

## **Exploring Teacher's Role in ICT Implementation for Learner Progress Monitoring in Secondary Schools in Nairobi County, Kenya**

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### **ABSTRACT:**

The study objective was to determine the role of the teacher in ICT implementation for learner progress monitoring. The study was based on the social and cognitive constructivist theory. The target population constituted 10 teachers of public secondary schools. The target population was sampled and picked using purposive sampling technique. A questionnaire and a short interview were used as research instruments. The research project was guided by a descriptive survey design. The data was analysed using descriptive statistics. The findings were interpreted, discussed and presented on tables, pie charts and in form of percentages for ease of discussion, interpretation and conclusions. Quantitative data was obtained using percentages as well as weighted mean with the help of SPSS software, IBM version 20, while qualitative data was analysed by use of descriptive statistics. Findings indicated that majority of teachers had undergone ICT training which implied that a high percentage of teachers had the required skills on instructional technological knowledge and therefore aptly took up their roles for ease of use in curriculum implementation, even though the teachers were not armed with ICT skills for complex analysis of the learners' results.

**Keywords:** Teacher, ICT, Role, Learner, Implementation, Curriculum

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## **Introduction**

Use of Information and Communications Technology has become inevitable in the current world which has undergone transformation into a global village due to the introduction of new technology in the form of machines and devices that render life easy.

In Norway, a Norwegian Center for Information Communication and Technology under the auspices of the Ministry of Education and Research was established in 2010 with the purpose of promoting the application of ICT to ameliorate education quality and enhance learning strategies and outcomes of learners.

In Tanzania, according to the Ministry of Communication and Transport (2003), an eTHINK TANK group was formed with the aim of transiting the country into the Information Technology age. This resulted in the formation of a policy on ICT in 2003, at the national level with the aim of formulating and spreading an e-education system, linking schools and institutions of higher learning and training facilities in the nation (Tanzania Ministry of Communications and Transport, 2003).

In 1998, Uganda embarked on a policy formulation in ICT (Torach, Okello, & Amuriat, 2006). This culminated in an ICT policy framework in 2002. In 2005, the Ministry of Education, together with partners, crafted the Kenya Education Sector Support Programme whereby ICT was to be introduced in schools as a tool of curriculum implementation. The Kenyan government came up with an ICT policy in 2006 with

the aim of the use of ICT in all learning institutions so as to improve education quality (Farrell, 2007).

In Kenya, several schools have embraced a bio-metric system for learners and staff to clock in and out of school. This way, the parents receive a short message informing them that the learner has reported or left school. School headteachers and principals are in charge of the management of these processes. NEMIS is being administered with the help of a grant from the Global Partnership for Education (GPE). The learners are issued with unique identification numbers for tracking in all aspects of learning such as performance in national examinations, admission to secondary schools, universities as well as medical records.

Secondary schools that do not appreciate and acknowledge the role of the ICT teacher in learner progress monitoring end up with crippled technological advancements or a complete lack of them. The teacher of ICT plays a preponderant role in imparting skills, knowledge and attitudes in the learner and directs the learner by ensuring that the learner develops autonomy in the use of computers.

## **LITERATURE REVIEW**

### **The role of the teacher in ICT implementation for learner progress monitoring**

The role of the teacher has been redefined by the introduction of ICT in the Kenyan education sector. This implies that the teacher has been transformed from a knowledge transmitter for learners to a facilitator of the learner towards knowledge

acquisition. Learning has shifted from teacher-centeredness, which was traditional in nature, to a learner-centred approach.

Bakar et al. (2008) state that a teacher plays a preponderant role in the use of ICT for facilitating and monitoring students by ensuring that the lessons are ICT oriented. Bakar et al. (2008) further opined that teachers must equip themselves with the basic computer literacy ICT skills in tandem with the great steps made in the innovation of ICT in education.

Bakar et al. (2008) postulated that the teachers' role in a school is to ensure that the teaching and learning process is carried out as per the modern development trends in education. According to Lowther et al. (2008), ICT use can lead to an enhanced teaching and learning process if the teacher possesses three main characteristics, namely creativity, autonomy and capability.

The teacher will be creative in researching teaching materials, whereas learners will use ICT independently to complete assignments, carry out research as well. The teacher's role here is to empower learners to complete their assignment and work well with other learners and keep in touch with their instructors. The teacher should use ICT to facilitate learning and teaching. Through ICT, the teacher engages the student in critical and creative thinking.

Teacher factors that influence the application of ICT in the classroom include the teacher's culture and beliefs, ICT literacy, level of confidence, teacher in-service training and professional development. Tinio

(2012) suggests that effective implementation of ICTs into education systems is a complex, multifaceted process that involves not just technology but also the pedagogies and teacher competencies among others.

Modern teachers are required to be facilitators who are capable of helping the learners to make judgments about the quality and validity of new sources and knowledge, be open-minded and critical independent professionals, be active co-operators, and mediators between learners and what they need to know, and providers to scaffold understanding.

According to T. Unwin (2005) ICT teachers are faced with a myriad of challenges that deter them from effectively playing their role of implementation of ICT in learning institutions. These setbacks include: inadequate or a total lack of capacity building, little or insufficient ICT literacy, diminished ICT resources both human and infrastructure.

## Theoretical Framework

The study was based on the social and cognitive constructivist theory. Social constructivism theory was developed by Lev Vygotsky, a Soviet Psychologist, in which he postulates that the teacher and the learner, being social beings, have to interact in a social way to effect learning. The teacher plays the role of a guide for collaborative learning to happen.

Piaget on the other hand opined that cognitive knowledge is built on the cognitive structures which are already in existence, which the learner has already acquired and therefore, the teacher provides an environment for the learner to acquire new skills. An

environment conducive for the learner to acquire new skills comprises of provision of infrastructure in terms of computers, printers, desks, securing of the software to be used for teaching and learning.

## Conceptual Framework

The teacher is the driver and the lead guide in the classroom who is tasked with ensuring that the learner develops the necessary skills, attitudes and acquires knowledge for efficient use of ICT. In the

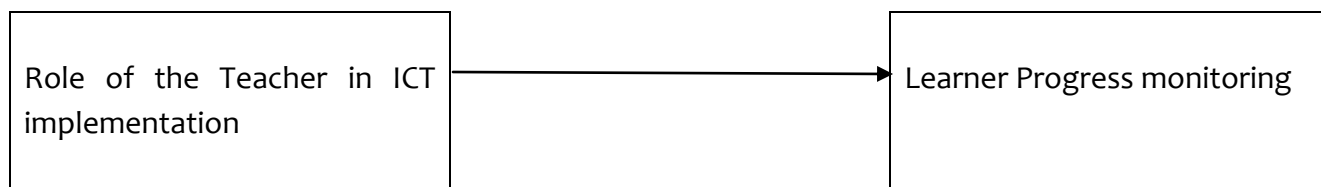
same vein, the teacher is able to monitor the progress of the learner at all levels by use of ICT.

The instructor may monitor the scores of the learner, medical reports of the learner, fee payment and at the same time, the parents get proper communication of whether their children are in or out of school, get short message services about school programmes such as meetings and open days. This in turn renders communication effective.

## Conceptual Framework

### Independent variable

### Dependent variable



## METHODOLOGY

The researcher employed both descriptive and inferential research designs. In Makadara sub-county, there are 11 public secondary schools, with a student population of 6523 (Makadara Sub-County Director of Education, 2019). The target population constituted 10 teachers of public secondary schools who are charged with the responsibility of implementing ICT for learner progress monitoring in Makadara Sub County, Nairobi County.

The target population was sampled and picked by use of purposive sampling because the study was carried out in schools which had already instituted the use of ICT in monitoring student performance. Questionnaires and a short interview session were

used as research instruments, to collect data from the ICT teachers. The research project was guided by a descriptive survey design. The data was analyzed by way of descriptive statistics and presented in form of a pie chart and a table.

The findings were interpreted, discussed and presented on a pie chart, in percentages to ease discussions, interpretations and conclusions. Quantitative data was obtained using percentages as well as weighted mean with the help of SPSS software, IBM version 20, while qualitative data was analyzed by use of descriptive statistics.

The researcher obtained a letter of introduction from the University of Nairobi and a permit from the

National Council of Science and Technology, and then the researcher sought permission from the Nairobi Deputy County Commissioner and the County Director of Education-Nairobi County.

## FINDINGS AND ANALYSIS

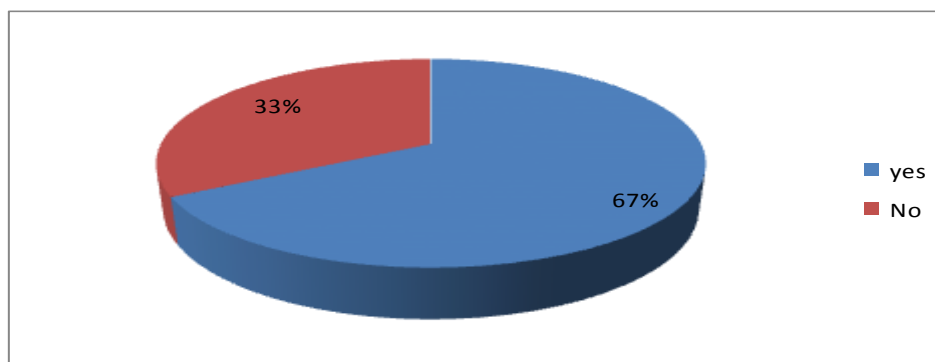
### Role of teachers in the use of ICT for learner progress monitoring

The research objective sought to investigate the role of the teacher in the use of ICT for learner progress monitoring. To achieve this objective, the researcher subdivided the objective into two sub-themes.

### Teachers and ICT training

The study gathered information on teacher training on ICT and this aimed to investigate whether the ICT teachers had undergone training and up to which level because this made a considerable impact on the adoption and utilisation of ICT in instruction and monitoring students.

Figure 1 summarizes the responses.



**Figure 1: Teachers and ICT training**

The majority, 6 (67%) of the respondents had trained in ICT. This implies that a high number of teachers had skills on instructional technological knowledge for ease of use in curriculum delivery and monitoring the progress of the learner.

The finding agrees with the Kenya National ICT Master Plan 2013/14-2017/18 that training teachers is critical for

them to acquire 21<sup>st</sup>-century skills for ease of integration in teaching and learning.

### Teachers and ICT training Themes

The respondents were requested to indicate the theme of ICT training and the following were their responses.



**Table 1: Themes of ICT training**

Question	f	%
Basic computer literacy	4	33
ICT Training for learning/teaching	6	67
ICT for complex analysis of student results	0	0
<b>Total</b>	<b>10</b>	<b>100</b>

The findings on the Table indicate that a large percentage of the respondents 6 (67%) had undergone ICT Training for learning and teaching while 4(33%) had basic computer literacy and none of the respondents had trained for ICT for complex analysis of student results. This confirms that the teachers were not trained for complex ICT tasks.

## CONCLUSION AND RECOMMENDATIONS

The study was on learner progress monitoring through use of ICT in Makadara Sub County, Nairobi, Kenya. The objective of the research was to investigate the role of the teacher in ICT implementation for learner progress monitoring. The study was based on the social and cognitive constructivist theory proposed by Piaget, Bruner and Vygotsky. The theory is comprised of a combination of research in both cognitive and social psychology.

The research revealed that majority of teachers had trained in ICT which implies that a high number of teachers had skills on instructional technological knowledge for ease of use in curriculum to monitor learner progress. The research also found out that majority of the teachers had undergone ICT training for learning and teaching, a few had basic computer

literacy while none had trained for ICT for complex analysis of student results.

Bruner overemphasizes on the role of the teacher (adult) in the education of a child and therefore the skills develop gradually, interwoven with analytical or logical techniques. The three researchers agree on the notion of scaffolding whereby proximal development involves a learner interacting actively with the teacher and in the long run, the learner is aided to achieve his or her desired goal.

In conclusion, the study revealed that majority of teachers had undergone ICT training which translated to a high number of teachers' acquisition of the required skills on instructional technological knowledge for ease of use in curriculum implementation and learner progress monitoring even though the teachers had not been equipped with ICT skills for complex analysis of the learners' results.

## Recommendations

The study recommended that the Teachers Service Commission and the government should in-service teachers so that they can acquire adequate skills to use in ICT implementation for learner progress monitoring and for the complex analysis of the

learners' results. Also, all teachers should be encouraged to use ICT for monitoring learner progress in their subjects of specialization. Finally, documented examples by researchers in the field of ICT where technological techniques have been successfully used in the achievement of pedagogical objectives should be availed to teachers as a testimony that the role of the teacher remains important.

The researchers suggest three critical areas to be considered for further study emanating from their research: 1) to establish how training of teachers influences ICT integration in teaching and learning in public secondary schools; 2) to examine how teachers' attitudes influence their role in ICT integration in teaching and learning in public secondary schools; and 3) to assess the value of Information Communication and Technology in education.

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