

Teachers' Attitude towards Use of ICT in CRE Instruction for Secondary Schools in Bungoma Central Sub-County, Kenya

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Abstract: Despite the overarching need to use Information Communication Technology (ICT) to promote the intellectual qualities of students in secondary schools, most teachers still find it a challenge in its use for instruction in various subjects. Christian Religious Education (CRE) is one such subject through which adoption of ICT in its instruction would enable problem solving, higher order thinking and improved communication among students and teachers. This paper is premised on the findings of a study which sought to investigate teachers' attitude towards use of ICT in CRE instruction in secondary schools. The study concentrated on Bungoma Central sub-County in Kenya. Using a descriptive survey design and with a target population of 600 teachers, the study sampled 135 respondents consisting of 45 principals and 90 CRE teachers using purposive sampling technique for principals and simple random sampling for CRE teachers. Data was collected using questionnaires and interview schedules. The collected data was organized, coded and analyzed using descriptive statistics then presented in tables by way of frequencies and percentages. The discussions in this paper point to a negative perception presented by teachers on the use of ICT in instruction of CRE. This is attributed to lack of ICT knowledge among the teachers in the studied schools. As such, the paper recommends that teachers should not only be trained to acquire basic ICT knowledge but that the training should be a continuous professional development to keep up with the dynamic ICT developments.

Keywords: Christian Religious Education, Information Communication Technology, Attitudes, Teachers, Students, Secondary schools, instruction, integration.

INTRODUCTION

Researchers have identified the importance of Information & Communication Technology (ICT) in education because it is fundamentally changing lifestyle, learning and working. Its significance in society include but not limited to promoting a supportive and, interactive teaching and learning environment, creating broader learning communities, and providing learning tools for students, including those with special needs [1, 2]. As individuals who are more integrated with technology, teachers can follow up with developments all over the world. Moreover, this contributes to their self-improvement. The use of computers enables accessibility to the source of information for teachers while it giving them a chance to benefit from the experts in the field. When these advantages are considered, it can be understood that learning technology is inevitable. Some teachers however, continue to display a reluctance to engage with new technology, others remaining fearful to try new approaches which they perceive might have a negative impact on examination results. Making use of technology to support learning and teaching as well as using more constructive approaches appear to be perceived as risky strategies for some teachers and they

prefer to stick with tried and tested methods which they believe enable them to predict and control outcomes more easily [3].

REVIEW OF RELATED LITERATURE

ICT Integration Policy in Kenyan Education

A national Information and Communication Technology (ICT) policy for Kenya was adopted in January 2006 after many failed attempts in preceding years [4, 5]. The policy is based on four guiding principles: infrastructure development, human resource development, stakeholder participation and appropriate policy and regulatory framework. On human resource development, the policy underscores the need to strengthen and streamline Information and Communication Technology (ICT) training among others: Promoting Information and Communication Technology (ICT) in education at primary, secondary, tertiary and community levels by developing its curricula and ensuring that teachers and trainers possess the requisite skills, setting up a framework for evaluating and certifying Information and Communication Technology (ICT) training programmes [6].

The policy further lays the framework for e-learning considered crucial to its development and utilization. Need is expressed to provide affordable infrastructure to facilitate dissemination of knowledge and skill through e-learning platforms; and to promote the development of content to address the educational needs of primary, secondary and tertiary institutions. The e-learning framework further seeks to facilitate sharing of e-learning resources between institutions and to exploit e-learning opportunities to offer Kenyan education programmes for export [6]. The realization of these intentions is expressed in the national Information & Communication Technology (ICT) strategy for education and training, the policy document for Information & Communication Technology (ICT) in education [7]. These include, among others, (1) equipping education institutions with digital equipment to stimulate use of Information & Communication Technology (ICT) in education and (2) supporting initiatives that provide digital equipment to educational institutions, with priority to secondary and primary schools. The expected outcome of these measures was to improve equipping of educational institutions with digital infrastructure up to 80% in secondary schools and up to at least 10% in primary schools. The average access was expected to improve from the prevailing one computer for 150 students to one computer for at least 50 students in secondary schools. The strategy also underscored the need for access and equity by establishing mechanisms to support infrastructural development in remote areas, implementation of policy provisions that are favorable to special needs groups, and making budgetary provisions for adequate supply of Information and Communication Technology (ICT) equipment and facilities [7].

Before the review of factors influencing the adoption and use of the use of ICT by teachers, the concepts of adoption and use are described. Rangaswamy and Gupta [8] describe adoption as the decisions that individuals make each time that they consider taking up an innovation. Similarly, Rogers [9] defines adoption as the decision of an individual to make use of an innovation as the best course of action available. Rogers [9] argues that the process of adoption starts with initial hearing about an innovation to final adoption.

For the purpose of this study, Rogers' definition of adoption is used. Earle [10] linked ICT use with the concept of wholeness, when all elements of the system are connected together to become a whole. For instance, the two important elements of teaching and learning which are content and pedagogy must be joined when technology is used in lesson instruction. However, if students are offered a series of websites or ICT tools (CD ROMs, multimedia), then the teacher is not integrating ICT into teaching since it is not being tackled in the pedagogical issues.

Similarly, Williams [11] described ICT use as the means of using any ICT tool (Internet, e-learning technologies, CD ROMs, et cetera) to facilitate teaching and learning. For the purpose of this study, Williams' definition of ICT use is adopted. Several factors influencing the adoption and use of ICT into teaching have been identified by researchers. Rogers [9] identified five technological characteristics or attributes that influence the decision to adopt an innovation. Stockdill & Moreshouse [12] also identified user characteristics, content characteristics, technological considerations, and organizational capacity as factors influencing ICT adoption and use into teaching.

Teacher Attitudes towards use of ICT for CRE Instruction

The use of computers in learning processes can help to develop cognitive skills among students in thinking, problem solving and learning. It is necessary for all the practicing teachers, teacher candidates, and aspiring educationists in different fields to apprehend technology well and put their focus on making use of the same. Due to various factors many of the teachers and experts are still reluctant on the integration of technological facilities in their classes. They need to develop their personal knowledge and ability in technology in order to help and guide their undergraduates and employees [13, 14].

Internet facilities enable all employees in physical education area to search for information. In addition, at educational facilities, undergraduates achieve various capacities and properties for their future life. In that sense, technology gives everyone similar opportunities, to have self-differentiated features in order to acquire a wide range of knowledge [15].

Teachers have been pointed out by various authors as being an important component in the integration of ICT in teaching and learning process. They are expected to adopt and use ICTs appropriately in their teaching hence implement the changes expected in pedagogy. However as Dawes [16] notes, this potential may not easily be realized because problems arise when teachers are expected to implement changes in what may well be adverse circumstances. Some studies have further shown that successful implementation of ICT depends mostly on staff competence in the integration of ICT into instruction and learning. For example Venezky and Davis [17] in their study, noted that technology by itself may not be any useful as a catalyst for any meaningful school change, but can be a potent lever for planned change implementation.

Studies indicate that investment in new ways of learning and teaching is not the same as investment in technology and infrastructure, the balance seems to tip towards the latter. As pointed out by Ofsted [18, 19], there is need for teacher motivation to develop their

pedagogy and practice; clarification on what pupils should learn using ICT and how teachers should facilitate this. However without proper guidance and taking into account the teachers' own theories about teaching and learning which are recipes for integration, then the much desired change will most likely be limited [20]. In addition to this, studies show that another major impediment is the teachers' reluctance to abandon their existing pedagogy which Rodgers [21] views as an obstacle to teacher development in classroom use of ICT, is limited resources.

Literature further points out that teacher's beliefs about their own efficacy [22] play an important role in integrating technology into instruction. These according to studies by Bruce and Rubin [23]; Clark and Peterson [24]; Ertmer [25]; Hughes *et al.*, [26]; Windschitl and Sahl [27]; Zhao *et al.*, [28], play a predominant role in how they conceptualize and use ICTs in their teaching. Indeed this proves that unless teachers see the connection between technology and the subject content they teach, they are unlikely to develop a technology-supported pedagogy. If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and use of ICT into teaching and learning processes. Demici [29] conducted a study on teachers' attitudes towards the use of Geographic Information Systems (GIS) in Turkey. The study used questionnaire to collect data from 79 geography teachers teaching in 55 different high schools. The study revealed that though barriers such as lack of hardware and software existed, teachers' positive attitudes towards GIS were an important determinant to the successful use of GIS into geography lessons.

In a similar study, Teo [30] conducted a survey on pre-service teachers' attitudes towards computer use in Singapore. A sample of 139 pre-service teachers was assessed for their computer attitudes using questionnaire with four factors: affect (liking), perceived usefulness, perceived control, and behavioral intention to use the computer. He found that teachers were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer. Also, Drent and Meelissen [31] conducted a study about factors which influence the innovative use of ICT by teacher educators in the Netherlands. A sample of 210 teachers was used for the study. Their study revealed that student-oriented pedagogical approach, positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher. Research has shown that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its use into teaching [32].

In European Schoolnet's [33] survey on teachers' use of Acer netbooks involving six European Union countries, a large number of participants believed that the use of netbook had positive impact on their learning, promoted individualized learning and helped to lengthen study beyond school day. However, evidence suggests that small number of teachers believe that the benefits of ICT are not clearly seen. The Empirical survey revealed that a fifth of European teachers believed that the use of ICT in teaching did not benefit their students' learning [34]. A survey of UK teachers also revealed that teachers' positivity about the possible contributions of ICT was moderated as they became 'rather more ambivalent and sometimes doubtful' about 'specific, current advantages' [35].

Teachers' computer experience relates positively to their computer attitudes. The more experience teachers have with computers, the more likely they are to show positive attitudes towards computers [36]. Positive computer attitudes are expected to foster computer use in the classroom [37]. According to [38] for successful transformation in educational practice, users need to develop positive attitudes toward the innovation.

METHODOLOGY

The study utilized descriptive survey research design as it seeks to describe and establish the association among the key study variables. The descriptive survey was adopted based on the conceptual relationship between teacher attitudes in the use of ICT and teachers' use of ICT in CRE instruction. The study was carried out in Bungoma Central Sub-County in Bungoma County of Western region of Kenya. The Sub-County has different types of schools ranging from Extra County, County and Sub-County schools. There is one national school in the Sub-County (Nalondo CBM School), one extra county school (Teremi High school), five county schools and thirty nine Sub-County schools.

The target population included principals and CRE teachers in the Sub-County which was found to have 45 secondary schools [39] with a population of 900 form 4 CRE students. The author used purposive sampling to select teachers and principals. Simple random sampling was used to select 2 CRE teachers, the average number of CRE teachers a school can have making it 30 teachers.

The research instruments that were used in the study included questionnaires and interviews. The questionnaires were individually administered to teachers in each school while principals were interviewed. The questionnaires enabled the author to collect data from a large number of respondents within a short period of time. On the other hand, interviews provided in-depth data that was not possible to get using questionnaire alone [40]. Structured interviews were administered through face to face interactions where

answers were written down and summarized into themes for analysis. Collected data was descriptively analyzed and tabulated using the computer package-Statistical Package for Social Sciences (SPSS) in form of frequencies and percentages as shown in the net section.

RESULTS AND DISCUSSION

This study sought to investigate the attitude of teachers towards ICT use in the instruction of CRE. The study findings are shown in Table-1.

Table-1: Perception of Teachers towards Use of ICT in Instruction of CRE

Statement	SA		A		UD		D		SD	
	F	%	F	%	F	%	F	%	F	%
I have always employed ICT in teaching CRE	8	5.7	32	22.9	15	10.7	38	27.1	47	33.6
I have no access to ICT in the school	23	16.4	11	7.9	0	0	46	32.9	60	42.9
ICT helps me follow a logical sequence	22	15.7	30	21.4	44	31.4	24	17.1	20	14.3
ICT use helps present concepts in a manner that allows for students deeper understanding	26	18.6	38	27.1	12	8.6	27	19.3	36	25.7
Use of ICT is a waste of time	3	2.1	8	5.7	20	14.3	40	28.6	69	49.3
ICT is simply too complicated for me	38	27.1	32	22.9	13	9.3	31	22.1	26	18.6
I do not have enough time to integrate ICT in teaching CRE	43	30.7	25	17.9	17	12.1	33	23.6	22	15.7
The danger of using ICT is that students don't think anymore	20	14.3	48	34.3	14	10.0	40	28.6	18	12.9
If you use ICT in your lesson, you have to completely change your teaching style	54	38.6	21	15.0	15	10.7	37	26.4	13	9.3

Results on teachers employing ICT in teaching CRE showed that 8(5.7%) strongly agreed, 32(22.9%) agreed, 15(10.7%) were undecided, 38(27.1%) disagreed and 47(33.6%) strongly disagreed. Most teachers therefore did not employ ICT in their day to day classroom instruction of CRE This could be attributed to the fact that some teachers consider use of technology as being risky strategies thus established by Condie and Livingston [3], such teachers prefer to stick with tried and tested methods which they believe enable them to predict and control outcomes more easily.

Findings on whether the teachers had no access to ICT in the school revealed that 23(16.4%) strongly agreed, 11(7.9%) agreed, 46(32.9%) disagreed and 60(42.9%) strongly disagreed. It is observed that majority 60(42.9%) of the teachers disagreed while minority 11(7.9%) agreed. Accessibility of the ICT by teachers is therefore not a problem. As pointed out earlier in this study that the adoption of ICT in the Kenyan education was implemented in the year 2006, is a confirmation that the government has made efforts towards ensuring that this is available in schools and all teachers. Access and equity has therefore been ensured through implementation of the policy and adequate supply of Information and Communication Technology (ICT) equipment and facilities in schools [7].

On whether ICT helped the teachers follow a logical sequence, 22(15.7%) strongly agreed, 30(21.4%) agreed, 44(31.4%) were undecided, 24(17.1%) disagreed and 20(14.3%) strongly disagreed. Most teachers 44(31.4%) were undecided on this. However a sizeable proportion 30(21.4%) agreed that ICT helped them in following a logical sequence. The integration of ICT in the teaching and learning process provides a platform for teachers to be logically sequential and help

them make decisions dependent of the arising technological needs. This finding is in agreement with Samad's [41] study which emphasized on the importance of making ICT an integral part of teaching and learning to enable teacher confidence and ability to organize the classroom and structure learning tasks. Looking at whether ICT helps present concepts in a manner that allows for students deeper understanding, 26(18.6%) strongly agreed, 36(25.7%) agreed, 12(8.6%) were undecided, 29(20.7%) disagreed and 37(26.4%) strongly disagreed. The scenario exhibited is that almost half of the sampled teachers agreed with another half disagreeing on the same. In his study, Sutton [42] also presents the same finding implying that Information and Communication Technology helps create a deep understanding of the learning tool and the concepts to be by teachers to their students.

Further findings on whether use of ICT was a waste of time showed that 3(2.1%) strongly agreed, 8(5.7%) agreed, 20(14.3%) were undecided, 40(28.6%) disagreed and 69(49.3%) strongly disagreed. Most teachers 69(49.3%) disagreed with the opinion that ICT was a waste of time. To this end, it can be concluded that use of ICT in CRE in schools is not a waste of time but instead it is of great importance as established by various researchers including Trinidad *et al.*, [1] and Hawkins [2].

Results on whether ICT is simply too complicated, 38(27.1%) strongly agreed, 32(22.9%) agreed, 13(9.3%) were undecided, 31(22.1%) disagreed and 26(18.6%) strongly disagreed.

On whether the teachers lack enough time to integrate ICT in teaching CRE, 43(30.7%) strongly agreed, 25(17.9%) agreed, 17(12.1%) were undecided,

33(23.6%) disagreed and 22(15.7%) strongly disagreed. It was evident therefore that most teachers lacked time for the integration of ICT in teaching. This finding agrees with Teo's [43] study which indicated that lack of sufficient time for teachers to prepare for Information and Communication Technology is one of the barriers to using ICT by teachers in classroom.

Results on whether the danger of using ICT is that students don't think anymore, 20(14.3%) strongly agreed, 48(34.3%) agreed, 14(10.0%) were undecided, 40(28.6%) disagreed and 18(12.9%) strongly disagreed.

Looking at whether use of ICT in lessons completely changes the teaching style, 54(38.6%) strongly agreed, 21(15.0%) agreed, 15(10.7%) were undecided, 37(26.4%) disagreed and 13(9.3%) strongly disagreed. As agreed to by most of the respondents, integration of ICT into the education system changes the style of teaching. This study is in accord with Sutton's [42] observation that use of ICT in education is completely changing lifestyle and how teachers teach and work in subject instruction.

CONCLUSION

The use of ICT in instruction of Christian Religious Education subject in secondary schools has been limited by the negative attitudes held by teachers. Teachers consider the strategy a risky one thus avoid using instead keeping to the manual methods of teaching. The negative attitudes presented by teachers were attributed to lack of ICT knowledge by the teachers in the schools.

RECOMMENDATIONS

The teacher's negative attitude was attributed to their lack of ICT knowledge. The trainings would also serve as an avenue for changing the teacher's attitude towards use of ICT in instruction of CRE. Understanding the importance of ICT in the new ICT enhanced curriculum would thus provide a paradigm shift and hopefully change the teacher's mindset on use of ICT in instruction.

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