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Home Economics Teachers' Usage of Information and Communication Technologies in Hong Kong and in the Philippines and its Implications

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Abstract
The purpose of this study was to investigate what factors might be affecting the changing process to achieve at an optimum the 21st century teaching of Home Economics in the Philippines, with ICT as a contributing factor in the teaching and learning process. The integration of ICT is a major educational reform to achieving the goals of 21st century teaching and learning. It involves instructional transformation in the classroom; from a teacher-centered to a student-centered approach, and also incorporates shifts in the use of curriculum resources and personal beliefs. Educational change is a complex process and is affected by many factors. These factors include principals in schools, teachers, technical support, computer resources and professional development opportunities. Many barriers also exist which hinder the integration of ICT by the teachers. Methods used in the study were historical approach in which document investigation was undertaken to find and interpret relevant materials and data significant to the study. Findings showed, based on document investigations, that Hong Kong educational system is far ahead compared to the Philippines. The study found that the Philippines are inadequately prepared in ICT integration in teaching Home Economics which is germane in all facets.
Keywords: Home Economics, Teachers, Information Communication Technology, Philippines, Curriculum, K to 12 Basic Education Program

Introduction

Culture is the total-patterned way of life of people which helps shape human personalities and experiences, the core of which is the value or ethical system which governs the conduct of individuals and groups, and is expressed in terms of folkways, norms or standards of behavior in various social institutions and setting. Everybody accepts that education is one of the most significant mediating agencies of a culture. In modern society, vast changes in world communications, transportation, world trade and the world political situation have brought about changing cultural and economic patterns which place a great burden on education in

producing qualified professionals to address demands of the modern society, and at the same time, to preserve cultural identity. Moreover, it is an established fact that education is the most solid foundation for any form of government in order to attain and sustain a highly standard, fully functional manpower; in our democratic country, it particularly depends on the interest and concern of the people so it is reasonable to assume that education plays an important role in exercising the people's political rights.

Information and Communications Technology (ICT) has become significantly pervasive in all aspects of our life. We use electronic mail to communicate with friends, conduct business projects on the network, hold meetings with people across the border and everything seems to be at our fingertips in an instant with the Internet. There were 1,668 million people (24.7% of the total world population) who were Internet users according to the Nielsen/Net Ratings Global Internet Index as of June 2009 (Internet World Stats, 2008). Some significant percentages of Internet users in different countries are: Australia (79.6%), Canada (71.7%), United Kingdom (79.8%), United States (74.1%), China (25.3%) and Hong Kong (69.2%) (Internet World Stats, 2008). These figures reflect the penetration of technology, and its impact in people's lives over the world.

The recognition of the advantages of using ICT for teaching and learning is evidenced by the presence of computers in many schools around the world. For example, most education systems in the world have introduced computer technology, and schools in most developed countries are now connected to the Internet. Many tertiary institutions and some secondary schools conduct parts of their teaching via the Internet. People are able to continue their lifelong and life-wide learning as a result of information technology and web-based learning. For example, cyber-universities have enabled women in South Korea to continue post-secondary learning when traditionally the role of women in their culture has been to serve men, an academic qualification being regarded as unnecessary (Cohen and Manion, 1999). Students can enrol in courses from all over the world nowadays, and learning takes place without boundaries.

Because technological advances have begun to be integrated in education, the process of teaching and learning has changed over the last two decades. This change is necessary because students need to acquire lifelong learning skills and the ability to cope with the constantly changing environment. Dywer (1999) stated that students need to know more than how to learn, they also need to know how to analyze and summarize data, make decisions, work in a team, devise solutions to solve problems and to be adaptable to unexpected situations. He concluded that a technology-based learning environment can help students acquire the knowledge, skills and attitudes for a rapidly changing society, for example, electronic discussion, experiential learning via specialized software, simulation of real-life observation experiences, practice activities for developing decision-making, problem-solving and management skills (Dywer, 1999).

From the mid-1990s, many countries started to implement comprehensive ICT in education policies in an effort to integrate ICT in the education systems so as to satisfy the needs of the burgeoning information society. ICT was considered to be one of the important tools that could facilitate the development of new competencies and abilities in learners in order to develop skills essential for 21st century living (Pelgrum & Law, 2003). In 2004, in Alberta, Canada, a *Learning and Technology Policy Framework* was published and it emphasized learning in the knowledge economy and the importance of lifelong learning. In Singapore, a *Master plan for IT*

in Education was launched in April 1997 and the goals were to equip young people with creative thinking skills and the ability to learn independently and continuously so that the Singaporeans could meet the challenges of the 21st century. In Denmark, the Danish Ministry of Education has published a number of action plans for integrating ICT in the education system since the late 1990s. The plans aimed to develop students' ICT skills, focused on better access to the Internet and increased integration of ICT in their pre-service and in-service training of teachers in the country (Law & Pelgrum, 2003; Plomp, 2008). Similar policy was also introduced in the USA in 1996, *Getting America's Students Ready for the 21st Century — Meeting the Technology Literacy Challenge, A Report to the Nation on Technology and Education* (US Department of Education, 1996). In 2000, the US National Centre for Education Statistics studied the integration of various technologies in the teaching and learning process. The Centre reported the following examples of how teachers had integrated technology: 44% used technology for classroom instruction; 42% used computer applications; 12% used practice drills; 41% reported requiring research using the Internet; 20% required students to use technology to solve problems and analyze data; 27% had students conducting research using CD-ROMs; 27% assigned students to produce multimedia reports/projects; 23% assigned students to make graphical presentations of materials; 21% assigned demonstrations/simulations, and 7% assigned students to correspond with people over the Internet. This clearly indicated that teachers were making conscious effort in adopting ICT in their instructional practice.

What about an IT in education policy in Philippines? Is the government acting upon the need for the integration of ICT to enable the young people to keep pace with the changing needs of the technological world? These questions provide the starting point for this investigation.

The general purpose of this study is to create a detailed comparative analysis of Philippines and Hong Kong in terms of the selected educational areas that comprise their Home Economics curriculum with focus on ICT integration. Specifically, it seeks to answer the following questions: 1) how adequate is the ICT resource in both countries in relation to: access, connectivity, and usage; teachers' training; and technical support and need? 2) what are the methods of instruction commonly used in Home Economics in both countries in relation to ICT? and 3) what hinders the integration of ICT in Home Economics teaching in both countries?

Methodology

Design. This study is an exploratory investigation and is descriptive in nature. Hence, the focus of this study becomes an investigation of the adoption of ICT by Hong Kong Home Economics teachers in the light of prior research about educational change, barriers to ICT use by teachers, ICT initiatives in Hong Kong and adoption of ICT by Home Economics teachers in other contexts. This is to understand present practices and policies more fully; and how the Philippines could possibly adopt and effectively execute these practices and policies in its Home Economics curriculum.

Data Sources. The data for this study were obtained from an array of pertinent sources. This study made use of documents, numerical records, magazines, journal articles, brochures in Home Economics Education that served as core instruments that lead to the completion of the study. An in-depth analysis and evaluation of these data provided the necessary background needed in the preparation of the comprehensive and detailed comparison.

Limitations. This study is limited to Home Economics Education in general public schools; it does not include the General Education at all. The investigation will be limited to the present programs of Home Economics Education of both countries; the implemented method of instruction and the materials used for instruction. Data provided were primarily based on the information from documents, archives, and online journals and researches. This study does not attempt to judge the effectiveness of the program in either country, for it is concerned only with the methodology and strategy used in Hong Kong in delivering Home Economics subject, and if this could be possibly adopted in our present curriculum.

It examines the use of ICT in the teaching of Home Economics in Hong Kong. This is only one subject discipline in the secondary school and therefore the results may not be applicable to other subjects. Due to the variation in the content of Home Economics being taught in different parts of the world, the needs of the Home Economics teachers may differ and therefore the generalizations made to the Home Economics teachers should be used with caution and certainly have a prime focus on Hong Kong.

Data Collection Method. General descriptive and comparative procedures and methods were employed as follows: An analysis and investigation of all suitable and pertinent materials was conducted to find out what has been undertaken in the problem of the study and to acquire ideas regarding the success implementation and delivery of the Home Economics curriculum in the different countries. The researcher then made an intensive and extensive survey and read books, magazines, journals, documents, numerical records, and brochures on Home Economics Education in the library and online. Existing curriculum were also carefully examined. Reviews of related literature related to the study were reviewed. Thus, the theoretical body of knowledge drawn became the frame of reference for the analysis of the problem of the study.

From then on, the researcher selected among the best countries that could provide advanced pedagogical interventions and function as a model in applying the trends and innovations in Home Economics instruction in the Philippine educational system.

A study was made as regards the structure of the educational system in Hong Kong and in the Philippines with emphasis on secondary education to determine the position of Home Economics in the totality of the educational program.

The researcher chooses Hong Kong to be the country that will be compared to the Philippines because of the following reasons: 1) the demand for more relevant education for a changing society and the change in concepts of Home Economics have created a need for a study to analyze and compare the present Home Economics program in Hong Kong with a more advanced model to determine the similarities and differences and to make recommendations for future development. Thus, this study was designed to meet abovementioned specific needs; 2) it was considered appropriate to use the secondary Home Economics program in Hong Kong as a model with which to compare the secondary Home Economics program in the Philippines and to draw some recommendations for future development based on the results of the comparison; 3) in terms of ranking, Hong Kong ranks 4th in the top education systems in the world (http://www.edudemic.com/learning-curve-report-education/). This is because the country has clear and authentic learning outcomes and goalposts, and has a strong culture of accountability and engagement among a broad community of stakeholders; and 4) Hong Kong is well-known for

its excellence in education. Its world ranking is also consistent in the Program for International Student Assessment in Mathematics, Science, and Reading.

Results and Discussion

The purpose of this study is to explore, analyze and evaluate the success of the curriculum in Home Economics program of Hong Kong where it is well-known for its excellence in education. In data gathering needed for the completion of the study, the researcher made intensive and extensive reviews of the documentary analysis where theses, journal articles, documents, reports, review of related literature, magazines, and brochures were studied to provide specific answers to the present study. There were three questions posted in this study.

The Level of ICT Resources in Both Countries. Based on the investigation of documents, the Philippines have limited access, connectivity, and usage. Findings from the survey indicate that there is an urgent need to improve student-to-computer ratios if the country is to successfully integrate ICT in the public secondary school system. Training opportunities for teachers are generally limited to teachers training. Due to the limited funds, a member of the teaching staff, the principal or non-teaching administrator, or the computer coordinator performs this function for the school and sometime computers were never replaced or repaired.

In Hong Kong, all the schools had Internet connections with 97.6% of secondary schools having broadband connection. 99.7% of the schools had their own school websites and 88.4% of schools had subject websites. In the area of teacher training, all the teachers have reported to have completed the different levels of training. Technical supports were provided by school employing separate person who take charge of the ICT. This means that Hong Kong is highly adequate which indicates that they have more than enough for use while the Philippines has to work hard to improve the ICT facilities.

Methods of Instruction Commonly Used in Home Economics. Effective teacher involves the use of techniques of methods that are appropriate to the teacher, the students, and the content of which the class is dealing with. Documents investigated by the researcher revealed that both countries employ varied methods on teaching Home Economics. However, the availability of special kinds of methods of instruction in Home Economics showed variation between the two countries. The Philippines employs the traditional way of teaching Home Economics, thus, has shown slow improvements according to reports and documents. Hong Kong, however, has exhausted all resources, means, and funds in ensuring the efficiency of schools.

Table 1
Comparison of the methods of instruction commonly used in teaching Home Economics in both countries.

Hong Kong	**Philippines**
Demonstration method	Demonstration method
Laboratory	Laboratory
Question and Answer	Question and Answer
Resource person	Resource person
Committee work	Committee work
Field trip	Field trip
Integration method	Integration method
Group work	Group work
Drill/practice method	Drill/practice method
Project method	Project method
Supervised method	Supervised method
Discussion/lecture	Discussion/lecture
Problem approach	Problem approach
Inductive approach	Inductive approach
Deductive approach	Deductive approach
Role-playing/socio-drama	Role-playing/socio-drama
Case study	Case study
Experimental approach	Experimental approach
Panel	Panel
Forum	Forum

Table 1 below shows the different methods of instruction used in teaching Home Economics in both countries.

Based on the reported listings on the teaching methods performed in the classroom, it was found out that teachers employ varied methods in the subject delivery. The findings further imply that the methods they used are those that require lesser effort and time, yet with practical values or applications in everyday life. However, the availability of special kinds of methods of instruction in Home Economics shown in Table 2 apparently reveals the difference between the two countries.

Table 2
Special kind of instructional materials used in both countries.

Hong Kong	**Philippines**
Overhead projectors	Overhead projectors
Opaque projectors	LCD projector
LCD projector	Slide projector
Movie projector	Textbooks/references
Interactive white boards	Workbooks/manuals
e-Textbooks *(available on line)*	Learning modules
e-Workbooks *(available on line)*	Interactive white boards
e-videos *(available on line)*	
models	
Flat screen televisions	
Use of tablets and net books	

The proper use of audio-visual equipment and other instructional aide can facilitate teaching in the subject Home Economics. The impressions of the teachers have been sought in the different studies conducted in both countries; it only determined the availability of the same in school. The most available equipment in the Philippines are overhead, LCD, slide projector, textbook/reference, workbook/manual and learning modules. This shows that the country still uses traditional instructional methods and sources of learning, and has shown slow improvements according to reports and documents.

Hindrances of ICT in Home Economics Teaching. Findings of the study according to the document investigation showed some barriers in the integration of Home Economics teaching in which some are common to both countries, like lack of time and tight timetable and curriculum. Philippine, on the other hand, identified additional hindrances, these are: lack of accessibility of its facilities, teachers' knowledge, skills and attitude, role of leadership, and lack of software. This implies that the Philippines, does not have nearly enough hardware, peripherals, network technologies, and simultaneous Internet access for technology use to begin to have an impact on the quality of instruction.

It's Implication in the Philippine Setting. *Make 21st Century Learning Reality.* The inculcation of realistic 21st century education features are the main point of K to 12 – to create a 21st century learner capable of employment, entrepreneurship, and further education. If skills required in 21st century learning are not given since the basic foundation, surely, nothing will change. Formulate and circulate to all stakeholders an official National ICT for Basic Education Strategic Plan that would harmonize and direct present and future efforts of government, the private sector, and civil society groups to reform basic education through ICT. The Strategic Plan should include: 1) a unifying vision to fully integrate ICT in the secondary school system (i.e., not just to teach and learn the technology but to use the technology to improve teaching and learning) and clearly articulated and measurable curricular/pedagogical goals and objectives; 2) design of the ICT architecture and engineering, with emphasis not on "how much technology" but on "how it will be used". This would include setting technology standards for different types and sizes of schools as well as different levels of use; 3) development of specific guidelines,

templates, teaching aids for integrating ICT in the home economics curriculum; 4) development of Home Economics curriculum-specific software including those in the local language; 5) Development and implementation of a comprehensive in-service training program for teachers and administrators covering computing and information literacy skills, the instructional and non-instructional uses of ICT, curriculum integration and corresponding pedagogical strategies; 6) incorporation of the same knowledge and skill sets at the pre-service training stage; 7) development and implementation of a comprehensive program for building the capacity of schools to address technology and technical support issues; 8) a financing plan that includes measures to increase the national budgetary allocation for education in general and ICT-integration in particular; to institutionalize local government support through the Local School Boards, to get buy-in from Parent-Teacher Associations and actively promote community mobilization efforts, and to build public sector-private sector partnerships; and 9) Institutionalization of monitoring and evaluation at the Bureau and Regional levels. This would also involve the development of tools for assessing the impact of ICT-integration on student achievement.

It is recommended that pilot testing be an integral part of the Strategic Plan, the results of which will be critical in addressing efficacy, sustainability, and scalability issues. This Strategic Plan should be a rolling document, to be revisited periodically and, if appropriate, revised to accommodate changes in the technological, educational, socio-cultural, and fiscal environments. Create the institutional mechanism for the effective and efficient implementation of the Strategic Plan, beginning with the establishment of a Center for Educational Technology within the Department of Education.

Implementation plan. Recognizing the potential benefits of integrating ICTS in education systems, the national strategic planning initiative for ICTS in basic education must be a reality as part of a system-wide reform process to bring philippine basic education out of crisis. This national framework plan must set three parameters for the use of ICTS in basic education, namely, appropriateness, effectiveness, and sustainability. *Appropriateness* refers to suitability in context. Factors to consider in choosing an ICT resource is the learning goal and objective to be met, the content of the material and its availability and accessibility to students. The most appropriate ICT tool does not need to be the most up-to-date or expensive available in the market. *Effectiveness* refers to the extent to which stated goals and objectives are realized. When used appropriately, ICTS are powerful tools that can improve motivation and engagement in the learning process, develop multiple intelligences, facilitate comprehension of abstract concepts, promote inquiry and exploration through the use of interactive learning resources, enhance information literacy, critical thinking, problem-solving, and other higher order thinking skills. ICT can facilitate collaborative and cooperative learning by providing tools for learners to communicate and work with other learners, and develop lifelong learning skills, including learning how to learn. *Sustainability* is defined as the extent to which the implementation of an ICT-based project (in the context of basic education) can continue after initial project funding or support has ended.

Developing ICT curriculum standards for K-12 schools in the Philippines seems to be a long decision process, yet the urgency to do it should be realized now as technology is becoming more and more crucial in the lives of Filipinos as they follow the path of economic growth and

strengthening of a nation. The researcher believes that the first step is to accept the need to formulate these standards, know and prepare for the challenges ahead, have the will to pursue it by utilizing whatever resources are available, and be able to carry on the appropriateness, effectiveness and sustainability of ICT integration in schools, keeping in mind that its success lies in the hands of Filipino educators who are committed to make their education system work in the midst of many barriers to learning.

Conclusion

ICTs can be used to improve the quality of learning. They can promote learner motivation, mastery of basic concepts, and the development of higher order thinking and lifelong learning skills. Lack of vision, lack of consensus and lack of policy on how to integrate ICT in education consistently, are not very helpful. It is also necessary for changes to take place in the organization of the schools, the examination and assessment system. The school education, colleges and universities must continue to take leadership roles for making improvements in Home Economics teachers' effective use of ICT in the teaching and learning process. Furthermore, school must take major responsibility for providing training and work to reduce or eliminate the barriers to technology integration. Teachers and school systems must collaborate to pursue technology integration at the highest level where innovative technology-based approaches to teaching and learning are highly valued and integrated in the total learning environment.

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