

# The Role of Information Communication Technology Integration in Administration Records Management in Secondary Schools in Nzau Sub County, Makueni County, Kenya

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**Abstract:** The purpose of this research paper is to present the findings of a study that investigated the role of ICT integration in administration records management in secondary schools in Nzau Sub-County, Makueni County, Kenya. Information Communication Technology can have immense benefits in the running of school administration functions especially in records and inventory management. The study adopted a descriptive study design and sampled 105 respondents using stratified random sampling technique. The respondents were principals, deputy principals deans of studies, ICT officers/teachers, bursars, librarians and secretaries. Data were collected using questionnaires, observation and interview schedules and analyzed into descriptive and correlational statistics using Statistical Package for Social Sciences version 27. Qualitative data was analysed thematically using content analysis method. The findings of the study showed that ICT integration influences records and inventory management to a moderate extent (33.3% of the respondents); to a large extent (38.1% of the respondents); and a very large extent (4.8% of the respondents). The Pearson's Correlation Analysis Model was computed and the value was 0.871 implying that there is a very strong positive relationship between ICT integration in records management and the support of school administrative activities. Therefore, there is a statistically significance relationship between the two variables. The study also found out that most sub-county day schools have not integrated ICT in their records management especially in the issuance of books in the library and inventory management. However, most schools have an integrated ICT system for keeping personal data of staff and students. The study recommends that the school administrators should automate all record and inventory management functions using ICT for easier storage, retrieval, sharing, tracking, traceability and auditing.

**Keywords:** administrative duties, data, Information Communication Technology (ICT), integration, inventory, library, management records, secondary schools.

## 1. Introduction

### A. Background to the Study

Information Communication Technology is a basic building block in the modern society and as such it is regarded as a basic

skill in education (Adu and Olatundun, 2013). Knowledge of the use of ICT has the huge potential of unlocking many opportunities in the modern world, especially so in the education sector. The modern world requires ICT-literate people who can participate actively in the knowledge economy either by being creators or consumers of the technology knowledge. The United Nations Educational Scientific and Cultural Organization (2013) identifies ICT as a key pillar and enabler that can enhance equity and universal access to education while promoting efficient management of the school resources and personnel.

Managing a modern school has increasingly become more complex because of the many programmes and the stakeholders involved. There is therefore the need to adopt new, innovative and powerful tools and approaches of running these schools, a duty which is carried by the school administrators. These programmes include examinations, communications, record keeping, teacher instructional monitoring, timetabling, planning and budgeting systems, knowledge management, security and safety installations and financial management and procurement among other programmes. The consequence of not running these programmes well is the poor communication experienced between the school administrators and the teachers, parents and other external interested parties such as the governments.

For all academic, non-academic and administrative programmes to run smoothly in a school or educational institution, there is need for an ICT system that can integrate some of administrative programmes and activities for ease of operations. The use of ICT can be one of the ways of achieving this management and administrative effectiveness. According to Owuor and Odera (2019), the success or failure of the school administrative functions largely depends on the school principal or head who is the chief administrative officer of the school. Therefore, he/she should be equipped with the right management tools that make will make school administrative

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activities more effective and efficient.

*B. Statement of the Problem*

Although ICT integration in administration is highly valued for efficient curriculum supervision, personnel management, financial management, resource mobilization and student supervision, the extent to which this has been embraced by principals in records and inventory management in Nzau Sub-County has not been fully investigated. Its role in secondary schools cannot be overemphasized due to the many advantages associated with it including easy presentation, information access, monitoring, evaluation and corporation analysis. Information Communication Technology is seen as a catalyst for change and accessing information has been identified in the whole world as a significant tool in facilitating new models of school administration. However, most secondary schools' administrators in Kenya have not yet fully integrated ICT in their administration of records and inventory management. There is therefore a gap in the knowledge base on the role of ICT integration in administration records management in secondary schools in Kenya. This is the paucity for this study using Nzau Sub- County, Makueni County, Kenya as a reference study area.

*C. Objective of the Study*

The objective of the study was to investigate the role of ICT integration in administration records management in secondary schools in Nzau Sub-County.

*D. Research Question*

What is the role of ICT integration in administrative records management in secondary schools in Nzau Sub-County?

*E. Theoretical Framework*

*1) The Technology Acceptance Model*

This study was grounded on the Technology Acceptance Model (TAM) which was first developed by Fred Davis, (1989). The model is an adaptation of the 'Reasoned Action Theory' by Ajzen and Fishbein, (1980). The model expounds on how people come to accept and use a new innovation or technology (ICT). The model suggests that potential users of a new technology will tend to accept it basing on the perceived usefulness and ease of use of the technology. This theory was very relevant because it underscores the benefits of integrating ICT in records management within a school.

*F. Conceptual Framework*

The study adopted the conceptual framework illustrated in Figure 1 below that shows the relationship between the independent and the dependent variable.

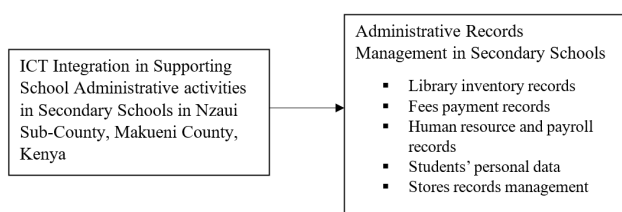


Fig. 1. Conceptual framework

**2. Literature Review**

*A. The Role of ICT in Administrative Records Management of Secondary Schools*

Information Communication Technology can be very helpful in record keeping in school management of tasks in different areas such as operations, library, inventory, school community relationships and curriculum management. Record keeping is a very important function of the school administration. Records should be kept safely for future use or when needed. Oyier, Odundo, and Lilian (2015) opine that it would be impossible to run an institution if records are not well kept. Therefore, the school principals need to have adequate, timely and accurate data of both the students and the staff. These records will range from school personnel personal data, students' enrolment and academic progress reports, parents' contacts and other management information such as the financial and inventory records Oyier et al, (2015).

The use of ICT can be very instrumental in the management of the inventory in the school library. The school can employ a library inventory management system instead of managing the library inventory manually. According to Katitia, Tanui, & Oruta, (2019), such a system will document all the books and other inventory by capturing their details such as the book number, the number of copies of that book, the person the book has been issued to, the date of issue and the expected date of the return of the book or any other teaching resource. Such a system will help in preventing the theft, loss or misplacement or all school textbooks and other resources.

In a study conducted by Onyiye & Idorenyin (2020) on the principal's utilization of ICT resources in secondary schools in the Cross River State, Nigeria, it established that ICT had improved the effectiveness and efficiency of library record keeping in schools that had an integrated system for the management of library books.

School administrators rely on records for information for decision making, therefore, there should be an effective system of storing and retrieving records when needed because records keeping are an indispensable part of the school administration Peretomode (2016). The school should have an integrated financial system that reports on real-time the amount of fees paid by a student and the areas owed to the school. The integrated financial management system should be able to give parents access to the fee statement of his or her child by creating a student account where all the financial statements of the student are posted.

The utilization of ICT can be very instrumental in the maintenance of records of the human resource who work in the school. These are both the teaching and the non-teaching personnel. Information in the digital format is easier to store and retrieve than physical files which occupy a lot of space. These staff records per employee will include the year of employment, age, sex, the job designation and responsibilities, medical history, leaves, remuneration packages, personal staff file which contains achievements, promotions or even disciplinary cases. According to Mang'ando (2015), one of the challenges in administrative efficiency is the failure by some school

principals to keep proper records of all the human resources working in the school. However, with ICT, information can be kept in secure digital format in computers and other web-based programmes such as Google for easier retrieval.

Information Communication Technology can be used in the administration of the students' personal and non-academic data such as the student's admission number, class, age, gender, previous primary school attended, participation in co-curricular activities and any other responsibilities held in school. According to Onyinye and Idorenyin (2020), schools can also have an online admission system that allows the institution to collect and store data from prospective students and even parents.

The use of ICT in record management can ensure accurate tracking of the receipt and dispensation of goods and stationery from the stores. According to Alazzam *et al.*, (2012), the school administrators should incorporate technology in the management of all the stock so as to curb instances of misuse or theft of school property. According to Mue, (2014), ICT can be used to monitor the rate at which various items and facilities are being utilized in the school. Such items and facilities include text books, exercise books, office stationery, chairs, tables, sport equipment, food stuff, cleaning reagents and many more.

### 3. Research Methodology

#### A. Research Design

The study adopted a descriptive study design. A descriptive study design describes a phenomenon in its existing current situation. This design allows the researcher to use various methods such as the questionnaires, observation and interviews to collect data (Mugenda and Mugenda, 2003). This study was conducted in Nzau Sub-County in Makueni County. Makueni County is in the former Eastern Province of Kenya. The sub-county has 56 public secondary schools.

#### B. Target Population and Sample Size

Target population is the entire set of elements, objects or persons with similar observable characteristics from which the data will be collected (Creswell, 2009). This study targeted all the school principals, school deputies, deans of studies, secretaries, bursars, librarians and the ICT officers/teachers and the Sub-County Director of Education. The total target population was 396 respondents. The study sampled 30% of the respondents as recommended by Mugenda and Mugenda (2003) using stratified random sampling technique to give a sample size of 120 respondents.

#### C. Data Collection Instruments

This study used the questionnaire as the primary data collection instrument. The questionnaire contained both open-ended and closed-ended question items. The closed-ended questions were measured on a Likert scale of 5 grades. Other instruments were the interview guide with the Sub-County Director of Education and the observation guide to confirm the availability or unavailability of the ICT facilities in the selected schools.

#### D. Validity and Reliability of the Research Instruments

The study ensured validity of the research instrument by subjecting the instrument to a review by subject experts in the area of educational planning and administration. The reliability of the research instrument was tested through test-retest method using the Cronbach's Alpha Coefficient Model. The Coefficient Value was 0.872, which is considered as a 'good' reliability test (Cronbach, 1984).

#### E. Data Analysis and Presentation

The quantitative data was analyzed statistically into percentages, frequencies, means, mode, standard deviation and correlation analysis using SPSS Version 27 programme. Qualitative data was collected from interviews and open-ended question items and was analysed through content analysis along thematic areas. The data was then presented in form of narrative summaries.

## 4. Findings of the Study

#### A. Sample Response Rate

The questionnaire response return rate was 87.5%. Therefore, the number of questionnaires that were dully filled and returned were 105. Data analysis was based on this number of respondents. The distribution of the respondents from the filled and returned questionnaires was as follows: principals (14), deputy principals (15), deans of studies (13), ICT officers (16), bursars (16), librarians (14) and secretaries (17). The gender of respondents is captured in Figure 2 below.

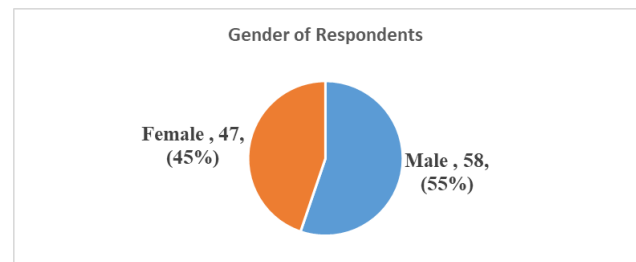


Fig. 2. Gender of respondents

The findings captured in Figure 2 indicates that the majority of respondents were male at 55% while females were at 45%. However, the genders disparity is not very wide, implying that there was a fairness in the selection of the respondents in terms of their gender. This may also imply that schools have instituted a gender balance in terms of staffing.

#### B. The Role of ICT Integration in Administrative Records

##### 1) Management Administrative records in Nzau Sub-County

In order to assess the role of ICT integration in administration records management in secondary schools in Nzau Sub-County, the respondents were given a number of questions related to the objective. The responses were scored on a Likert scale of five grades as follows: Strongly disagree (SD); Disagree (D); Neutral (N); Agree (A); Strongly Agree (SA). Table 1 shows the descriptive statistics summaries of the results.

Table 1  
Descriptive statistics summaries of the results

Statement	SD=1	D=2	N=3	A=4	SA=5	N	Mean	St. Dev
ICT makes record keeping more efficient	0 (0%)	0 (0%)	7(6.7%)	46 (43.8%)	52 (49.5%)	105	4.43	0.618
Our school uses ICT in capturing personal data of staff and for payroll records	15 (14.3%)	25 (23.8%)	13 (12.4%)	39 (37.1%)	13 (12.4%)	105	3.10	1.297
Our school uses ICT for library services	17 (16.2%)	63 (60.0%)	15 (14.3%)	8 (7.6%)	2 (1.9%)	105	2.19	0.867
Our school uses ICT for administration of students' personal and non-academic data	5 (4.8%)	37 (35.2)	7 (6.7%)	36 (34.3%)	20 (19.0%)	105	3.28	1.260
Our school has an ICT system for inventory management	16 (15.2%)	50 (47.6%)	16 (15.2%)	20 (19.0)	03 (2.9%)	105	2.47	1.057
ICT integration has led to reduction of theft cases of the school text books and other stationery	13 (12.4)	39 (37.1)	17 (16.2)	32 (30.5%)	04 (3.8%)	105	2.76	1.131

*C. The Use of ICT in Promoting Efficiency in Record Keeping*

The first question asked the respondents to state whether they believed that ICT makes record keeping more efficient. The findings indicate that none of the respondents strongly disagreed nor disagreed with the question; 6.7% were neutral implying they were not sure; 43.8% agreed while 49.5% strongly agreed. Descriptive statistics computed produced a mean of 4.43 (Std Dev. 0.618) while the mode of the data was 5 which had been coded 'strongly agree'. Generally, 93.3% of the respondents were in agreement with the question that ICT makes record keeping more efficient in secondary schools. Records kept in the electronic format are easy to retrieve and process, occupies less space and are permanent in nature.

*D. The Use of ICT in Human Resource and Payroll Records*

The second question interrogated whether schools use ICT in capturing personal data of staff and for payroll records. The respondents were expected to state the level to which an ICT system has been applied in their respective schools. The results of the question shows that 14.3% of the respondents strongly disagreed with the question; 23.8% disagreed; 13% were neutral; 37.1% were in agreement with the question while 12.4% of the respondents strongly agreed. The mean score of the question was 3.10 (Std. Dev. 1.297). The mode of the responses was 4 which is coded as 'agree'. The majority of the respondents agreed with that statement thus we can infer that nearly half of the schools have integrated ICT in record management of the staff personal data including payroll records.

*E. The Use of ICT for Library Services*

The third question asked the respondents to state whether their school uses ICT for library services. Library services implies the use of ICT enabled system in the issuance and receiving of text books from students and staff. It also implies the storage of this data in an electronic format. The findings of the study were distributed as follows: 16.2% of the respondents strongly disagreed; 60.0% disagreed; 14.3% were neutral; 7.6% agreed while 1.9% strongly agreed. The mean score was 2.19 (Std dev. 0.867) while the mode was 2 which implies that many of the schools especially day schools do not use ICT for library services.

Generally, 76.2% of the respondents were in disagreement with the question which in essence shows that most of the schools run library services manually in terms of record keeping of books issuance and receipts. Most schools use book card for borrowing and returning of library books. This can lead to loss of text books in case of the loss or mishandling of the book cards.

*F. The Use of ICT in the Administration of Students' Data*

The fourth question investigated whether schools use ICT for administration of students' personal and non-academic data. Such data include the student's admission number, class, age, gender, birth certificate number, previous primary school attended, year of admission to the current school, membership of any club, games or sport. From the data analysed, 4.8% of the respondents strongly disagreed with the question that their schools use ICT in the administration of students' data; 35.2% disagreed; 6.7% were neutral; 34.3% agreed while 19.0% of the respondents strongly agreed with the question. The mean of the responses was 3.28 (Std Dev. 1.260) and the mode was 2 which had been coded as 'disagree'. This implies that many schools still use manual methods to manage students' personal and non-academic data.

*G. The Use of ICT for Inventory Management*

The fifth question sought to establish the opinions of the respondents on the matter of whether the school has an ICT system for inventory management. Inventory refers to a record of all the goods acquired by the school or being utilized or consumed. They include text books, exercise, teaching aids and resources, books, office stationery, chairs, tables, sport equipment, food stuff, cleaning reagents and many more.

The responses were as follows: 15.2% of the respondents strongly disagreed with the question; 47.6% disagreed; 15.2% were neutral; 19.0% agreed while 2.9% of the respondents strongly agreed with the question. The mean computation was 2.47 (Std Dev = 1.057) while the mode was 2 implying that majority of the respondents disagreed with the question. It therefore infers that most secondary schools especially the sub-county schools do not have functional inventory management systems, therefore, they use manual methods to carry out school inventory programme. Schools are encouraged to install an ICT system for inventory management in order to track real time the

utilization of the consumables within the school.

#### H. The Extent to which ICT Integration Influences Records Management in Secondary Schools

The investigated further the extent to which ICT integration influences records management in secondary schools in Nzau Sub-County. Administrative records encompasses records about students, staff, suppliers, inventory, school property and from the government. The findings of the study are captured in Figure 3 below.

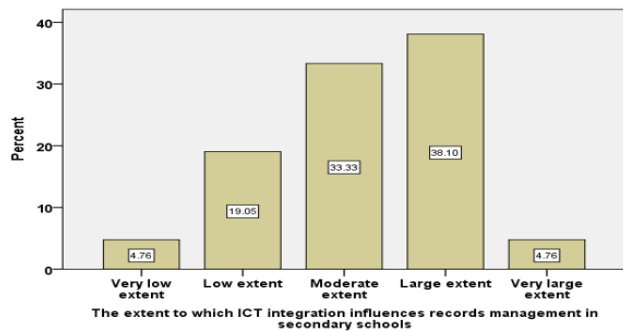


Fig. 3.

The findings in Figure 3 indicate that 4.76% of the respondents stated that ICT integration influences record management in secondary schools to very low extent; 19.05% stated it influenced to low extent while 33.33% were of the opinion that it influenced to a moderate extent. Those respondents who believed it influenced to a large extent were 38.10% while 4.76% stated that ICT influenced records management to a very large extent. Descriptive statistics computed produced a mean score of 3.19 (Std Dev = 0.962) and a mode of 4, implying that majority of the respondents stated that ICT integration influences records management to a large extent.

#### I. Findings from the Interview and Observation Checklist

The interview from the Sub-County Director of Education (SCDE) intimated that “All schools within the sub-county have been encouraged to integrate ICT in management of data of both staff and students. The data on students is used by the Ministry of Education for capitation of schools. Data on data teachers is used by TSC for deployment and professional growth. It was therefore imperative that all schools have an integrated ICT system for record management.”

An observation by the researcher established the presence of a database for the students in most schools and that most schools were able to communicate to parents through the bulk short message service (SMS) system. However, many schools did not have an integrated ICT enabled inventory or library management system.

#### J. Correlation between ICT Integration in Record Management and Supporting School Administrative Activities in Secondary Schools

The study computed a Pearson’s correlation analysis between the independent variable (ICT integration in records management) and the dependent variable (supporting school

administrative activities in secondary schools). The value for the Pearson’s Correlation Moment analysis index for ICT integration in records management and the support in running school administrative activities at 95% confidence level was 0.871 implying that there is a very strong positive relationship between ICT integration in records management and the support of school administrative activities. This correlation results imply that schools that integrate ICT in records management will have increased efficiency in the operations of the administrative functions. Therefore, secondary schools principals are encouraged to integrate ICT in records management for better or improved outcomes in records management.

## 5. Conclusion

The study found out that most schools have an integrated ICT system for keeping personal data of staff and students. However, most sub-county day schools have not integrated ICT in their records management especially in the issuance of books in the library and inventory management. The study therefore recommends that the school administrators should automate all record and inventory management functions using ICT for easier storage, retrieval, sharing, tracking, traceability and auditing.

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