

Research on Clinical Engineering Technology Education under Internet

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Abstract—*In the information age, the internet is an unprecedented profound change on the global with the power to change everything. The traditional industries have launched the internet model, and the education is also facing opportunities and challenges. "Internet + education" is an important part of the national strategic in China. Based on the development background of the internet and the status of clinical engineering technology education, this paper analyzes how to develop clinical engineering technology education under the background of Internet + and puts forward suggestions for clinical engineering technology education research under Internet + background.*

Keywords—*Internet +, clinical engineering technology, educational research*

I. THE NECESSITY OF INTERNET TECHNOLOGY IN HIGHER EDUCATION APPLICATION

In-depth study of internet technology is in line with the trend of the times and development trends. The development of internet technology has promoted the reform of higher education teaching. It has a positive impact on the improvement of teaching methods and teaching content. Teachers should strengthen the adjustment of knowledge structure and improving teaching methods. Integrate media technology to maximize the effectiveness of teaching. Modern technology has brought new educational approaches to higher education, including network distance education, computer-aided simulation teaching, quality evaluation based on big data, and global superior education resource sharing. In the context of modernization, higher education must keep pace with the times, and applying the internet technology deeper in higher education to generate new educational models to improve the development of higher education.

II. CLINICAL ENGINEERING TECHNOLOGY

The clinical engineering technology major is accompanied by the development of science and technology and the advancement of medical technology. A large number of advanced medical equipment emerging in hospital for clinical. The clinical engineer's work is including two aspects: 1. operation of the life maintenance management device; 2. maintenance and repair of the life maintenance management device. Although the clinical engineering technology major in different countries is slightly different, but they are generally trained in hospitals and medical service institutions is same. These applied talents have certain medical theoretical knowledge and strong engineering and technical capabilities. There is currently no "Clinical Engineer" qualification certification system in China, but Shanghai University of Medicine&Health Sciences has opened the first clinical engineering technology undergraduate program, which fills the gap in the cultivation of domestic clinical engineering technology professionals in China. At present, modern medical equipment is developing in the direction of high-precision. As far as the current situation of hospital clinical engineering technicians is concerned, the quantity and quality cannot meet the needs of modern hospital development.

In summary, the research on clinical engineering technology education in the context of the Internet + is particularly important.

III. RESEARCH ON CLINICAL ENGINEERING TECHNOLOGY EDUCATION UNDER INTERNET +

The emergence of the internet has brought a new perspective to teaching content, teaching methods and teaching methods. It is necessary to improve the knowledge structure of clinical engineering technology

education, teaching methods, media technology integration, building an international communication platform, and setting up an international teaching team, so as to maximize the teaching effect. The combination of medical and industrial work, engineering-oriented, and management of internationalization, compound clinical engineering, high-quality technical application talents. Specifically, there are four aspects:

A. Building the Internet + digital education resource center

High-quality digital education resources are a prerequisite for quality education in the digital age. For the teaching of clinical engineering technology, on the basis of the existing platform, take more powerful measures, such as "one teacher, one excellent class, one teacher and many excellent courses", "one class one teacher, one class more than one teacher" and further gathering more quality educational resources to achieve high quality digital teaching.

B. Building an internet-based international talent training system

Using the internet technology to build international talent training system, learning from international resources and school experience, jointly set up an international teaching team, jointly negotiate and jointly develop and implement a talent training program. Study on the essence of international professional standards and training systems, combining the original professional advantages of our university, building a theoretical curriculum system and a practical curriculum system, and organically combine the two in the whole teaching process to implement personnel training.

C. Using big data technology to promote education management informatization

For the education reform of clinical engineering technology, establishing a management mechanism of "speaking with data, using data to make decisions, using data management, and using data innovation" to realize scientific decision-making based on data, improve the public service platform for education management, and promoting the accompanying education basic data.

D. Establishing an evaluation and feedback mechanism based on internet teaching quality

Exploring the evaluation and feedback mechanism of teaching quality that is compatible with the internet-based teaching model, and continuously improving the quality of the internet teaching. Strengthen the personalized service for students and other learners, evaluating the students' learning effects through the internet, strengthen the data sharing and exchange of teaching and management platforms, then promoting the sharing and application of quality education and teaching resources including curriculum resources.

IV. CONCLUSION

In the face of the development of global internet trend, internet technology is increasingly used in higher education. Educators should actively respond to the changes in the Internet + era, and applying Internet + education research in a wider range of higher education. The reform and promotion of higher education promotes the development of Internet + education. It is believed that clinical engineering technology will develop better and better in the context of the Internet +.

REFERENCES

- [1] Camurcu, Yilmaz A, Alsan, et al. International Clinical Engineering A Teacher Education Curriculum for Biomedical Electronics Technology Education in Turkey.[J]. *Journal of Clinical Engineering*, 1998, 23(6):428.
- [2] Vilcahuaman L, Rivas R. Health technopole: innovation applied to clinical engineering & health technology management education[J]. *Conf Proc IEEE Eng Med Biol Soc*, 2010, 2010(2010):6837-6840.
- [3] LozanoNieto, Albert. New Approaches for Biomedical Engineering Technology & Clinical Engineering Education: Interactive Video Conferencing Tools.[J]. *Journal of Clinical Engineering*, 1998, 23(2).
- [4] Lozano A. Incorporating Internet resources in biomedical engineering technology and clinical engineering education[C]// *International Conference of the IEEE Engineering in Medicine & Biology Society*. 1997.
- [5] Shaffer M, Kuhn J, Coakley C S. Clinical engineering education in the high technology hospital[J]. *Medical Instrumentation*, 1984, 18(5):280.
- [6] Bronzino J D. Clinical engineering: An education with a future: The degree to which clinical engineering will be successful depends on the type of educational program its future practitioners select[J]. *IEEE Potentials*, 2013, 3(4):30-32.
- [7] Donadey A, Langevin F, Farges G, et al. Clinical engineering education at Compiègne University[C]// *International Conference of the IEEE Engineering in Medicine & Biology Society*. 2011.
- [8] Baker T M. 2004 Survey of Salaries and Responsibilities for Hospital Biomedical/Clinical Engineering and Technology Personnel[J]. *Journal of Clinical Engineering*, 2004, 29(4):218-233.