Research on University Mathematics Teaching Management Based on Digital Teaching

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Abstract: The organic integration of modern information technology and university mathematics teaching has made mathematics teaching more efficient and convenient. This article focuses on the current situation of mathematics teaching in universities, mainly discussing how to achieve digitization from teaching resources, learning resources, and teaching management evaluation systems, in order to further improve the teaching effectiveness of university mathematics.
Keywords: digitization; College Mathematics; Teaching management.

In recent years, information technology has developed rapidly, deeply integrating into various aspects of society, life, education, culture, and promoting changes in social production. In the field of education, the construction of educational informatization, represented by digital campuses, is in full swing, achieving initial online teaching, online office work, online services, and online management. The pace of educational modernization and informatization is accelerating day by day. In the context of digital campuses, teaching management is more convenient, and the quality of relevant personnel has significantly improved, further enhancing the level of education management in universities, which has very important practical significance.

To achieve digitalization of teaching management in universities, the following aspects should be done well:

(1) Digitize the teaching resources of public mathematics and improve teaching efficiency

The teaching process of university mathematics needs to be digitized, which highlights digital learning resources and digital teaching models. Digital learning resources reflect the diversity of learning resource types, the networking of resource dissemination media, and the interactivity and sharing between learners and learning resources. The digital teaching mode has transformed from a single classroom teaching mode to a network exploration mode, learning community, cooperative learning mode, etc., with information technology as the main supporting tool. In addition, the teaching evaluation method has gradually transformed into a multi-level and multi perspective real-time evaluation method using network platforms as the main medium due to the intervention of information technology.

(2) Standardize the management of digital learning resources and improve the learning efficiency of public mathematics

Digital learning resources are shared multimedia materials designed based on learning needs, which can be digitized and run in a computer or network environment. According to their different presentation methods, they can be roughly divided into digital videos, digital audio, multimedia courseware, online learning management systems, virtual laboratories, etc. The management of digital learning resources for mathematics should focus on building a digital database based on the learning of mathematics by various science and engineering students, so that students can better and faster achieve the different types of learning resources required for learning goals. At the same time, technical maintenance should be carried out on the resources of different subjects to ensure their normal operation on the network platform. In addition, it is necessary to analyze and evaluate the effective utilization of digital resources, In order to upgrade and innovate the resources currently available and keep up with the times

(3) Digitize the teaching management mode of public mathematics and improve the learning effectiveness of public mathematics

The digital teaching mode of public mathematics is no different from the information-based teaching mode. Both are learner centered, learning mathematics in virtual reality or real scenario construction, and using technical tools to solve practical problems. In this mode, information technology is the most effective means of support. It not only serves as a technical tool to support learning activities, but also as a cognitive tool to help learners achieve learning goals. Therefore, the management role of public mathematics teaching management in digital teaching models is actually to manage the technical and cognitive tools in each type of teaching model. This includes the design and selection of information technology, how information technology can be

effectively utilized in various learning stages, the maintenance and upgrading of information technology, and performance evaluation of information technology utilization.

(4) Digitize the evaluation system of public mathematics to make the evaluation of public mathematics more comprehensive and objective

In the teaching process of public mathematics, the evaluation of university mathematics learning after the introduction of information technology in the digital learning environment is no longer about whether learners have achieved their learning goals, but rather how they have achieved them. For example, evaluating whether learners utilize information technology for meaningful learning of college mathematics, whether they adopt mathematical learning models such as collaborative learning and problem-solving, and whether their mathematical knowledge level has improved in a certain high-level thinking ability. Based on this perspective, the management of digital learning evaluation methods in public mathematics should focus on building an indicator system for the effective utilization of information technology, constructing evaluation metrics for meaningful learning behavior, designing teaching models or technical tools that are conducive to the improvement of high-level thinking abilities, etc., in order to make the evaluation of public mathematics more objective, comprehensive, and detailed.

In summary, digital campuses have laid the foundation for the construction of teaching informatization in universities and greatly promoted the development of teaching management informatization. In the context of modern education, universities should be adept at utilizing digital campus platforms for teaching management, achieving networked office and information based teaching management, and comprehensively improving the quality of teaching work. At the same time, it is necessary to strengthen the information literacy and skill training of the teaching staff, increase investment in information equipment purchase, establish a network teaching knowledge base, and create favorable conditions for the implementation of information-based teaching management work.

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