DOI: 10.21276/sjhss

Saudi Journal of Humanities and Social Sciences
Scholars Middle East Publishers
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

ISSN 2415-6256 (Print)
ISSN 2415-6248 (Online)

Availability of Resource Materials and Facilities for ICT Integration in the Public Primary School Curriculum in Kitui County, Kenya

Nzwili K. Mwendwa
Post Graduate Student (PhD Student), Moi University, School of Education, P.O. Box 3900, Eldoret-Kenya; 30100.

***Corresponding Author:**
Nzwili K. Mwendwa
Email: k.nzwili@gmail.com

Abstract: Throughout the world, the Information and Communications Technology (ICT) is changing the face of education. This paper is a report of a study that was carried out in the months of May and June 2016 on the availability of resources and facilities for ICT integration in the public primary school curriculum in Kitui County in Kenya. The research purpose and objective of the study was: To find out the availability of resources and facilities for ICT integration in the public primary school curriculum in Kitui County. This study was guided by the Technology Acceptance Model (TAM). It was informed by the pragmatic philosophy and the Mixed Method (MM) research approach. Data was collected from 388 public primary schools in Kitui County selected through stratified and simple random sampling methods. A total of 388 head teachers and 776 teachers participated in the study giving a total of 1114 respondents. The research instruments used were questionnaires for teachers, interview schedules for head teachers and observation checklists. The data collected was analyzed qualitatively and quantitatively. The findings revealed that most of the schools were connected to electricity but lacked ICT resources such as desk computers, whiteboards, CD-ROMs and anti-viruses. Laptops were available in some of the schools but were not being used by teachers in direct instruction. They were mainly used in the storage of school records, teacher plans, examination questions and for examination registration exercises. Another finding was lack of internet connectivity in most of the schools that affected ICT integration in the curriculum. The study recommended that the education stakeholders and the government should partner in provision of ICT resources and facilities to facilitate integration of ICT in schools. It is hoped that this study will be useful in education policy making on ICT integration in schools in Kenya and other parts of the world.
Keywords: Information, Communications and Technology (ICT), resources, facilities, ICT integration, Kenya

INTRODUCTION

This paper is a report of a study that was carried out in the months of May and June 2016 on the availability of resources and facilities for ICT integration in the public primary school curriculum in Kitui County in Kenya. Information Communication and Technologies (ICTs) are transforming world economies with an increasing number of countries, especially in the developing world, identifying ICT industry as key sector for achieving rapid economic growth and educational advancement [1]. Since the 1980's integration of ICTs in education has been compulsory in the developed nations. This is not so in developing nations such as Kenya, where ICT integration in education is considerably more recent, small-scale and experimental. It is however, recognized that adoption of computer in education has progressed, in nearly identical pattern from acquisition of basic computer skills, computer aided teaching, communications and research, to usage in every subject [1]. This has been accelerated by convergence of the computer and telecommunication technologies, particularly e-mail and internet. Whereas the impact of ICTs on the education goals is still inconclusive, reported observations include rapid expansion of knowledge, improved examination outcomes, enhanced communication and technical efficiency, as well as greater decentralization in the delivery of education services. It is not in doubt, however, that ICT has the potential to play a more powerful role in increasing resources and improving the environment for learning. Technology helps students become independent, develop research and problem solving skills and enjoy learning in general [2]. ICTs plays a role in preparing students to acquire skills, competencies and socio skills that are fundamental for competing in the emerging global 'knowledge' economy [3]. On the other hand, success in ICT integration in the school curriculum demands availability of the necessary ICT resources and facilities in schools which was the aim of this study.

BACKGROUND OF THE STUDY

Developing foundational knowledge should be essentially about creating awareness of ICT and its nature. According to Pernia [4] key competencies that can be expected of individuals who have completed a foundational knowledge course on ICT are as follows:

Familiarity with hardware such as mobile phones, computers, internet and other ICTs, ability to identify ICTs, appreciation of actual and potential functions of these technologies in everyday life, understanding basic features and uses of ICT (for instance, mobile phones; voice calls and SMS; computers: word processing, spread sheets, database, information storage; internet: web browsing, e-mail and instant messaging). There is little doubt that society's main ambition for children's use of digital technologies centres on their potential benefits for education.

ICT brings together traditionally separated educational technologies-books, telephone, television, photographs, databases, games and more. In consequence, they bridge forms of knowledge and literacy, and they intersect places of learning-home, school, work and community. But these changes pose both opportunities and challenges to schools, for to embed ICT in the educational infrastructure, teacher training, curriculum structures and materials, classroom practices and modes of assessment must be redesigned at all levels. In recent years ICT has been steadily embedded of digital and networked technologies in the classroom, with widespread use of interactive whiteboards, virtual learning environments, educational computer games, and increasing reliance on internet applications including email and e-learning for both classroom and independent study [5]. According to Mohammed and Abdulghani [2], increased implementation of technology can increase students' comprehension of content and development of skills such as analytical skills, reasoning, problem solving, information evaluation and creative thinking.

On availability of resource materials, education in Kenya requires rethinking as the country prepares to face the demands of transformations of 21st century. The first general component of ICT in teaching/learning is lack of digital equipments. According to Chigona and Chigona [6], the range of ICT digital resources required range from Electric board, Audio cassette, Radio for interactive Radio instruction (IRI), Video/TV-learning, Computer, integrated ICT infrastructure and support Application system (SAS). The major challenge in respect to this component is the limited digital equipment at virtually all levels of education. While the average access rate is one computer to 15 students in developed countries in secondary schools, while in Kenya, its one computer to 150 students in secondary schools.

In primary school section, the ratio is barely minimal, with most schools having no digital infrastructure in their schools in Kitui County. There exist a number of challenges concerning access to ICT in Kenya. This includes high levels of poverty that hinder access to ICT facilities, limited rural electrification and frequent power disruptions. Where there is availability of electricity to use for few primary schools, hindrances to application of ICT includes, high cost of internet provision, costs associated with digital equipments, inadequate infrastructure and support.

According to Daily Nation December 1, 2015 the government has implemented the Digital Learning Program (DLP). The programme is targeted at learners in all public primary schools and is aimed at integrating the use of digital technologies in defines our world and there is need to prepare our young people for today's realities. The project aims at:

(i) Entrenching ICT in teaching and learning process and management of education in primary schools,
(ii) Equipping public primary schools with appropriate ICT infrastructure to support teaching and learning process,
(iii) Developing capacity of education managers, primary school teachers and stakeholders to enable them use the wide range of ICT tools in teaching-learning process and management of schools,
(iv) Facilitating the development and accreditation of appropriate digital content that will enhance acquisition of 21st century skills,
(v) Promoting universal access and equitable distribution to ICT infrastructure in primary schools,
(vi) Integrating suitable and affordable digital programme in Kenyan education system.

The implementation of this government strategy required sufficient ICT resources in the schools which was the aim of this study. This study was centered on the availability of resources and facilities for ICT integration in the public primary school curriculum in Kitui County in Kenya.

STATEMENT OF THE PROBLEM

Despite fifty three years of independence and advancement portrayed in training of teachers in colleges for instructional process in Kenya, there has been persistent poor performance in most of the schools in Kitui County in the Kenya Certificate of Primary Education (KCPE).

Table 1 shows that between the years 2009 and 2013, primary schools in Kitui County registered poor results in KCPE examinations.

Table 1: National 5 Years (2009-2013) Performance in KCPE

Year	2009	2010	2011	2012	2013
KCPE % Mean Score	269.20	271.60	265.10	279.75	270.65

Source: KNEC Report, 2014

The percentage performance in KCPE in Kitui county was poorer when compared to the ASAL neighboring county of Machakos and the national performance as shown in Table 2.

Table 2: Comparative KCPE Mean % Scores

Year	National (%) mean score	Kitui county (%) mean score	Machakos county (%) mean score
2009	269.20	232.90	265.60
2010	271.60	232.60	273.00
2011	265.10	232.10	274.70
2012	279.75	236.00	273.00
2013	270.65	233.95	274.00

Source: Field survey Data (2014) From County Education Offices for Kitui and Machakos Counties

Due to consistent lack of teaching/learning resources, poor staffing, training of teachers on ICT, and government support in instructional process, more than 1,200 public primary schools in Kitui County have been categorized in the cadre of low performers in KCPE [7]. Unless this trend is checked, an estimated 129,000 learners in Kitui County will not achieve the expected Sustainable Development Goals (SDGs) besides entrapping in illiteracy in ICT [7, 8]. ICT integration in the school curriculum has far reaching consequences in students' achievement as discussed I the previous sections. Students can learn considerably better from a combination of both words and images (which technology enables) than merely words alone [2]. On the other hand, the integration of ICT in teaching and learning requires adequate resources which determine effective implementation. Consequently, there is need to continuously source for resources in order to be in tandem with emerging technologies. It is therefore imperative that schools be prepared with adequate resources and facilities for ICT integration in the curriculum.

RESEARCH PURPOSE AND OBJECTIVE

This study addressed the following purpose and objective: To find out the availability of resource materials and facilities for ICT integration in the public primary school curriculum in Kitui County in Kenya.

JUSTIFICATION OF THE STUDY

This study aimed at identifying the availability of resource materials and facilities for ICT integration in the public primary school curriculum in Kitui County, Kenya. Teachers in primary schools should make best utility of ICT learning resources and facilities to improve the education performance. The performance of learners in the Kenya Certificate of Primary Education (KCPE) examination is a main bridge for young pupils to proceed to secondary school education in Kenya. There has been a decline in the past decade in the academic performance of learners in the Arid and Semi Arid Lands (ASALs) in Kenya and Kitui County falls in the ASALs in question. This is worrying in that academic performance in KCPE examination accounts for progression of pupils to the next grades/levels. Primary school education forms the foundation for subsequent levels and thus the availability and use of ICT resources and facilities in the primary school curriculum determines success in secondary school level and in higher education. Adequate ICT resources and facilities in ICT integration can definitely enhance academic performance in the area.

Little research on availability of resource materials and facilities has been carried out in Kitui County yet the county is predominantly performing poorly in national examinations. This research therefore is an eye opener and will shed light on the unique challenges on ICT integration specifically on the availability of resources and facilities.

THEORETICAL FRAMEWORK

This study was based on Technology Acceptance Model (TAM) by Davis as cited in Venkatesh, Morris, Davis, & Davis [9]. This model provides an explanation about user acceptance of a technology. TAM suggests that specific behavior beliefs, perceived ease of use (EOU) and perceived usefulness (U) determine on individuals attitude towards using any new technology. Perceived usefulness is the degree to which a person believes that using a technology increase his/her performance, while perceived ease of use is the degree to which a person believes that using a technology will be free of efforts and perceived usefulness is influenced by perceived ease of use. As postulated in the TAM, usage of technology positively influences the perception towards using as well as perceived usefulness and computer self-efficacy has a significant effort on perceived ease of use. This theory was used to investigate the availability of resources and facilities for ICT integration in the public school curriculum in Kitui County in Kenya.

LITERATURE REVIEW

This section presents the literature review on availability of resource materials and facilities for ICT integration. ICT encapsulates technologies that are used

to communicate and to "capture, transmit and display data information electronically" Reynolds, [10]. According to this definition, television (TV), Radio, Overhead Projectors (OHPs), Computers, Laptops, Interactive white boards, PC tablets, PDAs and Networks all fall under ICT. In an age when education standards have been on the decline globally, scholars have argued the integration of ICT can help in revitalizing both students and teachers, Bates [11]. Technologies such as interactive whiteboards, e-conferences, educative software and education portals among others, have been proved as an essential boost to classroom activity, learning motivation and general inquisitiveness [12]. Similarly, the internet is one of the most important element that supports the use of technology in the education system [2].

The application of technology should be encouraged and even be incorporated as a routine part in students' daily activities [2]. According to The World Bank Development Report, ICT-enabled teaching and learning by "greatly facilitating the acquisition and absorption of knowledge … reducing the sense of isolation, and opening access to knowledge in ways unimaginable not long ago" World Bank, 2006. Other researchers have proposed that technology aided teaching provides curricular support to students and teachers alike, in subject areas that would otherwise be viewed as difficult [12]. It has previously been concluded that "one of the most commonly cited reasons for using ICT in the classroom has been to prepare the current generation of students for a workplace where ICT, particularly computers, the internet and related technologies, are becoming more and more ubiquitous" [13].

In Kenya, the main objectives of the Ministry of Education in its strategic plan of 2006-2011 are to integrate ICT in education. The ministry has the following strategies in order to achieve this objective (p.165-167),

1. To create awareness on the importance of ICT not only in education, but across the board.
2. To equip education institution with ICT equipments both for short-term and long term purposes.
3. To enhance the development of ICT curricula for all categories of learners.
4. To increase collaboration with other relevant Government ministry to expand network and connectivity infrastructure.
5. To reduce the cost of ICT in education.
6. To develop the capacity of education policy makers and managers.
7. To enhance working partnership with ICT.

The present study investigated on ICT integration in ASAL areas specifically in Kitui County. Ultimately, ICT can enhance teaching opportunities and outcomes for learners with intellectual disabilities [14]. Learners who integrate ICT in learning may easily understand complex topics and concepts. They are more likely to recall information and use it to solve problems in the classroom [2]. The present study is concurring with Anderson [14] and Mohammed and Abdulghani, [2] that some of the benefits of ICT integration in primary schools was the rate of learning which learners were learning especially so, to slow learners who's pace was slow and likelihood of recalling what they learned.

Availability of resources and facilities for ICT integration

According to Jebeile and Abeysekera [15], resources are substances that give help, support or comfort when needed. Facilities can include the infrastructure such as computer labs that support ICT integration in schools. ICT resources can be of various types e. g hardware and software.

Over the last five years, the Kenyan government has initiated some capital investment towards set up and installation of ICT infrastructure. Funding for these investments is achieved through partnerships between the government and development partners. The foreign funding component constitutes the largest percentage of this investment in terms of technology. The government contribution is usually in the form of technical and support staff and facilities including buildings. So far, the Government Information Technology Investment and Management Framework are connecting all ministries to the internet under the Executive Network [16]. The government is also connecting the ministries to run integrated information systems for example the Integrated Financial Management Information System (IFMIS) and the Integrated Personnel and Pensions Database (IPPD). While developing countries may have similar characteristics, the Kenyan context presents various challenges that affect the successful implementation of ICT projects.

Primary schools may not have funds to buy computers and other hardware's that may make integration possible. Ginsberg and McCormack 1998 as cited by Livingstone, Covering and Thumin [17]. Livingstone *et al* [17] conducted a survey of 1163 teachers to discern what barriers teachers encountered in using computers. The responses to their survey indicated that issues surrounding computer hardware were the most serious barriers affecting its implementation. Middleton, Flores and Knaupp [18] as cited by Sabouri *et al* 2015 viewed the hardware factors as an accessibility barrier. It involved limitations of computer laboratories and issues of scheduling computer time. Middleton, Flores & Knaupp [18] argues that computers should be situated in classroom

where they can be easily accessed by students and used in a meaningful and pragmatic way.

Suitable software for use in primary and secondary schools has been found to be an important factor in integration of computers in all schools Ginsberg & McCormack, 1998 cited by Gilakjani *et al* [19]. Ginsberg and McCormack stated that teachers' issues and potential barriers to implementation of computers are software resources related. These are matching courseware to curriculum, evaluation, and quality control, acquisition, setting priorities, security, placement and appropriate use. There may be a lack of appropriate software that is appropriate for specific applications. Similarly, the present study investigated on availability of both hardware and software resources in schools under study in Kitui County and found that most schools had no software and hardware resources.

The Kenyan government should take caution and consider attempts to avail educational software to schools include not seeing the issue in terms of availing hardware alone, what software will be availed, the educational content of the software, scarcity of digitized content relevant to approved curriculum, and development of software that can extract content from school textbooks.

Hepburn [20] enumerates hindrances' of using proprietary software as high cost, restrictions on flexibility of use due to licensing constraints, and ethical and social issues including equity and the moral of exposing students to and training them on particular companies' software while the students pay the proprietary companies to do so. If a similar approach is made possible for educational software content development, the pool of developers, development, and continuity potentially is unlimited since this approach opens up the software to a large community to become involved in the development effort, allowing rapid bug fixes and enhancements to occur. The potential developers of interest here are students, teachers, lecturers, educational resource persons and other interested developers.

The ICT resources and facilities that were being investigated in this study included electricity, laptops, desk computers, white boards, printers, Wi-Fi, scanners, modems, digital cameras, floppy disks, mouses, key boards, CPU's, CD-ROMs and projectors.

RESEARCH DESIGN AND METHODOLOGY

According to De Vaus [21] research design is the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, thereby, ensuring that the research problem is effectively addressed. It constitutes the blueprint for the collection, measurement, and analysis of data. In this study, descriptive survey design was used and it directly combined the procedures and events in the study. The survey research design was selected because it provides to the researcher the components and characteristics that were viable in this study. Creswell, [22] states that survey research design provides a media and a platform for the researcher to collect data from members of a population in order to determine the current status of the population with respect to the dependent variable(s), and in this study, it was "Availability of resources and facilities for ICT integration in the primary school curriculum in Kitui County, Kenya".

The Mixed Methods research approach was used in this study. According to Creswell [22], the paradigm of mixed method design (MM) accurately measures specific construct, has capacity to conduct group comparisons and capacity to examine strength of association between variables of interest and the capacity for model specification and the testing of research hypothesis.

Sample size and sampling methods

A total of 388 head teachers and 776 teachers participated in the study. This sample was drawn from 388 public primary schools in the County that were selected through stratified and simple random sampling methods. The head teachers were purposively selected while the teachers were selected through simple random sampling method.

Research Instruments

The data collection instruments used in this study were: Structured questionnaires for the teachers and interview guides for the head teachers. An Observation checklist was also used to observe the already available ICT resources in the schools.

RESEARCH FINDINGS

Availability of Resources and Facilities for ICT integration

The findings indicated that the most schools had electricity. Table 1 shows the resources and facilities that were available in the schools as revealed by teachers.

The results in the table-1 indicated most of the schools lacked the required resources and facilities for ICT integration in the curriculum such as laptops, desk computers, white boards, printers, Wi-Fi, scanners, modems, digital cameras, floppy disks, mouses, key boards, CPU's, CD-ROMs and projectors.

Through interview schedules, the head teachers revealed that the few available laptops in the

schools were used for other purposes rather than direct instruction. For instance, one head teacher reported that:

> '*I use a laptop to prepare schemes of work, to down load educational materials, to make time tables and to save school minutes. I also use it to register students for national examinations and as an examination bank"*

Another head teacher said:

> *"I use my laptop to keep minutes and to save school records such as schemes of work templates".*

A checklist on the availability and adequacy of various resources materials indicated that most schools lacked resources such as laptops/computers, white boards, printers, Wi-Fi, scanners, modems, digital cameras, floppy discs, mouse, keyboards, CPUs, CD ROMs, projectors and antivirus. However, some few schools had some of these resources although they were inadequate.

These findings reveal that most schools in Kitui County lacked the required resources and facilities for ICT integration in the curriculum.

Table 3: Availability of ICT resources and facilities

Resources/Facilities		Adequate		Inadequate		Not available		Total
		F	%	F	%	F	%	
(i)	Laptops	0	0	30	3.9	746	96.1	776 (100%)
(ii)	Desk computers	0	0	0	0	776	100	776 (100%)
(iii)	Whiteboards	0	0	0	0	776	100	776 (100%)
(iv)	Printers	0	0	0	0	776	100	776 (100%)
(v)	Wi-Fi	0	0	0	0	776	100	776 (100%)
(vi)	Scanners	0	0	0	0	776	100	776 (100%)
(vii)	Modems	0	0	0	0	776	100	776 (100%)
(viii)	Digital cameras	0	0	54	6.9	722	93.1	776 (100%)
(ix)	Floppy disks	0	0	36	4.6	740	95.4	776 (100%)
(x)	Mouse	0	0	0	0	776	100	776 (100%)
(xi)	Keyboards	0	0	0	0	776	100	776 (100%)
(xii)	CPU	0	0	0	0	776	100	776 (100%)
(xiii)	CD-ROMs	0	0	0	0	776	100	776 (100%)
(xiv)	Projectors	0	0	0	0	776	100	776 (100%)
(xv)	Anti-virus	0	0	12	1.5	764	98.5	776 (100%)

CONCLUSIONS

This study investigated the availability of resources and facilities for ICT integration in the primary school curriculum in Kitui County in Kenya. The findings indicated that most schools were connected to electricity. However, majority of the schools lacked ICT resources such as laptops, computers, whiteboards, CD-ROMs and anti-viruses. One of the main problems affecting ICT integration in the schools in the County is the lack of internet connectivity in the schools. Laptops were available in some of the schools but were not being used by teachers in direct instruction. They were mainly used in the storage of school records, teacher plans, examination questions and for examination registration exercises.

RECOMMENDATIONS

From the research findings and the conclusions the study recommended that the school community and the government should partner in provision of ICT resources to facilitate integration of ICT in the primary school curriculum in the schools. The vision of the Government of Kenya is to facilitate ICT as a universal tool for education in schools. In order to achieve this vision, all schools require adequate resources and facilities for ICT integration in the curriculum.

REFERENCES

1. Balanskat, A., Blamire, R., & Kafal, S. (2007). A review of studies of ICT impact on schools in Europe. *European School net.*
2. Mohammed, T. A., & Abuldughani, A. A. (2017). Impact of students' use of technology on their learning achievements in physiological courses at the University of Damman. *Journal of Taibah, University Medical Sciences, 12* (1), 82-85.
3. Cuban, L. (2002). Computers in the classroom. Cambridge Massachusetts: Harvard University press.
4. Pernia, E. E. (2008). Strategy framework for promoting ict literacy in the Asia-Pacific region. publication of UNESCO Bangkok communication and information unit. *Asia and Pacific Regional Bureau for Education, Bangkok 10110, Thailand*. Accessed July 14, 2007 from http://portal.unesco.org/ci/en/ev.php-

5. Sheard, J., Carbone, A., Markham, S., Hurst, J., Casey, D., & Avram, C. (2007). Performance and progression of first year ICT students. Paper presented at the Tenth *Australasian Computing Education Conference (ACE2008).* Wollongong, Australia.
6. Chigona, A., & Chigona, W. (2010). An investigation of factors affecting the use of ICT for teaching in Western Cape schools. *18th European conference on information systems.*
7. Kenya National Examination Council (KNEC). (2013). KCPE Results for 2013. Nairobi. KNEC
8. Wozney, L., Venkatesh, V., & Abrami, P. C. (2006). Implementing computer technologies: Teachers' perceptions and practices. *Journal of Technology, Teaching and Education, 14* (1), 173-207.
9. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2000). User acceptance of information technology: Toward a unified view. *Management Science, 46*(2), 425-478.
10. Reynolds, R. (2001). New models of learning for new media: Observations of young people learning digital design. (Opladen, V.S Vergla for sozialwissenschaften). Pp 127-144.
11. Bates, A. (2000). Managing Technology changes: Strategies for University and College leaders. Francisco: Jossey Bass.
12. Gulbahar, Y. (2007). Technology planning: A roadmap to successful technology integration in Schools. *Computers & Education*, *49*(4), 943-956.
13. Tinio, V. (2003). "ICT in Education. ICT for Development, Bureau for Development Policy" United Nations Development Programme, New York. 2003. Available at http://www.saigontre.com/FDFiles/ICT_in_Education.PDF
14. Anderson, L., & Pellicer, L. (2009). Towards an understanding of unusually successful programs for economically disadvantaged students. *Journal of education for students placed at a risk, 3* (3), 237-263.
15. Jebeile, S. H., & Abeysekera, I. (2010).The spread of ICT innovation in Accounting Education. *International Journal of teaching and learning in higher education, 22* (2), 158-168.
16. Limo, A. (2003). Computer use bound to transform Kenya [Homepage of Nation Media Group],[Online].Available: http://www.nationaudio.com/News/DailyNation/24122003/Comment/Comment241220031.html [10.01. 2004].
17. Livingstone, S., Covering, E., & Thumin, N. (2015). Covering traditions of research on media and information literacies, disciplinary, critical and methodological issues. *The London school of Economics and Political Science, 3*(2),103-132.
18. Middleton, A. J., Flores, A., & Knaupp, J. (1997). Shopping for technology. *Educational leadership, 53* (3). http://www.ascd.org/pubs/el/nov97/exmiddle.html. Downloaded on 12thJune 2008.
19. Gilakjani, P. A., Sabouri, B. N., Zabihniaemran, A. (2015). What are the barriers in the use of computer Technology in EFLL instruction? *Review of European studies, 7*(10), 173-181.
20. Hepburn, G. (2005). Open Source Software and Schools: New Opportunities and Directions. *Canadian Journal of Learning and Technology, 31*(1).
21. De Vaus, D. A. (2001). Research Design in Social Research. London: Sage.
22. Creswell, J. W. (2004). *Qualitative inquiry and research design*: Choosing among five traditions. Thousand Oaks, CA: Sage Publications.