Information and Communications Technology Acceptance among Malaysian Adolescents in Urban Poverty

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ABSTRACT

This study was conducted to identify the information communication and technology (ICT) usage among adolescents in urban poverty and their acceptance of using ICT in teaching and learning (T&L) process. The Technology Acceptance Model was used in determining the acceptance of ICT by focusing on factors such as perceived ease of use and perceived usefulness as the two main factors that is much referred for technology acceptance. This case study was conducted using a quantitative and a questionnaire was used to collect data from 50 respondents. SPSS software was used in the form of descriptive statistics. The results showed that majority of the respondents do not spend much time in using ICT at home or even during class session. However, their acceptances in using ICT are positive in T&L process. Based on the findings, suggestions have been proposed to increase the effective use of ICT among adolescents in urban poverty.

Keywords: adolescent, urban poverty, information communication and technology, technology of acceptance model

INTRODUCTION

Noor (2006) defined the term information communication and technology (ICT) as a technology tool for aiding in communication, processing and sending of information in electronic form. The use of ICT can provide numerous benefits to users such as help in disseminating information, social interaction, education, entertainment, health and so on (Nayak et. al., 2010). The era of information technology use began in latter part of the 1990s, developing rapidly until now. National development in Malaysia has undergone various changes beginning from the agricultural era to the industrial development and currently the transformation in the information and communications technology (ICT) field. Walsham et al. (2007) stated that ICT use helps in the development and growth of a national economy especially in developing countries.

From the aspect of digital technology use in Malaysia, the use of telephone network had been introduced in 1874, followed by the introduction of computer technology in 1966. The Malaysian government had taken the step to inculcate ICT based economic development in the Eighth Malaysia Plan, followed by the Ninth and Tenth plans where ICT was seen as a key enabler and one of the components and major objectives in national development. Various steps were taken and efforts implemented in order to achieve sustainability in programs and projects carried out such as Smart Schools, telehealth, research and development cluster, Multimedia Super Corridor, cyber city and so forth (Musa et. al., 2012).

Malaysia targets to be a developed nation by 2020 and also has taken the initiative to widen ICT usage in society in order to bridge the digital divide and in efforts to expand the knowledge based economy. In 1994, the Malaysian government introduced the National Telecommunications Policy to enhance the capacity to use ICT in society. The national Vision 2020 envisages a society based on information and knowledge. In efforts to achieve Vision 2020, the Government has carried out several programs and prepared the requisite infrastructure.

One of the elements that can facilitate economic development and social development in a country is by rapid development in ICT use. From the aspect of economic development of a country, Kriz & Qureshi (2009) state

that ICT use is regarded as a tool contributing to economic development. This scenario shows that most countries all over the world have used various approaches to implement ICT usage in developing society. According to Elgar (2009), most countries all over the world have taken the opportunity to widen ICT usage in community development.

ICT USE AMONG ADOLESCENT IN URBAN POVERTY

The term "adolescent" in general refers to those in transition between childhood and adulthood or aged in the range 12 years to more than 20 years (Azyyati et al., 2013). This group plays a very important role as the foundation of national prosperity and economic development. Adolescents who stay in the urban poverty areas usually are associated with the community living in poverty in urban areas. Although poverty is also happening in the rural areas, the urban locations are more often mentioned in any discussion on poverty. According to Kamus Dewan (2007), the term poverty is related to poor, lack and indigence. Mohamed (2010) stated that to measure the level of poverty of a household, one guideline is the poverty level.

The National Statistics Department of Malaysia (2013) stated that the poverty level income is the minimum basic food needed by the household members, meaning that it is the non-food requirement for each member. The basic household income or basic needs obtained allows them to function in society. Based on the poverty level income (PGK), the household is regarded as poor if its monthly income falls below the PGK. Hence, if the monthly household income is lower than the PGK, for example the household is only able to fulfill the basic needs from the aspect of minimum nutritional needs of the household members to have a healthy body; they will be regarded as the absolute poor. Siti (2009) stated that poverty encompasses multiple elements such as lack of nutrition, and low health status, low education and low income, unemployment, unsafe housing, not having modern necessities, having unstable job prospects, negative attitude to life and outdated thinking.

Giligan (2006) emphasized that the location aspect of an area also influences ICT use whereby for rich or modern areas, the rate of Internet use is higher than that in poor and backward areas. Studies by Owo (2010) support Giligan (2006) by revealing that users of ICT are more likely among the rich and well educated as opposed to the poor. This clearly shows that the urban poverty community is made up of the marginalized and those dropouts from the mainstream development unless positive steps are taken to narrow the digital divide. ICT also plays a role in affecting in a positive or negative way the life of adolescent. Access to the world without borders has influenced the life of youth with modernization and globalization these days.

The issue of digital divide emerged when there exists disparity between the areas using technology and those areas lacking in technology use. This term paints a picture related to the disparity between urban and rural areas (World Youth Report, 2003). According to Kemly (2006), digital divide can be categorized into several aspects such as access to ICT facilities, the level of ICT use as well as quality or awareness in using the technology. Norfatimah (2013) stated that in the use of broadband in 2013, Malaysia is in the second place in terms of broadband usage in the Asean region. However, there are some challenges and problems faced by the urban poverty in ICT usage. According to Siti (2014), among the problems and challenges faced are limited infrastructures, incapability to buy ICT equipment, lack of knowledge on ICT use, lack of skills, lack of training in ICT use and so forth. This clearly shows that focus on the urban poverty is needed in ICT usage. The appropriate focus should be given in order to help the urban poverty raise their standard of living.

ICT IN EDUCATION

According to Doris et. al., (2012), education plays an important role in improving a country economic growth as well as help in increasing the knowledge and skills for a better life. Suhid (2005) also states that education help to overcome problems of moral decadence in the society specifically among youths who will be a catalyst for the country. According to Spector (2012), the technology expansion has affected almost all sides of life specifically in teaching and learning process. In the 21st century, the use of ICT has been the focus to stimulate and improve the effectiveness of the teaching and learning (T&L) process (Zhao, 2007, Mcalister et. al., 2005; Goodison, 2002). The examples integration on using ICT in T&L process are the use of computer, a Liquid Crystal Display (LCD), printers, radio, and television, as well as a variety of software such as Ms Word, Ms Powerpoint, electronic spreadsheets, Internet and so on (Shelly et. al., 2004 and William, 2000).

ICT is a technology tool to help and facilitate communication and processing besides information delivery through electronic means. One of the elements to help accelerate economic development and social development is the rapid growth of ICT in use. Nevertheless, many problems and challenges are faced by the urban poverty community from the aspect of using ICT in teaching and learning process. The role of ICT in education must be seen as something that accelerates the learning process more effectively. Learning refers to the process of acquiring new knowledge, skills, attitudes and values whereby indirectly the behavior of the individual will

change. The use of ICT brings a creative and supportive learning environment that is able to transform pedagogy and learning in any event it still gives knowledge (Volman and Eck, 2001).

ICT plays an important role in the life of society in upgrading their daily lives. Thus, secondary adolescent in urban poverty should take the initiative to use ICT in teaching and learning process. This is because according to Azahar (2004), the need to improve the standard of education in Malaysia is very important to produce human capital with excellent academic achievement in contributing to the progress of the country.

THE AIM OF THE STUDY

The emergence of technology in Malaysian education system has grown; however there is still lack of studies focusing on the use of ICT in T&L process among adolescent in urban poverty. The needs of educational transformation in terms of value and morality are very important, especially among adolescents who will be the catalyst for the country. Attention must be given to the pattern of ICT use among adolescents especially adolescent in urban poverty in terms of purpose of ICT use, factors influencing ICT usage and effectiveness of using such tools among the urban poverty adolescents; this will ensure ICT usage can help develop healthy lifestyle practices among adolescent in future. The adolescent in urban poverty are recommended to take various initiatives in using ICT based tools given that ICT use is able to change their lifestyle and wellbeing. Hence, the main objective of this study is to identify on ICT usage among adolescents in urban poverty and their acceptance in using ICT based on theory of acceptance model (TAM) in T&L process.

THEORETICAL FRAMEWORK

Acceptance is the situation of behavior that demonstrates agreement to new condition or situation. In this study acceptance is a state that adolescent in urban poverty show positive behavior toward using ICT in T&L process. Many researchers used the TAM including studies about health care and mobile banking. Technology acceptance model is retrieved from Theory Reasoned Action which is one of the core theories in psychology (Fishbein & Ajzen, 1980). Theory Reasoned Action is determined in what way individual's behavior affected by intentions and if based on the pervious behavior and action. Technology acceptance model has been used as a guideline for this study based on two major elements of this model which are perceive usefulness and perceive ease of use. These two elements can determine the three research objectives of this study. Davis in 1989 introduced TAM model when he was researching about social psychology. This model attempts to anticipate and clarify why user accept or reject a computer-based innovation (Davis, 1989). According to TAM model two major elements have influence on user behavior concerning to technology usage: perceived ease-of-use (PEU) and perceived usefulness (PU). This conceptual framework is started with perceived ease of use. Based on the TAM model, if usage of specific technology be simple then people find that technology easy to operate for them. These imply that if the medium able to enhance and improve in teaching and learning process, thus it may be easy to use appropriately. Ease of use may have a positive influence on students learning and knowledge achievements because they would not be confused on how to use the new intervention and struggle when using the technology in future. Moreover, this model suggests that the perceived ease of use has impact on perceived usefulness of a technology. Owing to the fact that if a person find operation with a technology is easy, therefore that technology appears more beneficial for that person (Davis, 1986).

Technology acceptance model has been used as a guideline for this study based on two major elements of this model which are perceived usefulness and perceived ease-of-use. This study used the technology acceptance as theoretical framework as an intensive, predictive and powerful model to explain and predict the acceptance of using a new technology to the users. According to Joo et. al., (2014), perceived usefulness and perceived ease of use has a major impact on satisfaction in learning. In this study, perceived usefulness means students believe that the use of ICT is useful for their learning regarding the enhancement in their learning performance. In this study, perceived ease of use means students are inexperience with the use of technology, face difficulties to use the technology and do not feel any complexity about working with podcast. According to Davis (1989), if people understand applying technology is simple and easy for them, they will use the technology in future.

RESEARCH METHODOLOGY

This research was conducted at a University in Malaysia and instructor held a workshop for a period of five weeks which focused on topic of poverty with the use of ICT in T&L process. Topics consist of poverty issues, namely financial poverty, poverty status, poverty inclusion, participation poverty and poverty ability in duration of 60 minutes per sessions. Purposive sampling was conducted in this research and 50 adolescents who were secondary students in urban poverty areas were selected as the subjects of research. The researcher used questionnaire as an instruments to collect and analyze data. This research used a modified Davis questionnaire by Davis (1980) because of the differences in technological device. The original questionnaire was concerning on using graphic software however this research focuses on the usage of podcast in the teaching and learning

process. Besides, the target group for the original questionnaire was on adults' learners whereas this study was school students; hence some questions were changed to make them understandable to school students.

The modified questionnaires were tested with I-CVI test by including a few experts. The result for all items in the questionnaires was I-CVI >0.80 (1.0>0.80) and considered evidence of good content validity for all items. The results of the Cronbach Alpha also are more than 0.80. This questionnaire has been divided into three parts. The first part is to determine the usage of ICT among adolescent in urban poverty which consisted of 4 items. The second part is to investigate perceived usefulness of using ICT which consisted of 4 items with seven likert scales from strongly agree to strongly disagree. The third part explored on the students' perceived ease of use of ICT in T&L process which consisted of 3 items with the same rating scales from strongly agree to strongly disagree. The questionnaire data were analyzed in descriptive statistics using SPSS software. Data responses were analyzed in column charts with the percentage, Mean (*M*) and Standard Deviation (*SD*). This study also focused on the use of ICT (digital technology) as a platform for supporting the T&L process. Digital technologies used in this study were computer, laptop, LCD, Youtube (video), digital pen & touch, E-quiz, E-games and Powerpoint. TAM was used to find out the acceptance on using ICT based on two main factors that much referred in this model such as perceived usefulness and perceived ease of use.

Findings and Discussion
Both the descriptive and inferential findings are presented in this section. The descriptive findings include percentages, means and standard deviations. Table 1 showed the ICT usage among adolescent in urban poverty.

Table 1. The ICT usage among adolescent in urban poverty.

No.	Questions	Percentage (%)
1.	Is any of these devices available for you to use at home?	
	a) Never have	79
	b) Computer or laptop	21
	c) Printer	0
	d) Scanner	0
	e) Video camera	0
	f) Document camera	0
	g) Other: Please state: …….	0
2.	How often do you use any of ICT devices at home?	
	a) Never use	79
	b) About half an hour a week	10
	c) About an hour a week	11
	d) About two hours a week	0
	e) About four hours a week	0
	f) About five hours a week	0
	g) About six or more hours a week	0
3.	At school, how much time do you spend using the ICT during classroom lessons?	
	a) Never use	60
	b) About half an hour a week	40
	c) About an hour a week	0
	d) About two hours a week	0
	e) About four a week	0
	f) About five a week	0
	g) About six or more hours a week	0
4.	How much time do you spend using the computer at school outside classroom lessons, e.g. in cyber cafe?	0
	a) No time	0
	b) 0 – 5 minutes	0
	c) 0 – 15 minutes	22
	d) 0 – 30 minutes a week	78
	e) 0 – 45 minutes a week	0
	f) 0 – 60 minutes a week	0
	g) More than 60 minutes a week	

Referring to item 1, majority of respondents stated that they never have any of ICT devices for them to use at home. For item 2 regarding on how often do the respondents use any of ICT devices at home, 79% agreed that

they never use any of ICT devices at home, 10% used about half an hour a week and 11% used about an hour a week. Item 3 showed that 60% of the respondents agreed that they never use or spend time using ICT during classroom lessons whereas 40% stated that they used about half an hour a week in classroom lessons. Item 4 also showed that 78% agreed that they spend using the computer outside classroom lessons and 22% stated about 30 minutes a week they spend using the computer outside classroom lessons. Overall, form the findings it can be concluded that majority of the respondents' agreement towards the usage of ICT at home or at school is reported low levels. More than 50% of the agreement for item 1-4 showed that they still unfamiliar in using ICT as they do not spend much time in using ICT at home or even during classroom session. Although the Malaysian Ministry of Education is clearly aware of the importance of merging ICT in the curriculum, still there are some difficulties in implementing ICT facilities in schools. Unavailability of some infrastructures might be the reasons for unsuccessful migration to ICT based curriculum especially in urban poverty areas. Haryati and Sharifah (2009) also agreed that in Malaysia, there are many issues and problems specifically related to facilities, services, costs and modes of transportation which will be a constraint in achieving a good quality of life in urban areas. The researcher believed that this might be the reasons why the ICT usage among adolescent in urban poverty was still at low level.

To determine the adolescent in urban poverty acceptation of using ICT in T&L process, Table 2 showed that more than 60% of the respondents agreed with all the questions presented. Each of the items recorded a mean exceeding 2.50; indeed, the percentage agreeing exceeded two-thirds of the total number of respondents involved. This finding shows that on the whole the adolescent in urban poverty agreed that usage of ICT fulfils their acceptance as stated in TAM model hence enhancing quality in the teaching and learning session.

Table 2 Percentage, mean and standard deviations on the factors of perceived usefulness and perceived ease of use.

No.	Questions	Percentage (%)	Mean	SD
	Perceived usefulness			
1.	Using ICT in my study would enable me to understand the lesson more quickly.	73	2.88	(0.90)
2.	Using ICT would improve my study performance.	71	2.85	(0.87)
3.	Using ICT would make it easier to understand the concepts and instruction.	69	2.75	(0.85)
4.	I would find using ICT is useful in my T&L process.	67	2.70	(0.84)
	Perceived ease of use			
1.	In my study, I am mostly likely to use ICT in teaching and learning process.	72	2.82	(0.81)
2.	I predict that I will use ICT on regular basis in the future.	65	2.67	(0.79)
3.	I will become an ICT user in future.	60	2.63	(0.73)

- Information Communication and Technology (ICT)

The result of first factor which it is perceived usefulness presents that for item 1, 73% with mean and standard deviation of 2.88 (0.90) were strongly agreed that ICT helps them to understand the lesson more quickly. Moreover 71% of respondents with mean and standard deviation of 2.85 (0.87) were strongly agreed that usage of podcast improve their study. Furthermore 69% of respondents with mean and standard deviation of 2.75 (0.85) were strongly agreed that using ICT make easier for them to understand concepts and instructions. Additionally 67% of respondents with mean and standard deviation of 2.70 (0.84) were strongly agreed that ICT is useful. For second factor which it is perceived ease of use, 72% with mean and standard deviation of 2.82 (0.81) were strongly agreed that they were most likely to use ICT in teaching and learning process. Moreover 65% of respondents with mean and standard deviation of 2.67 (0.79) were strongly agreed that they predict that they will use ICT on regular basis in the future. Furthermore 60% of respondents with mean and standard deviation of 2.63 (0.73) were strongly agreed that they will become an ICT user in future.

According to the result, this study has adherence with technology acceptance model (Davis, 1989). The two dimensions of TAM model which are perceived usefulness and perceived ease confirmed has influence on using ICT among adolescents in urban poverty. Sun and Zhang (2006) also reported that perceived usefulness and

perceived ease of use are the dominant instrumental beliefs of individual usage intention. Adolescents living in urban poverty areas need to make full use of various initiatives to use ICT based tools considering that ICT use is capable of changing their lives. The finding of this study demonstrated that although majority of respondents stated that they never have any of ICT devices for them to use at home, thus they didn't experiences any difficulties and didn't feel any complexity in using ICT in teaching and learning process. This finding is consistent with studies by Roselan (2003) which states that the effectiveness of the teaching process depends on ICT equipment that is used as an intermediate platform between teachers and students. The use of ICT could improve productivity and living standards among urban poverty communities. Musa (2010) also states that ICT plays an important role in community life because it is capable of improving effectiveness and raising the daily standard of living of the community. A study by Jeynes (2002) states that socio-economic factors such as educational background, employment status and income levels also affect the education of students.

CONCLUSION AND RECOMMENDATION

This study contributed a practical approach for teachers and schools specifically in urban poverty areas to embrace technology on their curriculum. As a developed country, Malaysia has taken various initiatives to expand the use of ICT at all levels of society. This is because the use of ICT can help in the economic growth and social development of a country. (Walsham et al., 2007). Ruth (2007) also agreed that the use of ICT can help to overcome and eradicate poverty in a country. Mohd (2010) agrees that ICT plays a key role in the life of society at every level. The findings of this study is important to Curriculum Development Centre (PPK), Malaysian Ministry of Education as a guide to implement the use of ICT in teaching and learning process. Thus, it is suggested that the Ministry of Education should play an important role in providing ICT facilities especially in urban poverty areas school. This is because most of the schools in urban poverty areas are lack of ICT facilities. All parties must play their part in ensuring they cooperate so that ICT use in urban poverty areas is beneficial and maximized in line with developments in urban areas. This will help bridge the digital divide in ICT use between rural and urban society. It is suggested that guidelines be developed as well as working plan for evaluating the effectiveness of ICT use to help develop the economy of the urban poverty community. This is because ICT practice and use can enhance productivity as well as the living standards of the urban poverty.

According to the result, this study has adherence with technology acceptance model (Davis, 1989). The two dimensions of TAM model which are perceived usefulness and perceived ease of use has influence on using ICT among adolescents in urban poverty. As this research had discovered that the use of ICT are positive among adolescents in teaching and learning process, thus teachers should emphasize on using ICT optimally at school. Teachers should work towards creating a fun learning process which would attract students' interest to learn and increase their motivation in teaching and learning process.

This study only focused on the use of ICT such as digital technologies (laptop, LCD, Youtube (video), digital pen & touch, E-quiz, E-games and Powerpoint). Other studies can be done using different platforms such as Proboards, Edmodo, Spicynodes, Teamweaver, Blog and so forth so that the effectiveness of the T&L using this platforms can be investigated. According to Holland & Holland (2014), using various technologies tools able to enhance students' interest and motivation as well as provides the prospects to achieve different character of learners. Considering that the respondents were adolescents in urban poverty, they need to cultivate expertise in ICT to prepare themselves for the future job market (Norizan, 2004; Pachler, 2001). This is because the use of ICT could improve productivity and living standards among urban poverty communities. Further, it is recommended that a more in-depth follow-up study is expected to be carried out using other methods such as experimental research, design and development research and so on to survey the acceptance of using ICT in teaching and learning process particularly among adolescent in urban poverty.

ACKNOWLEDGMENTS

REFERENCES
Azahar Nayan. (2004). *Student Interest Survey on the Use of Computers in Teaching and Learning Mathematics.* Scientific training. Universiti Pendidikan Sultan Idris, Perak.

Azyyati M.N., Fariza M.S., & Salasiah, H, H. (2013). *Types of Youth: Literature Study.* Retrieved from: http://journalarticle.ukm.my/6874/1/4185-9637-1-SM.pdf

Davis, F. D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly* 13 (3): 319–340**.**

Davis, F. D. (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results. *Doctoral dissertation.* Cambridge, MA: MIT Sloan School of Management.

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85.

Doris, P. S, Abdul, H, J, Norlida, H, Mohh, S, Redzuan, O, I, & Siti, H. (2012). Human Capital Transformation through Improved Education: A Case Study in Cameron Aboriginal Community Highlands, Pahang Human Capital Transformation through Education: Case Study of the Aboriginal Community in Cameron Highlands, Pahang. Retrieved from:
http: //www.ukm.my/fep/perkem/pdf/perkemVII/PKEM2012_4D3.pdf

Fishbein, M., & Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*. New York, Taylor & Francis.

Gilligan, R. (2005). Questioning. *Journal of Computer Science*, *32*(5), 1-12.

Goodison T. (2002b). Enhancing learning with TMK at primary level.*British Journal of Educational Technology*, 33(2), 215-228.

Haryati, S., & Sharifah, M.S.M. (2009). *Transportation in the city: Issues and Solutions. Journal of Techno-Social*, 31-46.

Holland, J., & Holland, J. (2014). Implications of Shifting Technology in Education. *TechTrends,* 58(3), 16-25.

Jeynes, William H. (2002). Examining The Effects Of Parental Absence On The Academic Achievement Of Adolescents: The Chellenge Of Controlling For Family Income. *Journal of Family and Economic Issues* 23 (2).

Joo, Y. J., Lee, H. W., & Ham, Y. (2014). Integrating user interface and personal innovativeness into the TAM for mobile learning in Cyber University. *Journal of Computing in Higher Education*, *26*(2), 143-158.

Kamus Dewan. (2007). *Kamus Dewan*. Kuala Lumpur, Malaysia: Dewan Bahasa danPustaka.

Kemly, C. (2006). *Digital Divide*. Retrieved from http://vecam.org/article549.html

Kriz, K., & Qureshi, S. (2009) *The Role of Policy in the Relationship between ICT Adoption and Economic Development: A Comparative Analysis of Singapore and Malaysia.* Retrieved from
http://aisel.aisnet.org/globdev2009/13

Mcalister, M., Dunn, J., & Quinn, L. (2005). Student teachers' attitudes to and use of computers to teach Mathematics in the primary classroom. *Technology,*
Pedagogy and Education, 15(1), 77- 106.

Mohamed, Z, O. (2010). *The eradication of poverty in Malaysia: Experience of The Malaysian Amanah Ikhtiar.* Universiti Sains Malaysia Publisher. Pulau Pinang: Malaysia.

Mohd, D. A. M., & Ida, S, M, K. (2010). Crime And Social Problems Among Adolescents: Challenges and Realities in Cyber World. Retrieved from Http://Eprints.Ums.Edu.My/117/1/Conf2010004.Pdf

Mohd, Y.J. (2010). *The government provided free 1.2juta laptop for families with income <RM3000 subscribe to broadband provided by Telekom Malaysia Berhad (TM).* Retrieved from
http://zamankini.wordpress.com/2010/05/29/kerajaan-sediakan-1- 2-juta-laptop-percuma-bagi-keluarga-dengan-pendapatan-rm3000-dengan-syarat-langgan-jalur-lebar-dengan-telekom-malaysia-berhad-tm

Musa, A.H. (2010). Information and Communication Technology and community development. *IPSAS Intellectual Discourse 2010*, 22 Oktober 2010, Selangor, Malaysia.

Musa, A.H., Bahaman, A.S., & HayrolAzril, M. (2012). Usefulness of ICT Usage Among JKKK members in Peninsular Malaysia. *Asian Social Science,* 255-266.

Nayak, S.K., Thorat S.B., & Kalyankar, N.V. (2010). Reaching the unreached: A Role of ICT in Sustainable Rural Development. *International Journal of Computer Science and Information Security (IJCSIS).* Retrieved from http://sites.google.com/site/ijcsis/. 1-14.

Noor, S. (2006). ICT Management Centre for Rural Community in Peninsular Malaysia, pp: 21-26. *Inaugural Lecture Series, Technology University of Malaysia.* Skudai, Johor: UTM Press.

Norfatimah, A. (2013). *Consistent of Economic Achievements*. Retrieved from
http://www.bharian.com.my/bharian/articles/Pencapaianekonomikonsisten/Article

Owo, N.J. (2010). Gender and development: Nigeria as a case study. *Journal of Sustainable Human Development Revision, 2,* 81-91.

Roselan, B. (2003). *Teaching and Learning Method.* Shah Alam: Karisma Publications Sdn. Bhd.

Ruth, C. (2007) Exploring the ICT and Rural Poverty Reduction Link: Community Telecenters and Ruralina. The Livelihoods. *Electronic Journal of Information Systems in Developing Countries* 32(6), 1-18.

Shelly, G.B., Cashman, T. J., Gunter, R. E., & Gunter, G. A., (2004). *Teacher discovering Compters.integrating technology in the classroom.* (3rd Edition). Australia: Thomson Course Technology.

Siti, M, R. (2009). *Opportunities and challenges of education in rural communities: A case study of the Malay poor households in the districts of Bachok, Kelantan.* Master Thesis, Universiti Sains Malaysia, Penang.

Siti, M, R. (2014). *The development of information and communication technology (ICT) in rural as well as issues related.* Doctoral Thesis, Universiti Sains Malaysia, Pulau Pinang.

Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. International Journal of Human-Computer Studies, 64, 53-78.

Spector, J. M. (2013). *Foundations of educational technology: Integrative approaches and interdisciplinary perspectives*. Routledge. New York.

Suhid, A. (2005). *Perceptions of Teachers and Students in Selangor Against Conformity Distribution Components Islamic Manners and Morals in Islam Education Integrated Secondary School Curriculum.* PhD thesis, University Putra Malaysia.

The National Statistics Department of Malaysia. (2013). *Booklet Effective Development Impact: Increased Household Income and Poverty Status Descending.* National Policy Publications Division, Ministry of Information. Putrajaya, Malaysia.

Volman, M., & Van Eck, E. (2001). Gender equity and information technology in education. The second decade. *Review of Educational Research*, 71(4), 613–631.

Walsham, G. R. D., & Sahay, S. (2007).Special issue on information systems in developing countries.*MIS Quarterly,31*(2)*,* 317-326.

Williams, D., Coles, S., Wilson, K., Richardson, A., & Tuson, J. (2000). Teachers' and ICT:Current use and future needs*. British Journal of Educational Technology*, 31, 307-320.

World Youth Report. (2003). *Youth & Information and Communication Technologies (ICT).*Retrieved from http://www.un.org/esa/socdev/unyin/documents/ch12.pd

Zhao, Y. (2007). Social Studies Teachers' Perspective of Technology Integration. *Journal of Technology and Teacher Education*, 15(3), 311-333.