



Research on the Teaching Application of Applied Mathematics in Higher Vocational Colleges Based on the Internet Environment

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Abstract. There are many teaching courses in higher vocational colleges. Applied mathematics focuses on cultivating students' logical thinking ability and helping them improve their analytical ability. Students need to attach great importance to this. The speed of social development is accelerating, in the Internet environment, it is necessary to make full use of multimedia based on network technology and computer technology, so as to improve the quality of the teaching environment on the campus of vocational schools, the teaching methods can be updated, and the teaching quality can be guaranteed. The application of multimedia technology in applied mathematics teachers can also achieve online and offline mixing, and the online information teaching mode can also be adopted according to the needs to stimulate students' interest in learning, guide students to use the correct method to learn, so as to obtain good teaching results. This paper focuses on the teaching application strategy of applied mathematics in higher vocational college under the Internet environment.

Keywords: Internet environment · higher vocational school · applied mathematics · teaching strategy

1 Introduction

From the current teaching situation of applied mathematics courses in higher vocational colleges, There are still some shortcomings, It is mainly reflected in three aspects: First, All professional departments attach great importance to professional courses, But did not play the role of mathematics courses for the professional courses of service, This gives students an illusion about math courses, That is, mathematics is not of value for their own professional growth, Cause the students to ignore the learning of mathematical knowledge, This is very bad for his professional growth; Second part, Most students do not have a very good grasp of the basic knowledge of mathematics, Lack of logical thinking ability, Lead to the math performance is not very ideal, Feel very difficult when studying, The platoon psychology is serious in class; From the content of the current applied mathematics textbooks, In many undergraduate mathematics textbooks, As teachers teach, but less and less, To complete the teaching task, Using the teaching

mode of teachers 'lectures and students' lectures, To catch up with the schedule, No time to discuss it with the students, The main role of the students is not being played out. This teaching mode is obviously not in line with the current information environment, without the full use of the Internet technology, it is difficult to obtain a good teaching effect [1]. At present, information technology is developing very fast. Due to the popularization of Internet technology and the application of cloud big data technology, the educational revolution has been stimulated. In such an environment, many high-quality resources have been excavated, and new teaching methods and innovative methods are constantly adopted in teaching.

2 The Necessity of Scientific and Rational Application of Multimedia Technology in Applied Mathematics Teaching

- (1) Active classroom learning atmosphere The traditional mode is adopted in the applied mathematics teaching in higher vocational colleges, and teachers mainly rely on the teaching materials and teaching reference work. In the Internet era, the materials needed for teachers to prepare lessons will be more sufficient, which is very beneficial for teachers. In addition, when designing multimedia courseware, teachers need to make full use of a large number of teaching materials, extract valuable information into courseware, to stimulate the positive awareness of learning, interested in applied mathematics. Therefore, before making the applied mathematics courseware, teachers need to collect information on the Internet, design the courseware, arrange the content, and mobilize the mathematics classroom learning atmosphere, so that teachers can obtain good teaching results.

For example, when teachers explain the concept of limit, due to the abstract content, if it is difficult for students to teach in the traditional mode, they can hardly understand it. Teachers can make full use of multimedia technology and present the teaching content with animated short films, so that students can fully understand the basic concept of limit. In the process of explaining the concept of fixed integral, teachers can also make animated short films with the help of multimedia technology, visible subdivision surface trapezoid, and then restore operation, that is, the area of the surface trapezoid can be solved.

The original complex mathematical concept, the application of multimedia courseware teaching, can be simplified, and easy to understand, making the teaching more effective. Teachers teach in the form of animated short films, the classroom atmosphere is mobilized, the students' thinking ability is cultivated, the spatial imagination ability can be enhanced, and the students fully understand the classroom knowledge, so as to obtain a good mathematics teaching effect.

- (2) The application of information technology means is too single With the popularization of information technology and intelligent technology, teachers should adapt to the environment of The Times, update their teaching ideas, and keep pace with The Times in their teaching methods. It is obviously inappropriate in current mathematics teaching if traditional methods are still used. Not only the teaching level lags behind The Times, but also the teaching methods cannot stimulate students' interest in learning, and it is difficult to achieve good teaching results. In order to

better develop teaching, teachers not only need to master professional knowledge, but also need to use various skills flexibly. In teaching, the use of advanced teaching technology, continuous innovation of teaching methods, well adapted to the environment of the Internet era. At present, the teaching of applied mathematics is still more traditional, and students feel boring. Teachers lead the classroom, and students listen passively, resulting in a tense classroom environment.

3 Effective Strategy of Applied Mathematics Teaching Reform in Higher Vocational Colleges Under the Internet Environment

- (1) Teachers' applied mathematics teaching concepts should be updated Teachers 'teaching ideas play a guiding role in their behavior, so it will be reflected in the whole process of applied mathematics teaching, directly related to the teaching quality and students' learning effect. Therefore, the teaching concepts held by teachers should be abandoned in time and constantly updated, so that students, as the main body of the classroom, and teachers should make reasonable use of Internet technology in mathematics teaching. In the process of applied mathematics teaching, teachers should correctly guide students to establish Internet thinking, pay attention to cultivating students 'innovative thinking ability, can use mathematical thinking to think about problems, stimulate students' interest in learning mathematics knowledge, promote students to actively participate in learning, ensure the quality of learning, improve the level of classroom teaching [2]. While guiding the applied mathematics classroom teaching activities, teachers should also pay attention to the cultivation of students 'learning ability and learning quality, establish a good cooperative relationship with students, and effectively highlight the main body position of students, which is crucial to the development of students' ability.
- (2) Mathematics teachers should constantly improve their own information literacy In order to cultivate teachers' awareness of the Internet, it is necessary to organize teacher training regularly, or hold expert lectures with extracurricular practice, please apply mathematics teaching experts to the school to guide teachers. In addition, teachers should be encouraged to grow up independently and constantly improve the application of Internet technology in teaching. Only with good information literacy can teachers flexibly use information technology in classroom teaching and make the teaching more perfect through the operation of Internet technology. Mathematics teachers have high ability to apply Internet technology and improve information literacy. They can make applied mathematics multimedia courseware according to teaching needs, rationally use all kinds of information teaching software, and operate the teaching platform reasonably to fully understand the significance of flipped classroom.
- (3) The Internet teaching practice of applied mathematics has been continuously strengthened The application of information technology in applied mathematics teaching can promote students to acquire mathematical knowledge through various channels. For example, for the application of multimedia technology in teaching, teachers can use the way of making courseware to teach multimedia classroom to

students in class. If conditions permit, it is necessary to introduce rain class, combined with the use of various network platform, such as superstar learning link, etc., let the students feel the information teaching class is full of fun, mathematics knowledge is not complex they imagine, as long as master the correct method can learn, and have the ability of flexible use. Therefore, the application of Internet technology in mathematics teaching is very beneficial for their better learning. With the stimulation of students' interest in learning, under the guidance of teachers, students' thinking is more and more open, students' independent learning ability is enhanced, campus network resources and Internet resources are fully utilized, learning resources are collected, knowledge rules are sorted out, analyzed and mastered, and gradually their own knowledge results are formed. Through the implementation of information applied mathematics teaching practice, the Internet technology will be fully applied to the teaching process of applied mathematics, make mathematics knowledge visualization, video output, animation presentation, stimulate students' interest in learning.

4 The Application Practice of Internet Technology in the Applied Mathematics Course Teaching

(1) Apply Internet technology to teach "Analytical Geometry" In applied mathematics, analytic geometry is an important part. Before the application of multimedia technology before the teaching of "Analysing Geometry", teachers need to make courseware when preparing lessons, and the required materials are downloaded on the network. In the process of teaching, all the teaching content is presented through the application of multimedia hardware equipment, which makes the teaching knowledge intuitive and three-dimensional, and makes the key points of knowledge clear at a glance, so as to obtain a good teaching effect [3]. In the application of computer demonstration of mathematical knowledge, it is necessary to apply multimedia courseware, spatial three-dimensional graphics presented in front of students, making knowledge easier to understand, help students establish geometric thinking mode. In the process of applying the Internet in the teaching process of applied mathematics courses, we should also realize the important writing on the blackboard. Teachers use electronic whiteboard to combine handwriting and network technology, use this way, and deduce the theorem proof steps. In the process of applying this way of teaching, we can also use courseware animation, which can obtain a good teaching effect of geometry courses.

For example, in the process of teaching design, the application of geometric drawing board, for drawing elements can be found on the network, and can even download similar geometry repair, make for their required graphics, which can effectively guide students to understand the mathematics teaching material knowledge, at the same time students can also master the learning method. Students in higher vocational colleges can correctly understand the content expressed in the pictures, which can better learn knowledge and accept knowledge. Accurately understanding the meaning of graphic expression in textbooks is the way to train students in higher vocational colleges to acquire knowledge and improve their learning ability in [4].

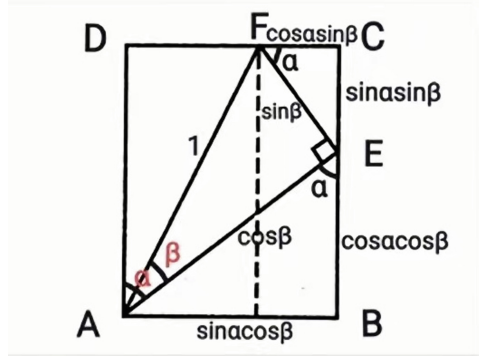


Fig. 1. The geometry of the $\cos (-) = \cos\alpha\cos\beta - \sin\alpha\sin\beta$

For example, in the applied mathematics of higher vocational colleges, the trigonometric function is the key teaching content. In the process of teaching, teachers can use the geometric drawing board to draw the relevant graphics, and students can watch the graphics to understand the connotation of mathematical knowledge, and can quickly understand the cosine formula of the two-corner difference: $\cos (-) = \cos\alpha\cos\beta - \sin\alpha\sin\beta$. Use the geometric drawing board drawing method to help students to understand correctly, and prove (Fig. 1: $\cos (-) = \cos\alpha\cos\beta - \sin\alpha\sin\beta$ geometry).

In this part of the explanation, the application of geometric drawing board can be used in the drawing method, so that the abstract mathematical knowledge intuitive, students can soon find the idea to solve mathematical problems.

(2) Apply the Internet teaching and mode to the Ordinary Differential Equation In the process of implementing the “Ordinary Differential Equation” course teaching for students in higher vocational colleges, the superstar learning platform can be fully used to guide students to use the Internet to implement online learning. An important aspect of applying Internet technology to apply mathematics teaching is that it can integrate relevant knowledge to help students expand their knowledge. For example, in the teaching of applied mathematics, in addition to the professional mathematics knowledge, we can also explain the relevant history of mathematics, so that students can understand the mathematical knowledge from the perspective of culture. Teachers apply this method to classroom teaching, in combination with online learning platforms, or use flipped classroom teaching [5] as needed. In the specific teaching can also be three patterns appropriately, not only to students in class, can communicate between teachers and students after class, can also through running superstar learning platform to watch the course video about mathematics knowledge, play the role of supplement after class, students can according to their own need to arrange the Internet learning time. Teachers adopt the combination of online and offline mode, ask questions about the teaching content, and play online videos to guide students to study by themselves. When students return to class, they should carry out group discussion and learning mode, which can improve the teaching quality [5].

Tag: Through the above research, it can be clear that teachers in higher vocational colleges apply the Internet to teach students, and transfer knowledge to students through the operation of the network, so that students can acquire a lot of knowledge, master learning methods and improve their learning ability. Teachers provide curriculum resources for students through teaching materials, tutorial books and various examination questions, which has formed a great impact on the traditional classroom teaching. Therefore, in the implementation of curriculum teaching reform in the reasonable implementation of Internet technology, in order to improve the teaching quality.

5 Conclusions

Through the above research, it can be clear that teachers in higher vocational colleges apply the Internet to teach students, and transfer knowledge to students through the operation of the network, so that students can acquire a lot of knowledge, master learning methods and improve their learning ability. Teachers provide curriculum resources for students through teaching materials, tutorial books and various.

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