Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.4, No.12, 2013

A Monitoring and Evaluation Framework for the Integration of ICTs in Teaching and Learning in Primary Schools in Kenya

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Abstract
This research project presents a research study on Information and Communication Technologies (ICTs) integration in primary school education as it sought to develop a Monitoring and Evaluation Framework for the integration of ICTs in Teaching and Learning in Primary School education in Kenya. This was achieved through determining various facets of ICTs use in primary schools, establishing the role of school management in ICTs integration in primary schools, determining how ICTs can best be used in the teaching methodology in primary schools and finally determining fundamental ICT skills required by a teacher for ICT integration in teaching in primary schools. Quantitative methods were used where descriptive and inferential statistical analyses were applied for research with questionnaires being used as the main tool for data collection. Through the data analysis and key findings the researcher came up with recommendations which were used to develop the Monitoring and Evaluation Framework.
The study revealed that 75.7 percent of the teachers who participated in the study were trained in ICT while 18.9 percent did not have any training in ICT. At the same time, only 32.4 percent of the head teachers were established to be trained in ICT while a larger percent, 64.7 were not trained in ICT. This implied that most of the head teachers do not have sufficient knowledge to manage the processes of ICTs integration in teaching and learning. Furthermore, the mean for integration of ICTs in the primary school curriculum was established to be 2.43 which asserted that the level of integration is quite low in terms of availability of computers for use by teachers and pupils. Moreover, it was also determined that the Government do not provide enough support to teachers in the integration of ICTs in teaching and learning which in turn makes the integration process difficult.
The paper concluded by providing recommendations which emphasized on the need of teachers to be trained in basic and advanced ICT skills in order to technologically empower them in integrating ICTs, the need for strong infrastructural foundations in order to facilitate the ICTs integration process, and the need to have enough support from the Government and other stakeholders to ensure continuity in the ICT integration process. Most of all the research recommended the need to have a solid Monitoring and Evaluation Framework to support the integration of ICTs in the teaching and learning process in primary schools in Kenya.
Keywords: ICTs Integration in Education, Monitoring, Evaluation, Indicators, Monitoring and Evaluation Framework

1. Introduction

Kenya as a country has worked towards developing capacities and competences in order to participate at the global level like other countries in the world. Thus the country has continually developed its human capacities and technological infrastructure. The Government of Kenya has prioritized Information Communication Technologies through a strategic plan namely Vision 2030. The Ministry of Education, Science and Technology developed Sessional Paper No.5 in 2004 that encompassed a policy framework for education. The vision of the Sessional Paper was to attain 'quality education and training for development' with the goal of attaining education for all by the year 2015(Ministry of Education, Science and Technology).
ICT is a fundamental component of the education reforms and thus ICTs integration in Education system of Kenya has been largely supported by the Ministry of Education, Science and Technology. In the implementation of the ICT policy the Government through the Ministry of Education, Science and Technology has been encouraging the use of ICTs in learning institutions in order to appraise the standards of teaching and learning. Further, The National ICT policy was developed in 2006 in order to promote ICTs to improve the livelihoods of Kenyans by ensuring the accessibility, reliability, efficiency and affordability of ICT services. Many learning institutions including primary schools, have therefore been striving to integrate ICTs in their teaching and learning systems either by teaching ICT subjects or by using variety of ICT hardware and software for teaching and learning. There is great effort to improve the integration of ICTs in teaching and learning by both the public and private sectors as is evidenced by the numerous provisions of ICT facilities to schools by the Government through The New Partnership for Africa's Development (NEPAD), private organizations such as Computer for Schools Kenya through Computer Aid and many Non-Governmental Organizations.
The implementation of the ICT policy in the education sector has not been without technical hitches specifically in relation to the integration of ICTs in education. Despite enormous contribution and immense economic

expenditure to integrate ICTs in education, the Ministry of Education (2012) has acknowledged that the education sector has not attained the expected objectives ICTs integration in education.

Most of the ICT projects started in schools have not been successful and hence have ended without attaining the expected objectives. Part of the failure has been attributed to the lack of a clearly outlined Monitoring and Evaluation Framework to support the integration of ICTs in teaching and learning and consequently contribute to the National ICT policy. Absence of accepted standard methodologies and indicators to assess the impact of ICT in primary education (Wagner et al., 2005) has also contributed to the failure of proper integration of ICTs in the teaching and learning process.

This research project sought to collect relevant data and through the findings develop a Monitoring and Evaluation Framework to support the integration of ICTs in the teaching and learning process in primary schools in Kenya thereby contributing to the objectives of the National ICT policy and consequently to the goals of Vision 2030.

Apart from having general indicators for the assessment of education it is vital to incorporate proper guidelines for integrating ICTs in education. This can be effectively done through the Monitoring and Evaluation Framework to evaluate integration of ICTs in education especially in the context of Education For All (EFA) and education –related Millennium Development Goals (MDGs).

2. Literature Review

Technological advancement has continued to evolve and proliferate and therefore it has been deemed important to incorporate the use of ICTs in classroom instructions. Nevertheless, the introduction of these ICTs in education has been quite costly in terms of up front capital costs which include but are not limited to acquiring infrastructure and the associated recurrent costs. With constant rise in the implementation and operating costs, there is increased need to develop a Monitoring and Evaluation Framework in order to evaluate effectiveness of ICTs in primary schools. The Framework will help to learn from the previous experiences in order to help the education sector improve the integration of ICTs in education. Furthermore, Monitoring and Evaluation Framework will also help to uphold accountability which is important for various stakeholders who promote ICTs integration. Lastly, the Framework will also aid in monitoring performance indicators in order to keep the implementation and maintenance of ICTs in education checked and on course.

2.1 Monitoring and evaluation of ICTs in education

It is vital to monitor the integration of ICTs in Education particularly in the teaching and learning process since these are the pillars of education. Teachers are required to incorporate ICTs in the teaching process while at the same time using the required pedagogies of ICTs in order to effectively pass knowledge to pupils. At the same time pupils are required to effectively use ICTs to participate in the learning process.

Various studies have revealed that the continuous use of ICTs in teaching and learning by both teachers and pupils respectively highly motivates teachers to use various ICT methods and ICT related pedagogies in teaching, while in learning the pupils have become more and more autonomous, resulting to pupils attaining better ICT skills and better learner achievements. Lim and Chai (2008) noted that having skills in using productive software such as word processing, presentation, spreadsheets, PDF readers is also likely to promote use of ICTs in primary schools. According to Giordano (2007) most of the learning materials are now available on the internet while libraries are increasingly becoming available online. In that case, for educational materials to be effectively harnessed, it is important that learners have the necessary ICT skills. There is need for better strategies to support the management of ICTs integration in teaching and learning which can be effectively done through a Monitoring and Evaluation Framework that has indicators for monitoring the inputs for ICTs integration, the processes carried out in the integration of ICTs, and the outputs, outcomes and impact of integrating ICTs in teaching and learning.

2.2 M&E Frameworks for ICT integration in Education

A number of frameworks have been used for monitoring and evaluating the integration of Information and Communication Technology in education and more particularly in the Teaching and Learning process. The New Partnership for Africa's Development (NEPAD) has for some time spearheaded integration of ICT in Africa through the NEPAD e-schools project. In that case CIPP Model (Context, Input, Process and Product) for NEPAD e-School Demonstration Project was developed and adopted to provide a comprehensive monitoring and evaluation of NEPAD e-schools project. Each aspect in the CIPP Model is used to monitor and evaluate related issues in the integration of ICTs in e-schools. For example, the context aspect of this model requires collection and analysis of needs to determine objectives, set priorities and establish expected outcomes .In that case ,in the context of e-schools in the NEPAD region, it was taken that issues such high level of poverty, under-development and marginalization of Africa required radical intervention. As a result, the e-school project was set to be implemented within ten years which was supposed have positive implications on the African society in terms of development. Inputs form another aspect in the CIPP model and they are related to the resources which

are required to meet the required goals and objectives. Process on the other hand form the second last aspect of the model and it helps to determine how well the project is being implemented. This helps to understand issues that arise from implementation process and help in making necessary adjustments. Lastly, the product aspect relates to the required outcomes where by the required needs are divided into subsets that answer the question; how well the planned outcomes are being achieved.

The ICT model for Pedagogical Approaches for ICTs integration into primary school English and mathematics in Singapore is also commonly used in monitoring and evaluating ICTs in Teaching and Learning. Lim et al., 2012 carried a case study on the pedagogical approaches for ICT integration into primary school English and mathematics in Singapore. The study used learning with and learning from ICT framework in reporting and analyzing how ICTs have been used in teaching mathematics and English. The framework concentrates on the level of production (pupils' creation of the digital work) and collaboration level where pupils learn with or from ICTs. The model holds that more passive behaviors such as listening and reading are associated with learning from ICTs while more active behaviors such as writing, creating and updating are associated with learning with ICTs. In addition, the model acknowledges that learning from computers is done through various forms such as computer assisted instructions, computer based instruction and intelligent learning system among others. In respect to learning from computers, a computer is seen as a tutor. Though the framework has been used to monitor and evaluate ICT integration, it fails in the sense that it is not able to determine moderating factors in the implementation process.

The Technological Pedagogical And Content Knowledge (TPACK) framework was formulated by Mishra and Koehler (2006).The framework attributes teachers' expertise with respect to incorporation of ICTs into learning and teaching activities. It is based on believe that teachers need to integrate three sources of knowledge which are Pedagogical Content Knowledge, Technological Content Knowledge and Technological Pedagogical Knowledge. Moreover, this model considers demographic factors and the effect they have to pre-service teachers in obtaining ICT knowledge and skills. However, it was determined that age and gender does not impact the TPACK perception. Nonetheless, the framework fails to put into consideration students or pupils who should be the target population in the learning and teaching process.

Lastly, the InfoDev Monitoring and Evaluation Framework of ICT in education initiatives takes into account a variety of broad development issues also known as context issues that relates to ICTs for educational development. The first step of the framework involves specifying a plan to determine implementation fidelity. This lays the foundation for ICTs integration into education and specifies what is supposed to be achieved. Secondly, measures that determine the required outcomes are also put in place in order establish whether the implementation process will be able to attain the required objectives. Importantly, the framework recognizes placing a measure that will determine moderating factors that are likely to influence the success of the integration process. This helps to determine their possible effects and therefore measures can be put in place to mitigate negative effects. Lastly, the framework requires measurable indicators and acceptable methodologies to be in place that should be used to determine the impact of ICTs in education. The measurable indicators are further categorized into input where ICT equipment and software, outcome indicators where impacts on the teachers and pupils or students are measured in terms of their attitude, cognitive and affective, educational and socio-economic indicators where human development is measured in terms of literacy and gender equity. Lastly, cost indicators are also measured where recurrent, fixed and variable costs are determined to establish the worthiness of the integration. The framework therefore helps to determine effectiveness and efficiency of the ICT integration in education in terms of its outcomes.

3. Conceptual Framework

This study sought to adopt a Conceptual Framework from InfoDev Conceptual Framework of ICT in education projects. The Conceptual Framework generated in this research indicates that four variables namely, ICT Curriculum, Infrastructure, School Management, Teacher Training and Extent of ICT integration in Teaching and Learning are vital in the monitoring and evaluation of integration of ICTs in teaching and learning in primary schools.

3.1. ICT curriculum

This insinuates the availability of education material electronically or the inclusion and integration of traditional learning methods with interactive learning programs. ICTs can be used to provide resources which are integral in enhancing the teaching and learning environment. Digitization of ICT curriculum enables teachers to share resources among themselves therefore, providing better teacher collaboration. Teachers also share resources with pupils enabling them access extra information and hence better their understanding of certain topics and subjects. According to Neyland (2011), not a single teacher is in a position of giving up to date and complete information in his own subject. ICTs can be used bridge this gap and enhance the teaching and learning process because it provides different information sources. ICT curriculum directly influences the extent to which ICTs are

integrated in the teaching pedagogies and also the attainment of ICT skills and technology by teachers. It also influences the extent to which pupils attain better basic and technical ICT skills, better learner achievement in literacy and numeracy as well as better general performance in class.

3.2. ICT infrastructure

ICT infrastructure refers to the hardware such as computers, scanners and broadcasting technologies which include radio and TV as well as essential software that enhances teaching and learning. ICT infrastructure must be connected through computer networks and internet connectivity in order to allow for sharing and distribution of data and information among teachers and pupils. Yilmaz (2011) concurs that infrastructure must be easily assessed and used by all. According to Neyland (2011), the school should increasingly employ multimedia applications to stimulate teaching and provide exciting opportunities activities for pupils. Clausen (2007) opined that a networked school is not just a school with a physical network, but where it is beneficial to do so, utilization of resources from outside the school's own network can be applied. Like ICT curriculum, ICT Infrastructure directly influences the outputs and outcomes of the integration of ICTs in teaching and learning.

3.3. School Management support for integration of ICTs in teaching and learning

The school management support for the integration of ICTs in teaching and learning effectively influences the extent to which teachers use ICTs in their teaching methodologies and also how pupils attain necessary basic and technical ICT skills as well as overall learner achievement.

3.4. Teacher training

Teachers need to be equipped with the necessary skills to effectively integrate ICTs in the teaching methodologies. Teacher skills influence how much they integrate ICTs with their pedagogical skills and effectively influence pupils' attainment of ICT skills and overall learner achievement. Teacher training programs can be revised to incorporate ICT programs in order to equip them with technical skills required for integration of ICTs in teaching. Lim et al., 2012 state that teacher training can also take the peer training approach where teachers who have received training in ICTs train their peers.

3.5. Extent of ICT integration in Teaching and Learning

The extent of integration is measured both in the extent of using ICTs in the teaching methodologies and the learner achievement of ICT skills and general class performance as a result of use ICT by teachers. Integration of ICTs in teaching and learning occurs due to the direct influence of ICT curriculum and ICT infrastructure as well as the influence of the School Management support and Teacher training in ICTs.

4. Research Methodology

The research used quantitative research design because it required sufficient quantitative data to be collected and analyzed scientifically and objectively in order to form the basis for generating objective conclusions that led into concrete recommendations such as the development of the Monitoring and Evaluation Framework.

4.1. Sample and Sampling Technique

The sample for the study comprising of 71 respondents, 37 teachers and 34 head teachers was selected through simple random sampling from a sampling frame generated from a larger target population of head teachers and teachers from different primary schools in Nairobi.

4.2. Research Instruments

The questionnaires were designed with a series of closed ended questionnaires and a few open ended questionnaires that were used to gather data that would be required to answer the four research questions in this study. Hence the questionnaires were used to determine the extent of ICTs integration in the primary schools curriculum, to establish the role of the school management in supporting the integration ICT in teaching and learning, to determine the pedagogy used in integrating ICTs in teaching and finally to determine the fundamental ICT skills required by teachers in order to successfully integrate ICTs in teaching.

4.3. Validation of the Research Instrument

The questionnaires were first tested for validity and consistency by having a few respondents participate in a pilot study and later by analysing the data and running the Cronbach's Alpha test on the data input from the pilot study. On average the Cronbach's Alpha value for the set of the different categories of the questions in the teacher questionnaire was 0.8356, while that of head teacher questionnaire was 0.83975 which was well above the acceptable cronbach's alpha .70 and above Garson (2008).Data collection was done over a period of one month. It was easy to collect substantial data from different schools using the questionnaires.

4.4. Data Analysis

During data analysis the respondents' answers were first coded depending on the type of question. For example for questions that used the 4 point likert scale, the answers were coded as 4 for strongly agree, 3 for agree, 2 for disagree and 1 for strongly disagree. The coded data was then entered and analyzed using IBM SPSS Statistics 19 which was preferred by the researcher as it is capable of computing many different procedures with different kinds of data (Guffet & Almonte, 2009).

In order to answer the four research questions, different sections of the questionnaire were analysed separately to generate suitable results attributed to each research question. Data collected was quantitative in nature hence descriptive and inferential statistical analyses were used as methods of analysis.

Descriptive statistical analyses were carried out in order to produce summaries and present data in a more meaningful way. Frequency tables generated from descriptive analyses were used to show measures of central tendencies, namely means and standard deviation For the purpose of this research, a mean score of 3 was taken to be the minimum agreeable scale, which in turn indicated the agreeable level of ICTs integration and hence this mean has been referred to severally in this research study. Standard deviation was used to indicate the spread of the scores from answers given by different respondents. Percentages generated out of frequency tables were also used to indicate the proportion of items or components as required. Column graphs and pie charts were also generated out of the frequency tables to in order to create pictorial summaries of data where it was deemed necessary.

Three different types of inferential statistical analysis were also carried out on the order to generate more informative results required to come up with conclusions and provide the appropriate recommendations. The inferential statistical analyses that were undertaken were, the Independent Sample t test, Cross tabulation and the Spearman's Rank correlation coefficient test.

The Independent Sample t test was used to determine the level of significance otherwise known as the p-value which is the level of significance, Sig (2-tailed) for a pairs of dependent and independent variables. For example, the paired sample test was used to determine the p-value for availability of computers and teachers use of computer aided instruction in classroom delivery effectively, in which case these two variables were found to be statiscally significantly since the p-value obtained (0.017) was less than the alpha value (0.05) or the threshold value that is measured against the p-value at a confidence level of 95% .This explained that the results obtained was above chance

Cross tabulation was used to carry out bivariate analysis to be used to determine the association between variables through the generated contingency tables which were used to indicate if the value of one variable was dependent upon the value of the other variable. For example, a crosstab was run to establish the association that existed between teacher capacity to use ICTs for instructional purpose and the different outputs and outcomes of ICTs integration in teaching learning. This association was displayed in a tabular format.

Further, in order to test the strength of relationships between related variables, the Spearman's Rank Correlation Coefficient tests were run between sets of variables in order to establish the Spearman's Rho. For example this test was used to establish the strength of the relationship between the integration of ICTs in peer led instructions and the integration of ICTs in problem based teaching & learning. The Rho for Spearman's Coefficient was then compared with the strongest correlation coefficient, 1.000.In cases where the Rho for Spearman's coefficient was close to 1.000, there was an indication that there existed a correlation or a degree of association between the two components in pedagogies.

5. Findings

5.1. Background information of teachers and head teachers

The background findings from the study revealed that 75.7 percent of the teachers who participated in the study were trained in ICT while 18.9 percent did not have any training in ICT. At the same time, only 32.4 percent of the head teachers were trained in ICT while a larger percent, 64.7 were not trained in ICT. This implied that most of the head teachers did not have sufficient knowledge to manage the processes of ICTs integration in teaching and learning. The later finding explained the reasons for low support of integration of ICTs in teaching and learning by the school management.

5.2. ICT Integration in the Primary School Curriculum

The mean for Integration of ICTs in the primary school curriculum as established to be 2.43 which asserted that the level of integration is quite low in terms of availability of computers for use by teachers and pupils, accessibility of internet, availability of network for sharing information and availability of software for teaching and learning. The availability of broadcasting technologies such as radio and television scored the lowest according to the teachers.

5.3. Infrastructure

This research study sought to determine the extent of availability of ICT infrastructure in primary schools. It was established that most computers in schools are installed with the basic computer application programs such as those used in Word Processing, Spreadsheets, Power Point and Publisher whose availability was 97.0, 93.9, 90.9 and 72.7 percent respectively. However there is lack of advanced or specialized software such as Corel Draw, whose availability was 48.5 percent, therefore leading to lack of proper integration of ICTs. The availability of ICT hardware such as radios, TVs, scanners, photocopier and projectors are below average as indicated in the findings indicating percentages of 42.4, 39.4, 27.3, 39.4 and 3.0 respectively. Hence, the presence of insufficient

hardware causes lack of utilization of software even if it was available.

This research study further established that the available infrastructure is not always in good condition as only 58.1 of available infrastructure was in good working condition hence most infrastructure is not in use by the teachers or pupils. Using the Sample test, the research also established that there was a significant relationship between infrastructure availability and the extent of ICT integration in teaching and learning. For example the p-value which is the level of significance, Sig. (2-tailed) for the integration of ICTs in regard to availability of computers and teachers use of Computer Aided instruction in classroom for effective delivery' is .017 which is less than the p-value, Sig. (2-tailed) 0.5 the normal level of significance, indicating a significant relationship.

5.4. School Management Support

Management support for ICTs by the school management dwelt on finding out the role played by the school management in order to support the integration of ICTs in teaching and learning. According to the teachers, the school management created strategies for monitoring the provision of ICT facilities, and also monitored the use of ICTs facilities in teaching. Though the school management provided the technical support required for support of ICT facilities, maintenance and sustainability of the facilities, was not at a large scale as the score for this was slightly below a score of 3.Teachers did not agree that the Government provided support to teachers in the integration of ICTs in teaching and learning. Most of the responses from both the teachers and head teachers regarding support by the school management corresponded. There was a 64.3% positive response by the head teachers when they were asked if there is enough capacity building for the teachers to enable them use ICTs for teaching and learning.

5.5. Teacher Training

The capacity for teachers in Word Processing, Spreadsheets and Database Management was established to be 3.14, 3.11 and 3.08 respectively, suggesting that the teachers capacity for basic ICT software has reached the agreeable scale. Capacities for PowerPoint, use of internet to assess learning resources, computer maintenance, and teacher collaboration were low ranging from 2.73 and 2.65, which were below the agreeable level of 3.

According to the head teachers, teacher capacity to use ICTs to prepare lessons and work plans was still rated high at 74.2 indicating that they also agreed that the capacity for basic ICT software was also high. On the other hand, teachers' capacity to use internet to access teaching and learning material and teachers' capacity for computer maintenance was low as it fell below 50%. The research study also realized that there exists a relationship between the teacher capacity and teachers' motivation to use ICTs for teaching. The teacher capacity to use ICT also affects the pupils' ability to use ICTs and consequently enhance the pupils ICT skills. For example, teachers' capacity to use ICTs for instructional purposes leads to motivation of teachers to use ICTs, which in turn motivates pupils to use ICTs to learn and also promotes the pupils autonomy. These results were obtained from a cross tab which was used to compare Teacher capacity to use ICT for instructional purposes and the outputs of ICTs.

5.6. Outputs and outcomes of integrating ICTs in teaching and learning in primary schools

Integration of ICTs into the primary schools curriculum is designed to bring forth positive outputs in terms of teaching and outcomes in generating better learner achievements. In this study, the outcomes of ICT integration were determined by the extent to which teachers integrated ICTs in their teaching pedagogies. The researcher intended to find out how teachers used ICTs for problem based teaching and learning, in peer led instructions, in steering small group discussion, and also for online instruction in teaching and learning. Teachers were also asked about the use of ICTs in lesson preparation, Computer Aided instruction in teaching, Power Point in teaching, teachers, ICTs for exploratory learning and for monitoring pupils' progress and evaluate learner outcomes. It was established teachers mainly used basic software especially Word Processing mainly for preparation of lesson notes. A few teachers indicated that they used MS Excel to track their pupils' performance. It was established that due to the integration of ICTs in teaching there was an increased usage of Computer Aided instruction in classroom delivery and improved knowledge sharing in school. Use of ICTs has resulted to teacher and pupil motivation to use ICTs and pupil autonomy and improved ICT literacy as well improved performance by pupils in class. Notably, pupils' computer literacy skills have improved, while reading and numeracy skills have been enhanced too. These two outputs scored a mean of 3.19 and 3.08 respectively (Table 1).

There exists a strong relationship between various pedagogies for integrating ICTs as established by the study. For example the Rho for Spearman's coefficient for the components, Pedagogical use of ICTs in peer led instructions and Pedagogical use of ICTs for problem based teaching & learning is quite high (.678) which is quite close to 1.000, the strongest correlation coefficient**.** This indicates that teachers use several kinds of pedagogies in the integration of ICTs in teaching. For example teachers who use ICTs for peer led instructions are likely to use ICTs for problem based teaching and learning. Likewise, teachers who use ICTs in small group discussion are also likely to use ICTs in peer led instructions.

6. Recommendations

6.1. Universal basic ICT training of primary school teachers in the country: Teachers should be trained in basic as well as advanced ICT skills to be technologically empowered to integrate ICTs in teaching pupils in primary schools.

6.2. Building of strong ICT infrastructural foundations in primary schools: Strong ICT infrastructural foundations are essential in facilitating ICTs integration in primary schools.

6.3. Continued support for ICTs integration by the school management: The school management is essential in supporting teachers and pupils to ensure the integration of ICTs in teaching and learning as well as ensuring that there are strategies for monitoring and evaluation of ICTs being implemented in primary schools.

6.4. Development and implementation of a Framework for Monitoring and Evaluation of ICTs Integration in Teaching and Learning in Primary Schools is essential in order to measure ICT inputs namely, curriculum and infrastructure, ICT processes namely school management support and teacher training in ICT as well to outputs and outcomes for both the teachers in teaching and also for the learners. This Framework will provide regular feedback to the school management and teachers responsible for integration of ICTs. The Framework will also be subject to constant review in the course of implementation.

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	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Output: Teachers use computer aided instruction in classroom delivery effectively	37	2.78	.096	.584
Output: ICTs skills have improved knowledge sharing in school	37	3.08	.060	.363
Output: Use of ICTs has resulted to pupil motivation	37	3.19	.085	.518
Outcome: ICTs used to promote pupils autonomy	37	2.89	.093	.567
Outcome: ICT has improved students' performance	37	3.16	.091	.553
Outcome: Teachers skills have improved pupils computer literacy skills	37	3.19	.085	.518
Outcome: ICTs used to enhance reading and numeracy	37	3.08	.105	.640
Valid N (listwise)	37			

Table 1.Extent of ICTs integration (Pedagogy): Outcomes indicated by teachers