Teachers' Readiness in the Use of ICT in Improving Teaching and Learning in the Democratic Republic of Congo: A Case Study of Marist Secondary Schools

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Abstract

The study investigated teachers' readiness to acquire and utilise ICT in improving teaching and learning in schools in the Democratic Republic of Congo (DRC). The study used survey research design and collected quantitative data from 49 teachers sampled using both simple random sampling and purposive sampling from a target population of 367 teachers in six Marist secondary schools located in three provinces of South Kivu, Tshopo and Kinshasa in DRC. Data was collected using a questionnaire, and analysed with SPSS to establish both descriptive and inferential findings. The findings revealed that the teachers had moderate skills in ICT and that there is need for training of teachers to support ICT implementation in secondary schools. The study also established that the respondents were ready to acquire personal laptops, and improve their knowledge and skills as teachers at personal cost. The study recommends that there is need for the Ministry of Education to formulate a policy as a foundation of ICT adoption. It also recommends that principals need to provide leadership in their own schools or collectively to enhance the use of ICT in teaching and learning in Marist schools and in the DRC in general.

Keywords- E-readiness**,** Teachers, ICT, teaching and learning, secondary schools, Democratic Republic of Congo, Africa, Teacher training.

Paper Type- Research paper

Introduction

Information and communication technology (ICT) has become crucial to all business organizations around the world today and therefore no institution, including the education sector can ignore it (Ghaviferkr, Kunjappan, Ramasamy and Anthony (2015). From the time ICT was introduced in education in the 1980s to date, educationists believe that ICT can play a crucial in the sector. The use of ICT in education according to policy-makers is an important innovation in classroom teaching (Mirzajani, Mahmud, Ayub and Wong 2016). With its capacity to provide proactive, easy access and more comprehensive teaching and learning resources, ICT has brought positive revolution in the teaching and learning in the 20th century (Ghaviferk & Rosdy, 2015).

According to Semenov (2005) profound changes can be made in the entire educational system if digital technologies are integrated in schools. Although nothing

can replace a good teacher (UNESCO 2014), innovation in education enhanced by new technologies has become a central issue in the agenda of many countries around the world (Cifuentes 2015). ICT in education can play an important role in pupils' learning. When used appropriately ICT helps promote independent learning, provide pupils with immediate feedback, giving easy access to information and offering skills for further education or employment (Reeve, 2014).

Education sector being the most important institution in preparing young people for life has no excuse but to include ICT in teaching and learning. This was highlighted by UNESCO (2002) in asserting that educational systems around the world are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. Generally, ICT has high innovative potential in teaching and learning mainly in documentation, as a pedagogical and administrative tool.

However, this technological development especially ICT is still unclear in education in DRC. On the ICT Development index 2017, DRC was ranked 171 globally and 33 in Africa region (ICTUdata, 2017) in spite of being endowed with immense resources including raw material for the manufacture of ICT hardware (Audu 2018). Poor ICT being one of the major challenges facing the DRC, there is need for research in order to understand the situation better as the basis strategy to improve the e-readiness in the education sector. Government, agents, donors, or benefactors play an important part in ICT development but it is important to appreciate the role of secondary school teachers about ICT implementation in teaching and learning o. This is the focus of this study.

Statement of the problem

Poor internet infrastructure is one of the major barriers to development in general and competiveness in particular in the Africa including the DRC. A study conducted by Kazadi, Joseph and Patel (2013) concluded that DRC was still lagging behind in ICT for development in the areas such as health, education and agriculture. At the same time adoption of ICT is viewed as the key to the transformation of education globally in line with the requirements of the 21st century. Indeed, one of the priorities of education as stated by the national education in DRC is to enable the young people to acquire ICT skills (Government of DRC, 2006).

However, a review of literature indicates that limited research has been done on the extent of ICT development in the country and therefore there is limited information which can be the basis for a sound national strategy on ICT in the country. A number of studies have highlighted the challenges facing the development of ICT in the DRC. For example, a study conducted by Kabongo (2014) on ICT possession among Congolese SMEs revealed that ICT in the country is mainly used in telecommunication and that 51% of the SMEs were using a mobile phone while only 3% had a web site. Other studies conducted in the DRC by Fatoumata (2016) revealed the poor skills in ICT among lecturers and students. These studies have raised concern about the extent to which various stakeholders in the education sectors are ready to adopt ICT in teaching and the challenges they face (Fall, 2007; Ngoma, 2010). Therefore the purpose of this study was to investigate the readiness of secondary school teachers to adopt ICT implementation in teaching and learning.

Research questions

This study was guided by six research questions namely:-

i. What are the ICT skills of teachers in Marist secondary schools?
ii. What is the teachers' priority in the implementation of ICT in teaching and learning in Marist secondary school?
iii. What is the type of ICT tool that teachers prefer most for the implementation?
iv. What are the specifications that teachers look for in selecting ICT tools ?
v. What is the estimated budget that teachers are ready freely to spend on a personal ICT tool?
vi. What is the perceived usefulness of an ICT tool for teachers in the Marist schools.

Review of empirical studies

Perceptions towards the role of ICT in education

One of the key factors in the adoption of ICT is the perception of the stakeholders on its role teaching and learning (David, 1986; Chuttur, 2009). Other factors that affect the adoption of ICT are personal characteristics that have been found to influence the adoption of a new technology included educational level, age, gender, educational experience, the familiarity with the computer in educational field, and attitude towards computers (Ncube & Shabalala, 2014). According to Jones (2001) in particular teachers are implored to adopt and integrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICT into teaching defines the effective use of the technology in the classroom.

A study was conducted by Simin, Kunjappan, Ramasamy and Anneetha (2016) on teaching and learning with ICT tools in Malaysia revealed that more that 50% of the teachers have a positive perception of ICT adoption in improving education. The teachers believed that ICT can help student concentrate in their learning, student feel more independent in their learning, they comprehend more easily, recall more easily, facilitate cooperation between students and ICT betters the class climate. However, this study only focused on teachers and put aside the head teachers and the students who are important agents of change and motivation in the school.

Another study carried by Sultan and Ahmed (2015) in Saudi Arabia conducted on ICT directors, headmasters, teachers and students revealed a positive attitude from all participants towards integrating ICT tools in education, making them argue that the positive views encompass most matters and could assist ICT application in the institution. The results of this study showed that ICT was perceived as an important tool in improving performance, collaboration, learning experience and learning outcomes and the need to improve student attitudes towards ICT as a learning tool and using internet for educational purposes as identified by ICT directors, headmasters and teachers is crucial.

The findings of a study conducted by Uyouko and Wong (2015) on teachers' cultural perception of ICT in Nigeria school revealed that although teachers held positive views about ICT use, they were discouraged by inadequate ICT facilities and limited access to computers in schools. Another study was conducted by Wanjala (2013) on the perceptions of the use of ICT in the administration of public secondary schools in Kimilili District, Bungoma County, Kenya. It found out that teachers were very enthusiastic and positive about using ICT in administration. They

perceived using computers reduces time wastage, enhance their job performance and job satisfaction. Effect of using ICT tools for administration in secondary schools according to teachers in the study, were found to reduce time spent on routine tasks, improved communication and improved quality of reports. Head teachers indicated that, the main effects of using ICT were accurate and faster preparation of reports, improved performance of school administrative tasks, time saving and convenience.

Nyakowa (2014) also analysed the factors influencing ICT adoption among public secondary teachers in Webuye Sub-county of Bungoma County in Kenya. The findings of this study revealed that respondents believed that there was to some extend a positive impact on the use of ICT during the lesson.

Another study carried by Fatoumata (2016) in DRC at the National University of Pedagogy in Kinshasa revealed that 61% of the participant believed that ICT means simply Internet which indicated how ICT was still misunderstood and ignored in education in DRC Leya (2015) did a study targeting the university lecturers at the National University of Pedagogy in Kinshasa DRC which revealed that only 10% believed that ICT was pedagogical tool and 13% of respondents confirmed to have never used any ICT services at all. The study further indicated that, only 43% used ICT in their daily work among the respondents.

Knowledge and skills for ICT in Teaching and Learning

The ability to use computers effectively has become an essential part of the educational skills and knowledge in our modern time. Skills such as bookkeeping, clerical and administrative work, stocktaking, and so forth, now constitute a set of computerized practices that form the core IT skills package namely: spreadsheets, word processors, and databases (Reffell & Whitworth, 2002).

Actually nobody will claim to be a scholar and at the same time being ICT illiterate. The needs for technological knowledge have been presented by Koehler and Mishra (2003) in the TPACK frame work. It highlights very well the relationship between the three basic elements that are involved in the process of adoption of ICT in teaching and learning. Teaching with ICT involves using various technological tools, and henceforth it necessitates specific knowledge adapted to it. ICT knowledge and skills is one of factors that affect its adoption in teaching and learning as some various studies have shown. The World Bank (2018) in its report insisted on the importance of getting ICT skills to fully incorporate ICT in education stating that technology is about much more than giving computers to students. ICT interventions include a wide range of technological monitoring and information systems at all levels of education, from individual students to education systems.

In this way, ICT knowledge and skills are very essential for its adoption in teaching and learning. Sandholtz and Reilly (2004) as cited by Ncube and Tshabalala (2014) argued that teachers' technology skills are strong determinants of ICT integration. For Harrison (2010) qualified teachers are often considered as a promoter in the adoption and effective use of technology in schools. He noticed that in many African countries, untrained teachers and the low levels of teachers' ICT knowledge and skills have been identified as main barriers to introduce ICT effectively into schools.

A study carried out by Mafuranga and Moreni (2017) on the use of ICT in English language teaching in selected secondary schools in Botswana indicated that

there was ICT ignorance among teachers. The findings revealed that majority of teachers thought ICT was the computer which showed lack of knowledge on various ICT gadgets and tools available which could add variety to classroom contexts.

An investigation on the extent to which school administration and teaching and learning are promoted through the use of ICT in Ghana Basic School Natia and Seidu (2015) revealed that despite teachers' access to ICT tools, such as computers, the ability to use them to teach was weak. The study suggested that capacity of teachers to effectively deliver in ICT was low because of lack of regular training and poor internet access to research.

Similarly, in the analysis of the technological factors influencing adoption of ICT in public secondary school in Kenya, Gakenga, Gikandi and Kamau (2015) discovered from their findings that 53% of the respondents indicated that their school teachers were lacking ICT knowledge and skills, competent enough to adopt use of ICT teaching while 25% of the respondent opined that teachers had knowledge and skills useful in adoption of ICT in teaching.

Another study conducted by Tanui (2013) on the Principal's role in Promoting use and Integration of ICT in public secondary schools in Wareng Sub-County Kenya revealed that although most public secondary schools in Wareng sub-county had basic ICT hardware and software resources, majority of principals hardly used computers making them weak examples to the rest of the school community. Low ICT literacy levels among teachers and students, weak schools' ICT policies and absence of clarified roles for principals, technophobia, inadequate computer studies, teachers and principals' low levels of ICT skills were among the challenges disclosed by the research

School Infrastructures and Availability of ICT Tools

One might have the knowledge and skills but the availability of both the infrastructures and ICT devices will matter a lot in the implementation of the program. Adopting ICT in teaching and learning will highly depend on the availability of ICT tools and equipments. A study conducted by Ghaviferkr and Rosdy (2015) on *Teaching and learning with technology: effectiveness of ICT integration in Schools in Malay*sia revealed that, when teachers were well equipped with ICT tools and facilities would attribute to one of the main factors for successful adoption of technology in teaching and learning.

Similar findings had been noted by Wachiuri (2015) in the study carried in Kenya on the effect of teachers' experience and training on implementation of information and Communication Technology in Public Secondary schools in Nyeri, Central District. The researcher recommended that Public secondary school should find a way to purchase more ICT facilities and support teachers' training on the use of ICT. In a similar study carried in DRC by Ngoma (2010) it was found that electricity and ICT devices are either too expensive or inexistent, making ICT implementation difficult or even impossible.

The issues of ICT facilities in improving teaching and learning was also confirmed by the study done by Kisirkoi (2015) in one school in Kenya which provide fully ICT and has incorporated it in the curriculum instruction. The findings disclosed that the mean score of the school increased from 6.2 to 8.4 from 2007 to 2013. Although this success could not be attributed to ICT factor only, all

the teachers and students had access to ICT tools and all were computer literate. Teachers also had confidence to test new methodologies in their teaching.

In this study, questionnaires were complemented by observation check list and interview guide to shade more light on the role of ICT tools used by principal, teachers and student in their administrative and teaching and learning activities. It looked at ICT tools in a large perspective with current multiple devices available in our modern time. Similar attention looked at the variety of energy sources including solar and generators to respond to the electricity challenge that have been pointed out by previous researchers in DRC. Exploring the available ICT alternative tools that can be adopted in MSS was part of this section in the study. Technology evolves every day and one has to select among devices produced every time in the market that can fit in the Institutional or personal situation in which he is working. While studying the available ICT devices, it is good to consider multiple factors that can enhance or hinder the adoption of these tools that are more practicable, with easy access and more useful as expressed in TAM.

Challenges in ICT Adoption in Teaching and Learning

Due to ICT's importance in society as well as in the future of education, identifying the possible challenges to integrating these technologies in schools would be of important for innovating the teaching and learning process in school setting (Ghavifekr, Kunjappan, Ramasamy, & Anthony, n.d). Challenges facing the adoption or the integration of ICT in teaching and learning have been well documented by various authors, depending on various factors. Some of the challenges seemed to be the resistance to change while other focus on the lack of infrastructures or poor skills. As Semenov (2005) stated, change is a process, not an event. Just buying and installing hardware and software is not sufficient to make ICT into a genuine education technology. Adoption of any program especially when it needed financial resources and intellectual skills has not been without challenges that various research studies had pointed out.

A study done by Karsenti, Collin and Merrett (2012) in thirteen African countries involving various schools in each country, the researchers were interested in finding out the pedagogical integration of ICT, its success and challenges. Analysis came out with the conclusion that, ICT integration into African education and professional training systems comes with some of challenges that must be taken into account. In this regard, the researcher classified the ICT challenges from the findings into four categories including infrastructure challenges (power outage, internet blackout), technological (insufficient, inadequate and outdated computer equipment), human challenge (lack of techno-pedagogical skills in teachers and training) and financial (lack of permanent funding for pedagogical ICT integration). From this Pan African study it was revealed that ICT in education in African is difficult, and has led different perception on the topic.

A study, carried by Ncube and Tshabalala (2014) in an Investigation into *Challenges Faced by Secondary School Teachers in Integrating Internet* into the teaching and learning process in Zimbabwe Harare Province revealed that most of the teachers had negative attitudes for the use of internet in the classroom, there was lack of professional development among the teachers, and the schools did not provide adequate leadership support and technical support to teachers.

These challenges had been analysed before by UNESCO (2002) when it came with the suggestion that, to plan for ICT to improve learning, three crucial conditions must be met. These are the provision of sufficient access to digital technologies and the internet in the learning environment, effective and reliable digital instructional content to both instructors and students, and knowledge and skill for the teachers allowing them to utilise the new to use the new digital material and resources to help all learners acquire high academic standards.

Muthevula and Uwizeyimana (2014) carried a study that analysed the impact of ICT equipment availability and accessibility and teachers' training in ICT use on the integration of ICT into the curriculum related activities by teachers in South Africa. The study highlighted that there was scarcity of ICT tools in general to implement ICT in schools. This had affected most of the teachers in the teaching process due to the lack or insufficient ICT tools.

Research Methodology

This paper is based on a survey on teachers' readiness in the acquisition and use of ICT in improving teaching and learning in in the Democratic Republic of Congo with a special focus on Marist Secondary Schools. Data was collected and analysed quantitatively, targeting 378 teachers from six secondary schools located in both urban and rural areas in three different provinces of South Kivu, Tshopo and Kinshasa in the DRC. A sample of 49 teachers was selected through purposive and random sampling technic. The participants responded to a questionnaire that was distributed in a same period of time, filled by the participants and collected by the researcher himself. Data were analysed using SPSS version 23 and distractive and inferential results from the findings were summarized and presented in tables.

The study was guided by the Technology Acceptance model (TAM) developed by Davis (1989). Korpelainen (2011) and David (1989) presented a theoretical model aiming to predict and explain ICT usage behaviour that is what causes potential adopters to accept or reject the use of Information Technology. The two key component of the TAM, the perceived usefulness and the perceived ease of use of technology in a system were fundamental to the study. The proponent of this theory adds that, perceived usefulness is to be understood as the level to which a person is convinced that by using a given system, service or tool would render his or her work better, in normal sense in teaching and learning teachers would adopt ICT to the extent they perceived it to improve their profession as teachers. The perceived ease of use is that conviction that by using a particular technology, service or tool, the daily routings would be much easier. By implication, this is to say that by using ICT tools, will facilitate the work load of teachers in accessing to teaching material, in scheme of work and lesson plan preparation, in instruction delivery in the classroom, in processing students reports and in communication with both students and staff among others.

Findings and Discussions

What are the ICT skills of teachers in Marist secondary schools?

The first research question sought to investigate the current ICT skills among the respondents. This aimed at understanding the ICT reality among teachers in order to inform ICT planners and policy makers on the matter in secondary schools in DRC. Data was collected from respondents who were asked to make a self assessment

of their ICT skills. Data was analysed and is presented in Table 1 below:

Skills Items	Advanced	Good	Moderate	Poor	NS	
	F %	F %	F %	F %	F %	Mean
My general knowledge and skills about computers	11 (22.4)	(14) 28.6	6(12.2)	12(24.5)	6(12.2)	3.24
Starting and closing the computer	18(36.7)	10(20.4)	7(14.3)	6(12.3)	8(16.3)	3.49
My knowledge and skills in other devices close to the computer	13(26.5)	9(18.4)	9(18.4)	14(28.6)	4(8.2)	3.27
My knowledge and skills in Microsoft windows or other operating systems	8(16.3)	15(30.6)	6(12.2)	9(18.4)	11(22.4)	3.00
My skills in Microsoft word programme	8(16.3)	13(26.5)	9(18.4)	9(18.4)	10(20.4)	3.00
My skills in Microsoft excel	4(8.2)	11(22.4)	6(12.2)	13(26.5)	15(30.6)	2.51
My skills in Microsoft power-point programme	5(10.2)	7(10.2)	5(14.3)	13(26.5)	19(38.8)	2.31
My skills in fixing some computer problems and other devices	4(8.2)	7(14.3)	8(16.3)	16(32.7)	14(28.6)	2.41
My skills in ICT use in teaching and learning	6(12.2)	11(22.4)	4(8.2)	14(28.6)	14(28.6)	2.61
My skills to use computer for my lesson plan and scheme of work preparation	8(16.3)	11(22.4)	7(14.3)	8(16.3)	15(30.6)	2.78
My skills to use internet for documentation for lesson preparation	10(20.4)	11(22.4)	8(16.3)	10(20.4)	10(20.4)	3.02
My skills to share notes, photos, videos, with my students by email, whatsup…	9(18.4)	9(18.4)	8(16.3)	9(18.4)	14(28.6)	2.80

	N	Minimum	Maximum	Mean	Std. Deviation
ICT Skills	49	1.00	5.00	2.8690	1.21383
Valid N	49				

Table 1: Teachers mean score in ICT skills (n=49)

The data presented in Table 1 indicates that most of the teachers had good skills in two items including skills to open and close a computer (57%) and the general knowledge and skills about computer (51%). The respondents had varied levels of competence on majority of the items including skills in Microsoft windows and operating systems with 47% of those who had at least good skills alongside 40% of those with very poor skills in computer operating systems, similar to knowledge and skills in other ICT devices close to a computer with 45% of those with at least good skill against 37% with poor skills. Skills in Microsoft word programme recorded 43% of the teachers having at least good skills against 39% poorly skilled in such important programme for education. Similar result was reported in the ability to use internet for documentation during lessons preparation with 43% of the respondents who had at least good skills and 41% who are unable to use properly the internet facility for educational purposes.

It was noticeable that another 47 % were poorly skilled in sharing notes, photos, videos with students by mail, social media platform as well as in the use of computer for lesson plan and scheme of work preparation. The majority of teachers had poor and even no skills at all on various ICT areas including skills in Microsoft PowerPoint (65%), skills in fixing some computer problems and other ICT devices (61%), skills in Microsoft excel (57%), and skill in ICT use in teaching and learning (57%)

The mean score for teachers' ICT skills was 2.7, which suggested that majority of teachers have moderate skills in ICT. The moderate skills are a sign that

teachers have the basis for ICT implementation in the institution under study. If given opportunity for training in ICT, they can improve the existing skills and use them in implementing educational ICT in the secondary school in DRC. Further analysis captured the relationship between teachers' ICT skill, age and academic qualification through a Pearson correlation. These findings were summarised in Table 2.

Table 2- Pearson correlation between teachers ICT skills, age and academic qualification

		Teachers academic qualification	Teacher age	ICT Skills
ICT skills	Pearson Correlation Sig. (2-tailed) N	.317* .027 49	-.378** .007 49	1 49

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The findings in Table 2 revealed that there is a significant statistical relationship between teachers' ICT skills and teachers' academic qualification. The PCV (0.317, N=49, p<0.05), proved statistically that teachers' skills were positively correlated with their academic qualifications. This means that higher degree holders were the most skilled in ICT. It is correct to say that teacher training for higher academic qualification will improve their skills in ICT. The reality is that the more a teacher stays in university for higher degree the more he/she is exposed to ICT and hence improves ICT skills.

In addition to this, the findings disclosed that there was a statistical relationship between teachers' ICT skills and their age with PCV (-0.378, N=49, p<0.01) this value suggest that there is a negative correlation between teachers age and ICT skills. In other words, young teachers are more skilled in ICT than their elders. It suggests two possible realities than experienced teachers are not interested in the new technologies for teaching and learning or to be more positive let say that young teachers are more interested the booming new technologies including ICT. It also suggests that universities nowadays are exposing the new generation to ICT. Hence, there is hope that ICT can gain its way in teaching and learning through young teachers who are more interested and ready to embrace it for teaching and learning.

What is the teachers' priority in the implementation of ICT in teaching and learning in Marist secondary school?

The second research question sought to investigate teachers' priority in the implementation of ICT in teaching and learning in Marist secondary school. Data was collected on this issue and the findings are summarized in Table 3

Table 3: Teachers priority in ICT implementation in teaching and learning (n=49)

Statement/Response	Frequency	Percent
Set a computer lab for the school	13	26.5
Teachers to have personal computers	11	22.4
Training of teachers in ICT	22	44.9
Purchase of courses softwares	1	2.0
Develop a digitalized curriculum and academic content	2	4.1
Total	**49**	**100.0**

The findings revealed that in the process of ICT implementation in teaching and learning in secondary school in DRC, teachers training remained the first priority with 45% of the participants, followed by 27% of those who upheld that the establishment of a computer lab for students should start first. Another 22% believed that teachers should get first their personal computers and digital curriculum and courses softwares came last. Training in ICT had already been suggested by Kazadi, Joseph and Patel, (2013) in their comparison study on ICT initiatives in South Africa and DRC, opining that just reducing costs of ICTs was not enough in the implementation of ICT in DRC. This finding implies that investments in the ICT infrastructure and resources and training the people in DRC to utilize ICTs is crucial for DRC's development and that ICT training for teachers training the foundation to promote ICT use in the teaching process especially in the classroom.

What is the type of ICT tool that teachers prefer most for the implementation?

The third research question sought to investigate type of ICT tool that teachers prefer most for the implementation of ICT for teaching and learning. Data was collected on the views of teachers on this issue, which is presented in Table 4.

Table 4: Teachers' preferred ICT tool for professional development (n=49)

	Frequency	Percent
Desktop	1	2.0
Laptop	32	65.3
Mini laptop	9	18.4
Tablet	3	6.1
Smartphone	4	8.2
Total	**49**	**100.0**

The findings indicate that laptop as most preferred ICT tool among (67%) of the teachers, followed by the mini-laptops which selected by 18% of the respondents. The smartphone was the third most preferred ICT gadget (8%) while desktops were the least tool (6%) for teaching and learning in the study. It was clear that teachers were ready to adopt laptops for teaching. They are indeed personal and practical for both various teaching and learning activities. Each teacher can control personally the electricity challenge at personal level and hence use the tool in his/her own teaching needs.
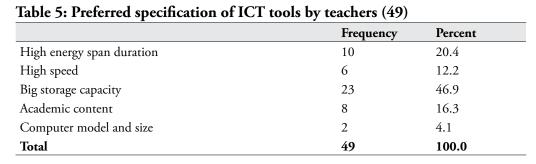
What is the specifications that teachers for in selecting ICT tools?

The selection of an ICT tool of choice is not easy exercise when it comes to the specifications. To satisfy the need of consumers and remain in the global market, manufacturers in ICT have a very big challenge with the daily changing technology, new competitors and manufacturers. In this sense then, the study collected opinions of teachers on the criteria of the ICT tools they would like to use in the ICT implementation process focussing mainly on the energy span, the computer speed, storage capacity, the softwares and the model of computer. Teachers' views in this matter were collected and are summarized in Table 5.

Table 5: Preferred specification of ICT tools by teachers (49)

	Frequency	Percent
High energy span duration	10	20.4
High speed	6	12.2
Big storage capacity	23	46.9
Academic content	8	16.3
Computer model and size	2	4.1
Total	**49**	**100.0**

Findings in Table 5 indicate that storage capacity could influence 47% of the teachers in their choices of an ICT tool for teaching and learning followed by high energy span duration preferred by 20% of the respondents. Academic content was the priority of 16% of the teachers followed by high speed 12% while the model or size of the computer was the least factor in the choice of ICT gadget by the teachers with only 4% of the respondents preferring it. Teachers could prefer the bigger hard disc probably for the reason of storing more academic content for teaching. If digital educational content could be provided and training programmes for the teachers provided by DRC government as promised during the official launch of the programme 'Strengthening national capacity for training on the job in the Democratic Republic of the Congo' (UNESCO 2014), hence a big capacity storage laptop could indeed overcome the lack of library and documentation for teaching. Electronic material being easier to curry and share could enable teachers to develop personal digital content relevant to their teaching subject ad for their personal development.

What is the estimated budget that teachers are ready to freely to spend on a personal ICT tool?

Several studies on the implementation of ICT in DRC including Fall (2007), Ngoma (2010), Kazadi, Joseph and Patel (2013) have pointed out the high cost of ICT tools as one of the challenging faced by the implementation of ICT in DRC in general and in education in particular. Data was collected on the views of the teachers on the amount of money they personally could spend to purchase a personal ICT tool. This data was analyzed and is summarised Table 6.

Table 6: Estimated personal budget for teachers on ICT tools for teaching profession (n=49)

	Frequency	Percent
Between 50-100 US dollars	4	8.2
between 101-150 US dollars	7	14.3
Between 151-200 US dollars	8	16.3
Between 201-250 US dollars	12	24.5
Above 250 dollars	18	36.7
Total	**49**	**100.0**

The findings disclosed that 37% of the teachers were ready to spend more than 250$ on an ICT tool, while another 25% could go for tools costing not beyond 250$ but above 200$. Another 16% indicated that they only spend up to 200$, while 14% others could reach a maximum budget of 150 while the was 8% off teachers who cannot spend much that 100$ for an ICT tool. It was therefore important to notice that majority of teachers 61% were ready to spend a minimum of 200$. This is a positive sign of teachers will equip themselves in ICT tools. As recommended by Kazadi, Joseph and Patel (2013), government could also intervene in the cutting down of the cost by reducing tax on ICT tools for teaching and learning purposes. Schools could also look at the possibility of subsidizing teachers to acquire ICT tools as this could indeed motivate the teachers and promote ICT in secondary school in DR. Congo. This finding opens a market for ICT dealers to partner with schools in DRC in the process a win-win deal that could see ICT implementation in education in DRC secondary schools.

What is the perceived usefulness of an ICT tool for teachers in the Marist Schools.
According to Technology Acceptance Model (TAM), the perceived usefulness of a technology is one of the key factors that influence the behaviour of its adopter (Davis 1989). In this perspective, the sixth research question sought to investigate the perceived usefulness of an ICT tool for teachers in secondary school in DRC particularly in Marist secondary schools. Data on this issue was collected, analysed and presented in Table 7.

Table 7: Expected usefulness of ICT tools acquired by teachers (N=49)

	Frequency	Percent
Preparation for lesson plan and scheme of work	8	16.3
Source of information for teaching subjects	17	34.7
Students marks reports and calculation	1	2.0
Teaching in the classroom	7	14.3
Improving skills and knowledge as a teacher	16	32.7
Total	**49**	**100.0**

Findings in Table 7 indicates that according to the respondents, ICT platforms remain a major source of information for teaching and learning with 35% from the respondents, followed by 33% of those who believe they can improve their skills and knowledge as teachers by the use of these technologies. The key elements of teaching and learning are schemes of work and lesson plan preparation, and teaching in the classroom which were ranked third and fourth place for teachers scoring 16% and

14% respectively. Lastly 2% of the teachers believed that ICT could help them more in processing and calculating students' marks reports. It was clear by getting a personal laptop teachers are likely to get information from the internet for teaching and learning. Library like digital information is among the big challenges faced by education in DRC. Again with lack of training opportunity, teachers could take advantage of the new technologies and expose themselves to other teachers around the world and this could add value to their personal development.

Conclusion and Recommendations

From the findings of this study, it can be concluded that the implementation of ICT in teaching and learning in secondary schools in DRC could start with the acquisition and use of ICT tools by teachers. Although teachers have moderate skills these are still insufficient to implement ICT in teaching and learning. From this study it is evident that teachers are willing to go for training in ICT and are ready to spend not less than 200$ to get personal laptop. These tools could help many teachers access academic information and hence develop progressively digital content that will help them in teaching and learning and for personal development. The paper recommends that the DRC government, the school principals and teachers find a collaborative way in alleviating the burden the cost of ICT tools for teachers and trough a partnership with ICT tools dealers, laptop be availed to teachers in secondary school in Marist school and to other school in DRC in general

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