The Importance of Modern Information Technology in the Education of Communication Theory: Applications and 3D Methods

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Abstract— Applying of Communication theory via Modern Information Technology (MIT) in the education is an important main course, especially in communication engineering which contributes in introducing the basic theory of this course. This study firstly discusses some problems relates in course of traditional teaching. Secondly, three –dimensional method (3D) considers a new teaching method is brought to the progress of the education toward the forward in order to overcome the problems. Eventually, the applications of three –dimensional methods are explained.

Index Terms— 3D, MIT, reform of education, communications theory.

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1 INTRODUCTION

Appling Communication theory via (MIT) is not only an important main course of communication engineering, which is regarded as a key specialty in our university, but also urgent need always in a required course of postgraduate entrance examination of communication specialist of a lot of universities. Moreover the course is considered as a key profession foundation topic of computer engineering and automatic. In this respect the control engineering as well as information engineering. It is very difficult for learners because of its characteristics such as strength theory, a lot of mathematical formula, multi abstract conception and little actual contact [3]. Subsequently, we should explore some new education methods such (3D) of the course in order to enhance and improve the quality of education, the education effect and the learners' abilities to analyze and overcome major problems [5].

2 ATTRIBUTES OF COOMUNICATION

Communication theory is a very professional foundation course which in principle provides the main basic conception of communication system and high discusses the major basic principles and suitable techniques of communication system.
The course involves huge information and its gauge, digital terminal technology, channel and noise, baseband transition and Modulation or demodulation of multi digital signals, optimum receiver and synchronicity principle so on [1].Over the study of the any course with communication theory the learners should understand the main basic conception of communication system, prime the key techniques of communication and can analyze an entire communication system. At the current time it is theory education is 64 hours, which is inadequate to comprehend the key theory of knowledge of the learners [7].

3 THE ANALYSIS OF TRADITIONAL METHODS

Current time the education of communication theory has some major problems as follows:

3.1 The single classroom education style

A lot of instructors in education scope apply the traditional styles such as talking and writing on the blackboard. The methods reduce the amount of information because of the least effective time in the classroom [6]. On the other hand, it is very difficult to styles obviously dictates and vividly express some knowledge points.

3.2 The obsolete multimedia curriculum

The multimedia course in current time uses the replica of the textbook which lists a lot of large sections of words, so it cannot reflect the main true meaning of multimedia education. It is so hard for learners to accept and learners will feel very tired and confused because of large sections solid words [4].

3.3 Experiments and Problems

In spite of experiment supported instruction is applied, the experiment content is fundamental to verify and learners are negative without intense interest. The experiments of MATLAB for instance, are mostly to write programs and programming language is very boring. Therefore, the learners cannot understand the real role of the computer software in simulation of communication system. It does not lead to train the innovative abilities of learners and to develop and improve their professional qualities swiftly [8].

3.4 Tests after class

Many examples and tests after class are the applications of one knowledge point which rarely includes the inclusive knowledge, so the learners' abilities of universal analysis are not improved and enhanced.

4 THREE DIMENSION METHODS (3D)

Regarding the three dimensional methods (3D) the information transmits and relationship between instructors and learners are not unidirectional but bidirectional and universal. The methods let learners, increasing their improvements and upgrade their ability rapidly with high the enthusiasm in learning. It involves observing by all their senses like eyes, discussion by the mouths and different perceptual experience by the ears, innovative thinking by head and operating, sharing by hands depended on the theory of constructivism and the style of target education [1]. The methods can improve and the revitalization, vividness of content and interactive   in education so that learners feel very interested to gain the knowledge. In summary, it will the learners' abilities of Inclusive analysis and fosters the total qualities of learners.

5 THE APPLICATIONS

Appling the three dimension methods (3D) in education are innovative and it completely uses the existing information technology [9]. It will be applied significantly in the course of the education for the purpose the teaching of communication theory, which will contribute in combining multi methods such as different the traditional methods include (writing on the blackboard), several computer assisted instruction, software simulation and online learning and teaching platform. The styles involving many interactions between instructors and learners and communication between learners will be taken into account in order to achieve the willingness effect. The main application is listed as follows:

5.1 New Multimedia Curriculum

As explained before several universities have applied multimedia teaching in education, but it has not really played a role in teaching because the curriculum used is solid and bored. In order to mobile the enthusiasm of learners and achieve many the interaction by some software are used such as JAVA and CAI to design new multimedia curriculum. The new curriculum has distinguished interface for learners. Flash is applied to describe the abstract content by the vivid many animations. It is not boring for learners at all and lets learners high actively participate in. Thus, the new curriculum unifies the quality of knowledge, teaching and quality training. The resonance of learners is very good after some months and the principles of communication theory are easily caught.

5.2 Matlab/Simulink Mimicry Software

The intensive professional course was limited to theory teaching before because of the confined conditions. It is considered a problem all courses faced. Now a fully communication system built by university funds is not realistic, in this respect the Matlab/Simulink mimicry software is applied in the course of teaching to mimic some parts of communication system.Software for Simulink of Matlab is a suitable dynamic simulation platform supplied by Math Works Corporation (MWC). A complex emulation style is constructed of module blocks so that learners can dispose of the pressure and stress of mathematical deduction and the concern of programming. Thus, the monitoring of the system working principles can be centered on. For instance, the digital amendment techniques involving 2FSK, 2ASK, 2PSK and MSK can be simulated by software of Matlab/Simulink. Over the emulation experiments, not only the learners' abilities of mathematical modeling will be enhanced and improved, but the a lot of advantages of the digital modulation in different techniques is observed by the outcomes of emulation.

5.3 Online Platform for Education

University (USM) has campus, is on the island of Penang as well as the university has a main branch for department of chemical and civil engineering.. Etc., continued to the same campus in Butterworth (Nibong), Schools of the engineering Campus in Nibong Tebal (approximately 50km from the main campus). Some students are in Penang and other in Nibong, so that it is very inconvenient for the relationship between instructors and students because the majority of teachers live in (Nibong) and other in Penang. When students have problems instructors often cannot solve them immediately. According to the actual situation an online teaching platform (empirical section in SEE USM) has been tentatively built. Students can ask questions on empirical section (SEE USM) when they have difficulties in materials of course, of teaching and learning and instructors will reply them as soon as possible. In the future, instructors will suggest to complete apply internet techniques to the online platform depended on the new empirical section SEE USM , so that instructors will interact with students and help them to solve the problems immediately.

5.4 Teaching Practice Role in Education

The main base for any practice teaching in the education sector is the effective supplement of classroom teaching, which will develop and improve the universal abilities of students. In order to further comprehends the content of this fundamental course the rich resources of the equipments of corporations can be used easily to build the teaching practice rule in education [3]. Preliminary, in order to let learners caught the basic principles of communication system we contacted the satellite control center of Penang and supplied an opportunity for learners to visit. In the actual course of visiting learners understand the all working process by the introduction of engineers. Students have a further conception of communication system depended

on the basic theory and asked multi questions about the working principle and regulations. Students wrote practice reports after the Visit. From the reports, instructors can see that the interest of students was improved by the visit.

Basically of visit instructors also contacted some corporations among groups relevant communication in different universities in many towns such UKM) in (KL) Kuala Lumpur and UUM in Kadah.., etc... And corporation off to set up practice rule in which learners can do production practice. Meanwhile, In the course of practice all students can see the working process of the microwave communication for different equipments and the construction and working principle of satellite communication system. By connecting theory with practice learners can analyze the principles and technical characteristics of equipments and do some explanation experiments in the guidance of technical staff. The style of practice is fully different from classroom teaching and learners can practice with hands also. Over the further production effective practice the practical abilities of learners can be improved and it is beneficial for students to profoundly understand the theory.

6 CONCLUSION

The study discusses deep some teaching problems in education of communication theory depend on the traditional methods. Then the feasibility research about new teaching methods is studied and explained and a new method called three dimensional methods (3D) is put forward. In summary, the new method (3D) can excite the learning interest, improve, and enhance the understand abilities of learners, so that the high quaity talents will be trained in these universities.

REFERENCES

[1]   [1]   N. P. Ololube, "Appraising the relationship between ICT usage and integration and the standard of teacher education programs in a developing economy," International Journal of Education and Development using ICT, vol. 2, 2006.

[2]   [2]   N. P. Ololube, A. E. Ubogu, and D. E. Egbezor, "ICT and distance education programs in a sub-Saharan African country: a theoretical perspective," Journal of Information Technology Impact, vol. 7, pp. 181-194, 2007.

[3]   [3]   P. Z. Kwache, "The imperatives of information and communication technology for teachers in Nigeria higher education," MERLOT Journal of Online learning and teaching, vol. 3, pp. 359-399, 2007.

[4]   [4]   E. E. Adomi and E. Kpangban, "Application of ICTs in Nigerian secondary schools," Library Philosophy and Practice (e-journal), p. 345, 2010.

[5]   [5]   M. O. Yusuf and H. T. Yusuf, "Educational reforms in Nigeria: The potentials of information and communication technology (ICT)," Educational Research and Reviews, vol. 4, pp. 225-230, 2009.

[6]   [6]   R. Rena, "Education and Human Resource Development in Post-independent Eritrea-An Explanatory Note," International Journal of Education and Development using Information and Commutation Technology (IJEDICT), vol. 2, pp. 67-81, 2006.

[7]   [7]   O. Adeosun, "Quality basic education development in Nigeria: Imperative for use of ICT," Journal of International Cooperation in Education, vol. 13, pp. 193-211, 2010.

[8]   [8]   S. U. Bassey, D. Okodoko, and U. D. Akpanumoh, "Information Communication Technologies in the Management of Education for Sustainable Development in Africa," African Research Review, vol. 3, 2009.

[9]   [9]   C. ENUNWAH, D. OKON, and D. AKWA, "Challenges of Information Communication Technology (ICT) as a Measure for Comparability of Quality Assurance Indices in Teacher Education."

[10]   [10]   I. R. Lawal and M. O. Oloyede, "Article: Enhancing the Quality of Leaning and Teaching Via Information Communication and Technology (ICT)}," International Journal of Applied, vol. 5, pp. 42-50.

[11]   [11]   S. Lubbe and M. Bopape, "The Social Impact of Information Systems at a Tertiary Institution," Management, Informatics and Research Design, p. 251.

[12]   [12]   S. A. Garba, T. K. R. Singh, and N. M. Yusuf, "Integrating Technology in Teacher Education Curriculum and Pedagogical Practices: the Effects of Web-based Technology Resources on Pre-service Teachers' Achievement in Teacher Education Training."