Examination on the learning impacts of sight and sound helped guidance utilizing data innovation model

Jing Cheng

National Pingtung University of Education, Ming Shen
.

Abstract

As technology advances, whether from the previous multi-media teaching, online teaching, or now interactive whiteboard, the various changes in both hardware and software resources as well as information are very huge. The information is quickly circulating under the changes in the old and new technology, and the new knowledge has been created. Therefore, the teachers' teaching patterns and teaching methods are bound to be adjusted. Many teachers and scholars also believe that information technology can contribute to education reform and bring innovation into the traditional teaching. The study aims to develop information technology model with multimedia computer-assisted teaching. The information literacy will be raised after the execution of the model.

Keywords: Information technology model, multi-media, software resources, interactive whiteboard, teaching methods, computer-assisted teaching.

INTRODUCTION

For the current status of elementary school education in Pingtung County, the researchers would like to explore the following questions as the study of motivation and purpose:

1) The understanding about what is used by teachers to integrate information technology (IT) into teaching: The statistics and analysis will be based on the usage of the teachers about the current school's existing IT equipment, such as audio-visual media, computers with single gun projecting cameras and big screen projectors, computers with single gun projecting cameras and whiteboard, or any other equipment (Shen, 2008; Taylor, 1995).
2) The exploring about the problems in teachers' usage and adaption in learning new information technology: For example, teachers participate in IT-related learning, practice, and the willingness to use (Timothy, 2009 Information Literacy of Ministry of Education, 2000)
3) The exploring about the condition of interaction between teachers using IT teaching and students in the class. When the implementation of technology used in teaching, the condition of students' attention, answering questions, and participating in the discussion (Ministry of Education, 2000, 2008).
4) Exploring about the problems when teachers prepare teaching materials: The sources of teaching materials

(vendor provided, the network, or self-compiled), as well as the time in preparing those materials (Wolf et al., 2011; Wang, 2000).

LITERATURE REVIEW

Education policy of the national information

After 1999, the Ministry of Education "Information Education Infrastructure Project", the implementation of the program to expand domestic demand, every high school and elementary school in Taiwan has its own computer lab which can connect via ADSL or T1 line on the Taiwan Academic Network TANet (Shulman, 2007). In 2009 "build schools equal high quality digital educational environment plan" builds specialist, such as multi-functional e-classrooms, single-gun projectors or monitors, networks, computers, electronic whiteboards, cameras, portable and writable computers, and other equipments (Oliver, 2009).

Information technology integration

Information technology into teaching is to integrate IT in the curriculum, teaching materials and teaching, so that

information technology becomes an indispensable teaching tool and learning tool for teachers and students, making use of information technology into the classroom in their daily teaching activities part, and can extend to as information technology as a method or a program at any time, any place to find answers to the questions (Mager, 1991).

The implementation of information technology into teaching is not a clear distinction for this course; it is learning to use information technology or just to learn other subjects or areas in the curriculum. In other words, IT has been truly integrated into other learning areas, rather than as a separate discipline (isolated subject). The emphasis of information technology into the teaching is holistic and integrated, and it is inseparable with both curriculum and teaching. If we can make use of information technology into everyday teaching and learning, it will be part of IT as usual teaching and learning tool, thus information technology has been successfully integrated into teaching (Mager, 1991). The teaching pattern has also changed after the implementation of information technology into teaching. Teachers are no longer the teaching protagonist, but the roles of guiders and supporters; therefore, students become the center of teaching and learning. In addition to the changing roles of teachers and students, the design of curriculum, teaching materials, and teaching strategies will all have to be shifted to student-centered integrated curriculum.

The key to success in teaching is in teachers rather than to teaching media. Many people have the misconception that new technology will be more effective than the traditional teaching media; in fact, effective learning is not media itself, but rather what teaching strategies and teaching methods are used when using information technology or teaching media. Whether traditional media, digital media, multimedia, etc., as long as if benefit teaching, teachers can integrate any information into teaching and learning activities. It is believed that because information technology has a sound and light video, animation and other features to attract attention and stimulate learning motivation of students and materials are easily updated over the network so that It can promote independent learning and skills in information of students via the technology.

TEACHERS' INFORMATION LITERACY

The meaning of information literacy

Literacy can be divided into two categories, one is the traditional meaning of the so-called literacy, that is, individuals with reading, writing and arithmetic ability to adapt to life; the other is functional literacy (functional literacy), refers to an individual with a certain skills, and according to their own set of goals to conform to at home,

work, community, and social life of role-playing. That is, information literacy is the ability to adapt to the information society. Foreign scholars consider that information literacy is integrated by the following four qualities (Akinbobola, 2006):

(1) Traditional literacy: The ability of reading, writing and arithmetic,
(2) Media literacy: The ability of understanding printed form of non-text media, the interpretation, evaluation, analysis, production, and evaluation,
(3) Computer literacy: The ability of using computer hardware and software such as word processing, spreadsheet and other tools to handle the file data capabilities,
(4) Network literacy: The ability of understanding the functions of Networking, application network resources, retrieving, processing, using and evaluating Internet resources.

The information literacy of teachers

Teachers should have the information literacy both in operation and demonstration of teaching integration. In the aspect of operation of demonstration, teachers must be familiar with school hardware device (such as network, PC, digital TV, single-gun projectors, video systems, etc.) operation, the integration of multimedia computer applications, the type and suitable condition of network and software resources available at schools, and fully understanding the meaning of teaching in order to free software resources to the most appropriate hardware present in the most appropriate teaching and learning processes to receive the best teaching results. In the integration of teaching, teachers must be equipped with the operation and demonstration of information literacy, yet familiar with the basic application software used (especially in the opened software such as word processing, spreadsheet, presentation systems, etc.), and the need for learning strategies and have a full understanding of teaching content, can only design the integration of IT teaching and learning strategies.
Ministry of Education for elementary and secondary school teachers in information literacy;

There are three basic qualities and ten indicators set by Ministry of Education for elementary and secondary school teachers in information literacy:

(1) Literacy of professional knowledge and information programs: To understand the network etiquette, to respect intellectual property rights, to understand the importance of information security, and to understand the computer as a teaching tool for general,
(2) Operation literacy of software packages and application software: To use the computer-aided teaching software and network resources, to manage and process
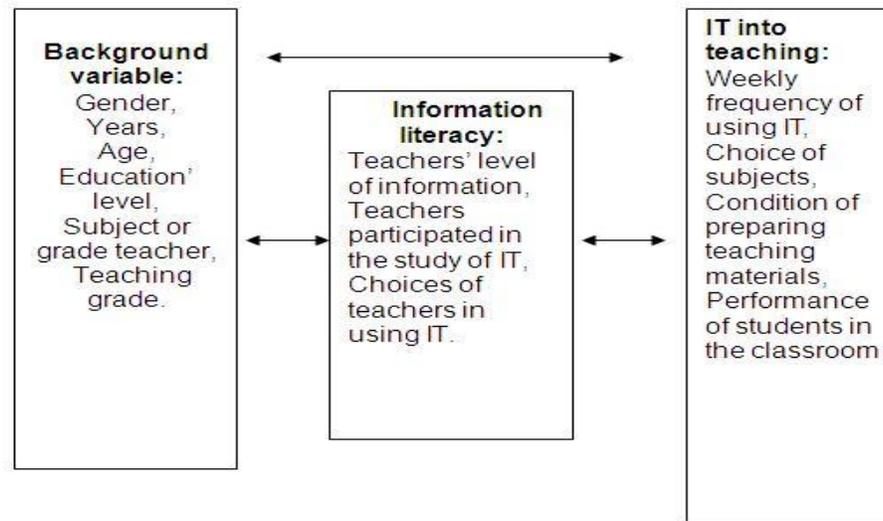
Figure 1. Developed model.

student data system, and to operate the system and related applications,

(3) The literacy of application of online teaching for subjects: To use network resources for individual teaching activities, to use network resources in participated interactive teaching, and to use the Internet resources to distance teaching and activities.

DEVELOPED MODEL

This study used literature analysis and survey research methods to obtain the necessary information which is used as a research basis.

Based on the framework in Figure 1, the analytical framework adopted in this research, studies the correlation among each other in order to understand the current condition of elementary school teachers using information technology into teaching.

Conclusion

Questionnaire in this study would be self-compiled by researcher based on the research framework, and the teachers in elementary schools of Pingtung County are the object of study. Stratified random manner is used as well according to the school size.

REFERENCES

Akinbobola AO (2006). Influence of teachers competence on students' academic performance in senior secondary school physics. J. Theor. Res. Educ., 9(2): 1-7.

Information Literacy of Ministry of Education for elementary and secondary school teachers (2000). Retrieved from http://content.edu.tw/primary/info_edu/tp_tt/content/nerc-1/law/teacher_point.htm.

Mager RF (1991). Making Instruction Work. Kogan Page, Lake Publishing Company.

Oliver RM (2009). Protocol for systematic review of the effectiveness of teachers' universal classroom management practices on disruptive student behaviour. Google Search using Evertson and Weinstein (2006).

Shen ZW (2008). Technology and Learning, Theory and Practice (Third edition), Taipei: Psychological Publishing.

Shulman LS (2007). Knowledge and teaching: Foundations of the new reform. In AC Ornstein, EF Pajak and SB Ornstein (Eds.) Contemporary Issues in Curriculum (Fourth ed.). Pearson Education Inc.

Taylor S, Todd P (1995). "An integrated model of waste managient behavior: A test of household recycling and composting intentions". Environ. Behav., 27: 603-630.

Timothy T (2009). "Modelling technology acceptance in education: A study of pre-service teachers". Comput. Educ., 52(2): 302-312.

Venkatesh V, Morris MG, Davis GB, Davis FD (2003). "User Acceptance of Information Technology: Toward a Unified View.", MIS Q., 27(3): 425-478.

Wang Q (2000). "The meaning and content of information technology into teaching." Inf. Educ. Bimonthly, 80: 23-31.

White Paper of Ministry of Education on primary and secondary Information education (2008). Retrieved from http://www.edu.tw/secretary/content.aspx?site_content_sn=25093.

Wolf D, Lindeman P, Wolf T, Dunnerstick R (2011). "Integrate with Student Success", Math. Teach. Middle Sch., 16(9): 556-560.