

Improving the Effectiveness of Teaching and Training Through Information and Communications Technology

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Abstract: Information and communication technology (ICT) has emerged as an indispensable tool in the realm of global education. The swift advancement of ICT has presented both significant opportunities and challenges within the educational landscape. This paper aims to explore the effects of ICT on teaching and training, employing methods of observation and investigation. The results indicate that the utilization of information and communication technologies can enhance the effectiveness of educational practices. However, it is essential to regard information technology as a supplementary tool in teaching, while maintaining the pivotal roles of teachers and personal interaction. Overreliance on information technology should be avoided, as the key lies in the correct, reasonable, and effective integration of these technologies in the teaching process.

Keywords: Information and communication technology, Teaching and training, Global education.

1. Introduction

In the context of the development of the information society and the transition to the stage of informationization and digitization, the role and importance of identifying the nature, content and technical issues of the implementation of information tools in various fields of human life, his field of education is especially expanding.

The focus of educational science is to cultivate people with high morals and wisdom. In terms of its essence, content and purpose, it aims to form everyone's kind, moral and highly spiritual personality in order to actively solve human problems in the stage of modern information and digital development.

Therefore, everyone, experts, and especially social elites should have a high degree of grasp of the essence, substance, and activity characteristics of pedagogy. Pedagogy has formulated strategies and strategies for the interaction of different people.

With the definition of vocational and educational training content for students in technical universities, the issue of improving the level and effectiveness of such training through information and communication technologies is particularly important. The substantive and procedural components are accumulated in the means.

Determine the effective methods of using modern information and communication technologies in the professional and teaching training of technical university students, and develop the specific content, substantive and procedural content of these technologies is the most important scientific psychological and teaching task.

The purpose of the research is to determine, formulate and implement the content and procedures of the professional and teaching training of technical college students in modern information and communication technologies.

2. Theoretical Thinking on Using Information and Communication Technology to Improve Teaching and Training Effects

In today's digital age, information and communication technology (ICT) has become an indispensable part of our society. We will discuss the importance and methods of creating information and communication technologies and the basis for their use. Through correct methods and reliable foundations, we can effectively construct and apply ICT to achieve more efficient, convenient and safe information exchange, knowledge sharing and social development.

The introduction to educational research methodology is the "reflection" and "synthesis" of educational research methodology [1]. The value of education, cultivating and practicing the core socialist values, is the source of energy and standard for the development direction of educational reform; innovation, fairness, practice, and openness are the basic guarantees and institutional foundations of educational reform and development [2].

In short, it should be pointed out that the use of modern technology in the field of education and teaching can promote the innovation and development of education and teaching, improve the effectiveness and quality of education, and provide students with a richer and more diverse learning experience. The use of various new technologies will increasingly appear in the field of education. We need to remain open and adaptable, learn to use and master modern technologies, and continuously promote the modernization, intelligence, and diversification of education and teaching [3].

With the help of the power of information and communication technology, it has never been possible to improve students' professional abilities and the effectiveness of teaching and training in the teaching process. Personalized learning, independent learning support, cooperative learning, interactivity, practical application and innovation ability have become the key elements of educational innovation brought about by ICT.

3. Practical Aspects of Application Modern Information Technologies in The Pedagogical Training of Students

In terms of the theory disclosed above, the use of information and communication technologies allows us to now consider the practical application of the effectiveness of information technology in student teaching and training.

The experimental investigation work includes: data collection by means of questionnaires for groups of Chinese college students. Understand the views of Chinese college students on the application of information technology to teaching and training.

The students participating in the questionnaire came from 213 college students from Ankang Vocational and Technical College in China. Let us briefly describe the questions of the questionnaire:

1. Do you think the use of information technology (PPT, video, etc.) in the classroom can improve your learning efficiency?

2. How often does your teacher use information technology in teaching?

3. Do you think that information and communication technologies can increase your participation and interactivity?

4. Do you think that information and communication technologies can improve your self-learning ability?

5. What do you think is the biggest advantage of information and communication technology in student teaching and training? What is the biggest drawback?

Regarding Experimental survey: Summary of the survey results of 213 college students from Ankang Vocational and Technical College on the application of information and communication Technology to teaching and training.

Question 1: Do you think the use of information technology (PPT, video, etc.) in the classroom can improve your learning efficiency?

For this question, 52.58% of students chose option 1: It can be improved, and 47.42% of students chose option 2: It makes no difference. From the statistical results, we can draw the conclusion that the proportion of students who believe that information and communication technologies can help improve students' learning efficiency is relatively large, but 47.42% of students still believe that the effect of applying information technology to teaching to improve students' learning efficiency is not obvious. For this part of the students, I also conducted a detailed investigation in the later stage. The feedback I got was that they felt that the effect of applying information technology to teaching on improving learning efficiency was not obvious. There are mainly the following reasons.:

1. The content of the presentation used by teachers is too boring and is not very different from the traditional teaching method.

2. Because teachers use presentations, the habit of writing board books and knowledge priorities on the blackboard for traditional teaching is eliminated, resulting in students unable to write down the key points of the class in time.

These problems are exactly what teachers need to pay attention to when using information technology. While information technology has brought us convenience, we should also look for better ways to use it. Therefore, we not only need to apply information technology to teaching, but

also learn to use it better.

Question 2: How often does your teacher use information technology in teaching?

For this question, 2.35% of students chose option 1: It can be improved, and 88.26% of students chose option 2: frequent use. 0% of students chose option three: never use it. 9.39% of students chose option 2: use it in every class.

From the statistical results, we can draw the conclusion that the proportion of teachers who often use information technology in the classroom is very high, and even 9.39% of students feel that their teachers use information technology without class. Moreover, none of the students surveyed said that they had a teacher who never used information technology. This shows that in China, the application of information technology to teaching and training is already very common. Therefore, we must think more about how to effectively use information technology.

Question 3: Do you think that information and communication technologies can increase your participation and interactivity?

For this question, 53.05% of students chose option 1: it can increase his participation and interactivity, and 46.95% of students chose option 2: it cannot increase his participation and interactivity.

From the statistical results, we can draw the conclusion that the application of information and communication technology helps to increase student participation and interactivity. The proportion of students is relatively large, but 46.95% of students still believe that the application of information and communication technology has no obvious effect on increasing student participation and interactivity. For this part of the students, I conducted a detailed survey in the later stage, and the feedback I got was: They felt that the application of information technology to teaching had an obvious effect on increasing student participation and interactivity. The main reason is: The content of the presentation used by the teacher in the classroom is not attractive enough, and this part of the students find the boring presentation is not very different from the traditional teaching method.

Question 4: Do you think that information and communication technologies can improve your self-learning ability?

For this question, 51.64% of students chose option 1: they can improve their self-learning ability, and 48.36% of students chose option 2: improve their self-learning ability.

From the statistical results, we can draw the conclusion that the proportion of students who believe that information and communication technologies can improve students' self-learning ability is relatively large, but 48.36% of students still believe that the application of information and communication technologies has no obvious effect on improving students' self-learning ability. For this part of the students, I conducted a detailed investigation in the later stage, and the feedback I got was that they felt that the effect of the application of information technology on improving students' self-learning ability was not obvious. There are mainly the following reasons.:

1. The content of the presentation produced by the teacher is too simple, and there is no in-depth explanation and analysis.

2. The content of the presentations produced by the teacher is too complicated and they are all long speeches, which leads to a decrease in students' enthusiasm for reading.

3. The logical thinking of the presentation made by the teacher is not clear. One will talk about this knowledge point and the other will talk about another knowledge point. The knowledge points are not well connected, making it impossible for students to complete independent learning. They feel that if such a presentation is separated from the teacher's explanation, they will not be able to understand it thoroughly.

Question 5: What do you think are the advantages of information and communication technology in student teaching and training? What are the disadvantages?

Through the collection of these questionnaires, the advantages and disadvantages of information and communication technology in student teaching and training are summarized as follows:

Advantages:

1. It is convenient for students to learn and is conducive to improving students' independent learning ability.

2. The application of information technology can enable students to learn more intuitively. Make the knowledge points more concise and clear.

3. Can increase the efficiency of learning and make learning more efficient.

4. It can bring more knowledge and information to students, which is conducive to expanding extracurricular knowledge points.

5. It saves the writing time of the board book and is more conducive to students taking class notes.

6. The combination of graphic and text display method is more conducive to students' memory and understanding of knowledge.

Disadvantages:

1. The presentations made by some teachers are too boring, causing students to lose their enthusiasm for learning.

2. The teacher focuses on the content of the presentation PPT, and individual students with poor self-awareness will not be able to learn well.

3. Watching the projection for a long time is not conducive to protecting your eyes.

4. The application of information technology has increased the amount of information in the classroom and increased the burden on students' thinking. Sometimes the information in the presentation is too scattered to highlight the focus of teaching.

5. Individual teachers rely too much on information technology, and even use information technology blindly in courses that are not suitable for IT.

The research conducted in the above investigation and experimental stages has drawn the following conclusions:

The use of information and communication technology can indeed improve the effectiveness of college students' teaching and training, but the blind use of information technology is not advisable. When applying communication and information technology to the classroom, teachers need to pay attention to the following points:

1. Overall design and structure: The presentation should have a clear structure and logical sequence to make it easy for students to understand and follow. Teachers should plan, organize and design the content of the presentation in advance to ensure the coherence and rationality of each part.

2. Concise and clear text: In presentations, avoid piling up a lot of text. Use concise phrases and keywords to summarize the main points of view. Important information can be

displayed in refined sentences, lists, or charts.

3. Images and multimedia materials: Use multimedia materials such as images, charts, icons, audio and video to make presentations more vivid and interesting, and enhance the attractiveness of information. Choose high-quality, relevant images and multimedia materials, as well as appropriate font size and color matching, to ensure readability.

4. Emphasize key information: Emphasize key information and key points of view in the presentation by using bold, italic, color changes, etc. This helps to attract students' attention and highlight important knowledge points.

5. Control page layout: The page layout of the presentation should be concise and consistent to avoid excessive complexity or clutter. Make sure that the layout of the elements on the page has a sense of layering, and the font of the text is large enough to be easy to read and understand.

6. Moderate use of animation and transition effects: Animation and transition effects can increase the visual appeal of the presentation. However, teachers should use it in moderation to avoid excessive or fancy effects so as not to distract students or interfere with teaching.

7. Combined with oral teaching: presentations should be used as auxiliary tools for teaching to assist teachers in oral explanations. Teachers need to flexibly use presentations, combine with their own explanations, interact and answer.

8. Interact with students in a timely manner: Arrange student interaction sessions in a timely manner in the presentation, such as questions, discussions or group activities. This helps students to actively participate and deepen their understanding and application of what they have learned.

Most importantly, teachers should be familiar with and proficient in using presentation tools, and conduct exercises and preparations in advance. Presentations are only auxiliary tools for teaching. Teachers still need to pay attention to their own teaching ability and expression ability, and provide effective teaching and training experience through flexible use of presentations.

4. Suggestion

Based on the above experimental results, we can give the following suggestions:

1. Determine teaching goals: Before introducing information technology, clarify teaching goals and students' learning needs. This helps to select appropriate technical tools and resources to ensure that the use of information technology is consistent with teaching goals.

2. Choose appropriate technical tools: choose technical tools that are suitable for teaching content and student characteristics as appropriate. This may include electronic whiteboards, teaching applications, online course platforms, etc. Ensure that the selected technical tools can meet the teaching needs and are easy for students to use and understand.

3. Teacher skills training and preparation: provide teachers with the necessary training and support to become familiar with and master the use of selected technical tools and best practices. Teachers need to understand how to effectively integrate information technology into teaching to improve teaching effectiveness.

4. Personalized learning and differentiated teaching: use information technology to provide personalized learning experiences and personalized tutoring according to students' interests, abilities and learning methods. Use adaptive

learning systems and online assessment tools to help students adjust their learning path according to their own progress.

5. Stimulate students' participation and interaction: create an interactive learning environment through information technology. Through online learning platforms, collaboration tools and virtual learning communities, students can share resources, exchange opinions, conduct collaborative learning, and cultivate teamwork and social skills. Encourage students to communicate, cooperate and share ideas with each other, and enhance classroom participation and learning motivation.

6. Reasonable selection and design of teaching content: When using information technology, reasonable selection of teaching content and resources to ensure compliance with teaching goals and students' learning level. Create meaningful, challenging and practical learning tasks to help students achieve deep understanding and application skills. Use ICT tools for teaching evaluation and feedback. Understand students' learning progress through online tests, evaluation tools, and learning analysis, and provide personalized feedback and guidance in a timely manner.

7. Balance the use of technology with traditional teaching: Information technology should be used as a supplement to teaching and combined with traditional teaching methods. Avoid excessive dependence on technology, maintain the dominance of teachers and the importance of personal interaction. According to the specific circumstances, decide when to use technology and when to use traditional teaching methods.

8. Continuous update and innovation: keep up with the rapid development of technology. Maintain attention to new technologies and learning tools, and constantly explore new

teaching methods and innovative methods to meet the needs of students and teaching.

5. Conclusion

Through the above experimental results, we can conclude that the correct, reasonable and effective use of information technology in teaching is the key. Information technology should be used as a supplement to teaching and combined with traditional teaching methods. The importance of maintaining the dominance of teachers and personal interaction. According to the specific circumstances, decide when to use technology and when to use traditional teaching methods. Teachers should choose appropriate technical tools according to teaching goals and student needs, and combine the principles of personalized learning, differentiated teaching, and interactive participation in teaching. At the same time, teachers should also strike a balance between the use of information technology and traditional teaching. We cannot rely too much on the use of information technology, and we need to maintain the diversity and innovation of teaching.

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