficient instructional design.In recent years, many scholars have turned their attention to the ADDIE model for curriculum design.They verified that the ADDIE model is more effective than traditional teaching methods through experimental comparisons and evaluation feedback.This study will analyse the data through questionnaires, using qualitative methods of analysis.

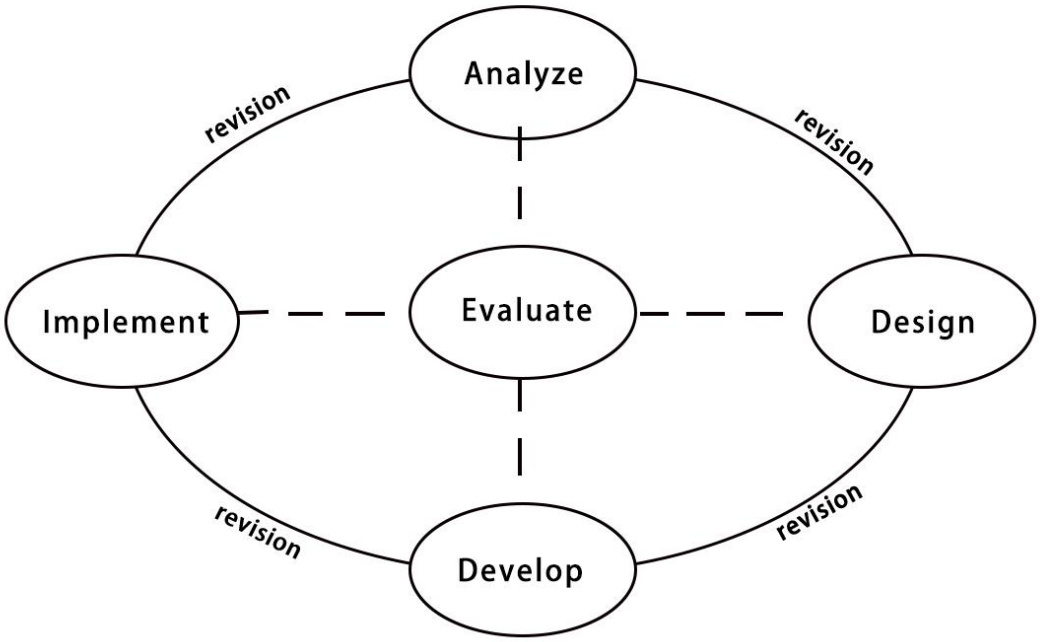

Figure 1. The ADDIE model

Sourse: Sameer Mosa Alnajdi. 2018

Data Collection Technique

In this study, the researcher will distribute the questionnaires through the Learning Pass platform. The researcher will create a learning effectiveness assessment questionnaire and then, distribute it to the course learners through the Learning Pass platform. Pre- and post-tests of the course will be conducted by the same group of learners. The data will be analysed through spss software and Nvivo11 oftware.

Reliability and Validity

Before the questionnaires and interviews are administered, the researcher will test their reliability and validity. Only when their reliability and validity meet the implementation requirements, the researcher will proceed to the next step. In this way, more authentic and valid data can be obtained.

The main method of reliability measurement is the item consistency method (Cronbach's coefficient). The reliability analyses in this paper. The item-day consistency method was used. The Alpha coefficient value of the questionnaire as a whole was 0.967; the Alpha coefficient values of the five dimensions in the teaching effectiveness variable were all between 0.7 and 0.9; as a whole, the reliability was good, with a high degree of internal stability and consistency, which allowed for further analysis of the data.

APPLICATIONS

This study takes college students as the research object, and understanding students' learning needs and learner characteristics is the key to instructional design. Among them, learner characteristics include knowledge base, ability base, and affective attitude. The application process of integrated moral-art education blended instructional design based on Learning Pass information technology platform is as follows:

Learner Needs Analysis

The learner needs analysis phase is the first part of the ADDIE model and is the key to the success of the subsequent phases. The analysis phase serves as the foundation of the entire instructional design process and provides important supportive information for decision-making in the design phase.

Learning needs are created due to the gap between the learner's current level and the desired level, and the learning needs of the learner are analysed in order to shorten the gap between the two in order to get the real feedback from the learner. The researcher can use surveys, interviews and other forms to know the learning needs so as to analyse them. The learner is the ultimate recipient of the knowledge of the course, and its variability will be a key factor in determining the success of the instructional design. Instructional design must take learners' characteristics as an important reference factor. In this study, the researcher will analyse three aspects of learners' knowledge base, knowledge base, ability base and de-emotional attitude. Firstly, in terms of knowledge base, many students are challenging to learn as they have just entered the university and are still unfamiliar with university courses. In particular, most of the students are not majoring in art and have weak knowledge of art fundamentals, which makes it difficult for them to learn the blended teaching module on integrated moral-art education. Secondly, in terms of ability, students have active thinking, strong self-consciousness, curiosity, certain hands-on ability and independent thinking ability. However, they are afraid and resistant to the more theoretical moral education courses, which leads to a decline in the teaching effect of the courses. Finally, in terms of emotional attitude foundation, most college students have a strong interest in the blended teaching module on integrated moral-art education course. Students are willing to try the blended teaching, actively participate in teaching activities, and positively interact with teachers.

The Design and Development of the Blended Teaching Module on Integrated Moral-art Education

Based on blended teaching content and teaching resource design, this module focuses on the design and development of the blended teaching module on integrated moral-art education. In this study, the pre-course stage is mainly designed with pre-course guide sheets, micro-videos, pre-reading test questions and course discussion topics. In the mid-lesson phase, the courseware, key knowledge guides and case practice materials were designed. In the post-course stage, the main design of the knowledge guide, post-course exercises, and extension exercises are designed to help students sort out the classroom knowledge and consolidate what they have learnt.

Pre-lesson guidance sheets

The researcher wanted to make the students clearly understand the learning tasks of the online pre-class pre-study so that they could be easily guided to complete the pre-study in a timely manner. The researcher mainly used Word software for editing, and colour-coded the content that needed to be focused on for pre-learning, so that it was convenient for students to focus on the learning. At the same time, the researcher added some interesting icons to facilitate learners to better understand the content and at the same time increase the fun of reading.

Micro-video

The researcher used computer editing software to create course micro-videos to analyse the key points of the course knowledge, which is convenient for students to learn and watch and better understand the knowledge. As a popular way of presenting teaching resources, the length of the micro-video is generally limited to 2-8 minutes. There are two types of videos used in this study, one is made by teachers using the video production function of the Learning Channel platform. The other is to search for the best teaching videos on the Internet and select suitable video resources to produce the videos through screen recording software and Pr editing software.

Courseware

The teaching courseware for this study was created using PowerPoint as well as Adobe Photoshop 2020 tools to assist in the creation of the courseware. The courseware consists of text, pictures, videos and other elements, focusing on simplicity and focus. Such courseware enables students to understand the knowledge taught in the classroom more easily.

Question bank

The researcher conducted the topic development at this time according to the teaching objectives. The design of the types of questions includes multiple choice, short answer, judgement and open questions. The questions are mainly multiple choice and judgement questions, supplemented by fill-in-the-blank and short answer questions. The researcher first edited and organised the questions with word software, and then uploaded them to the question bank of the Super Star Learning Channel platform.

Testing and Distribution of Teaching Resources

After completing the design and development of the teaching resources, the researcher conducted preview and playback tests on all the teaching resources, which showed that all the teaching resources were tested properly and could be uploaded to the platform for use. Teachers logged into the Learning Commons teaching platform to create courses and edit course resources, and completed the release of teaching and resources. The detailed operation procedure is as follows:

1.Teachers log in to the platform to create courses. Teachers log in to the Super Star Learning Link platform to create courses.

2.Students join the course via cell phone or computer client.

3.Teachers edit the content for each chapter.

4.Click Save to finish publishing the content.

Course Implementation

The implementation phase of the course is an important part of the success of the course. The soundness of the procedures for implementing the curriculum has a direct impact on the effectiveness of the course.This course was implemented using a blended teaching model combining online and offline. It has three main processes (see Figure 2), each of which is closely related and interacts with each other.

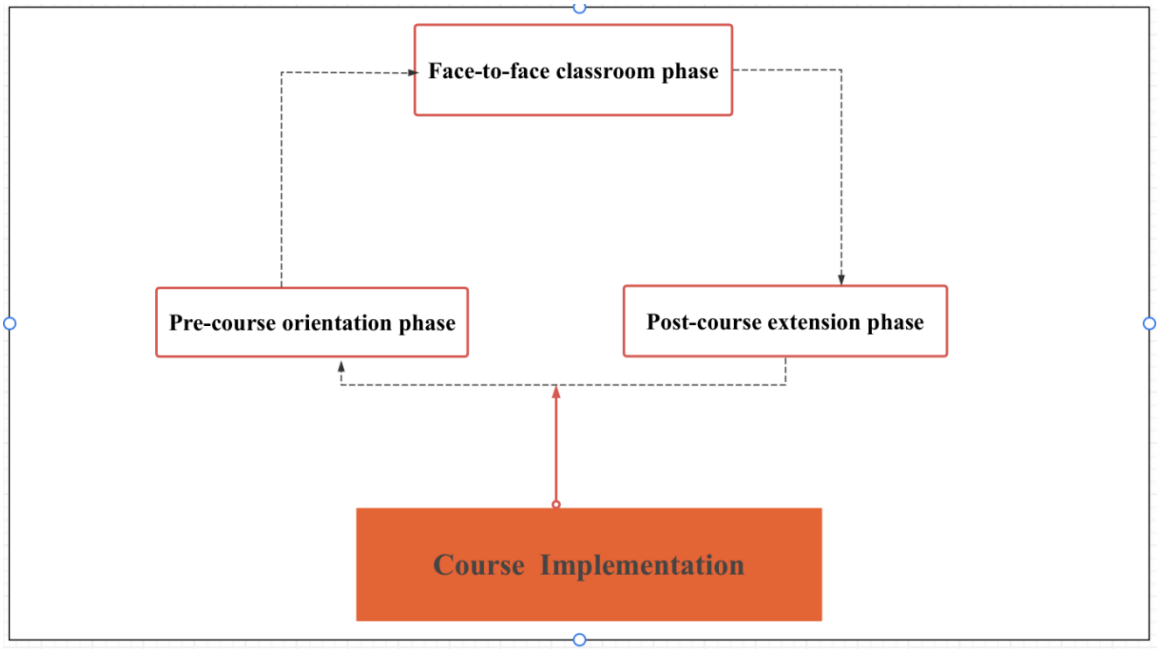

Figure 2. Course implementation process

Pre-course orientation phase

Firstly, the teacher releases teaching resources and learning tasks through the Learning Pass information technology platform, so that students can do advance study. This is the stage of students' independent learning, in which students can independently study videos, cases, courseware content, etc. After the completion of learning, students can also self-test through independent learning test questions to deepen their understanding of knowledge. Teachers can grasp the students' pre-study situation in real time through the data statistics and analysis function of Learning Pass information technology platform. Teachers can provide timely answers to students' problems. At this stage, teachers mainly play a leading role in guiding students to learn independently.

Face-to-face classroom phase

In the face-to-face classroom phase, offline classroom teaching is implemented. Based on the learning situation analysis of Learning Pass information technology platform pre-course preparation, the teacher has already grasped the problems encountered by students in the preparation stage. In the classroom teaching stage, the teacher will explain in detail the difficult knowledge encountered by most students. Teachers make students clear the practical tasks through lectures, and then carry out consolidation

exercises. The teacher can answer questions and provide personalised guidance at any time during the practical work. The face-to-face teaching process can effectively focus on solving the key learning difficulties.

Post-course extension phase

The post-course extension phase, which aims to enable students to consolidate what they have learnt in class. At the end of the lesson, students share and discuss their learning with each other through the Learning Pass information technology platform to further consolidate their understanding of the course. Students can extend their knowledge through self-assessment, mutual assessment and completion of homework after class. Teachers can check the completion of students' assignments through the background data of the Learning Pass information technology platform and conduct online after-class Q&A for students' after-class questions, so as to actively communicate with students and satisfy students' needs for differentiated teaching and learning.

Since each chapter of the course is closely linked to each other, each part of the teaching influences the next part of the course, eventually forming a closed loop. And some individual chapters need to be interspersed with practical tasks for performance evaluation to get the results of multiple evaluation. At the end of the whole phase of the course, the researcher will evaluate the effectiveness of the teaching in order to correct the deficiencies.

VALIDATION

The study was analysed by comparing the pre and post tests of the same group of students. Descriptive analysis of secondary indicators of teaching effectiveness using spss.28 revealed that the mean values of evaluation of teaching effectiveness ranged from 3.55-4.06. The results showed that the blended teaching was effective and most of the students recognised the blended teaching model. The specific table is as follows:(see Table 1, Table 2, Table 3)

Table 1. Sample questionnaire indicator system

Level 1 indicators	Secondary indicators
Student characteristics	Blended learning adaptations
	Network self-efficacy
Teachers' performance in the classroom	teacher attitude
	Interactive effects
	Level of response
Course Effectiveness	Degree of programme flexibility
	Course applicability
	Lively course content
Platform Ease of Use	easy use
	easy handling
	Easy interaction

Table 2. KMO and Bartlett test for teaching effectiveness indicators

Level 1 indicators	KMO	Bartlett
Student characteristics	0.8200	0.0000
Teachers' performance in the classroom	0.755	0.0000
Course Effectiveness	0.758	0.0000
Platform Ease of Use	0.856	0.0000

Table 3. Statistics on Teaching Effectiveness

Level 1 indicators	Secondary indicators	minimum value	maximum values	average value
Student characteristics	Blended learning adaptations	1	5	3.73
	Network self-efficacy	1	5	4.05
Teachers' performance in the classroom	teacher attitude	1	5	3.92
	Interactive effects	1	5	3.93
	Level of response	1	5	3.79
Course Effectiveness	Degree of programme flexibility	1	5	3.76
	Course applicability	23.79	5	3.88
	Lively course content	1	5	3.73
Platform Ease of Use	easy use	1	5	3.54
	easy handling	1	5	3.77
	Easy interaction	1	5	3.84

CONCLUSION

The blended teaching model based on information technology teaching platform is more and more widely used in higher education. In this study, starting from learners' learning needs and learners' characteristics, and after understanding students' needs, the blended teaching design is combined with Learning Pass information technology platform to evaluate the blended teaching module on integrated moral-art education was evaluated. Most of the teachers and students recognise the quality of blended teaching and believe that blended teaching can promote more self-directed learning among students and enhance their learning efficiency. Meanwhile, the blended teaching model can better meet the differentiated teaching needs of university students and increase teacher-student interaction. However, this study is limited to the Learning Pass information technology platform, which is a relatively single source of samples, resulting in limited applicability of the conclusions. In the future, more platforms can be included in the research paradigm to compare and analyse the differences between different platforms, so as to further enrich the existing research results.

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