

Effect of Online Registration on Exam Performance in Kenya Certificate of Secondary Education Enrolment. A Case of Sotik District, Kenya

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Abstract

The purpose of the research study was to evaluate the head teachers' perception of online registration on Exam performance in Kenya Certificate of Secondary Education enrolment. A census of all the 35 secondary schools in the district was used to gather the necessary information to be used in the study. The data obtained was coded, tabulated and analyzed using descriptive statistics. The result shows that most of the respondents had been in their current school for less than 3 years. The results also indicate 88% of the respondents preferred online registration while 9% of the respondents showed preference for manual registration. It was established that online registration has reduced multiple registrations and impersonation cases in KCSE Examination. The results identified Pin rejection, no feature to go back and log in difficulty as some of the challenges respondents face during online registration.

Key Words: Examination, Malpractice, Performance, Registration.

1. Introduction

Education is a basic human development indicator that is very crucial in determining the quality of life. Thus, education improves the quality of human life by imparting knowledge, which will enable individuals to be self-reliant. This makes education one of the most important investments of any government (Cross, 2003). Education is a central component of any nation's developmental process and for it to facilitate this function the process should be: clearly defined, legislatively protected from any political dictates, owned by relevant stakeholders, adequately financed and constantly subjected to periodic technical consultations and reviews to ensure that it is in harmony with both local and global needs(Ojiambo, 2009).

Kenya's prosperity and development hinges on how well the nation educates its people (Abagi 1999). Kenya's people see schooling as a major tool for social and economic change. The Kenyan government must therefore consider making changes in regulating who receives education (Garcia, 2011). She further argues that in order to make this change, policy governing education must be amended. In her view, requesting a government to authorize certain criteria in education is dependent on the source or the government, since many governments do not listen to outsiders or what the outsider may perceive be important in a society that they do not live.

Since attaining its independence in 1963, the concept of offering Universal Free Primary Education (UPE) has been central to Kenya's efforts to advance national development. It is because of this that the government came up with free primary education in 2003 With an aim of ensuring that each young Kenyan accesses education, at least basic education necessary to make one be self-reliant. Fees and levies for tuition were abolished as the government and development partners pledged to meet the cost of basic educational materials as well as salaries for non-academic faculty and co-curricular activities (Sifuna, 2005). The introduction of the free education led to a large increase in enrolment in primary schools. Implicitly, this led to an increase in candidature in K.C.P.E. examination.

For instance, Ojiambo (2009) noted that the number of primary schools in the country had increased steadily from 14,864 in 1990 to 18,901 in 2001/2 representing a 27.2% increase. Besides, enrolments had also gone up from 5,392,319 to 6,314,726, being a 17.1% rise over the same period. He further noted that the percentage of girls' enrolment had also increased in the same period to 49.3%, implying that gender parity in enrolment in primary schools at the national level had effectively been achieved. This implies that the number of pupils who join secondary after completing the primary course also increase and this is the same number that posts an increase in KCSE registration. Besides there has been a tremendous increase in both the number of secondary schools and in student enrollment in response to the rapidly increasing number of primary school dropouts seeking re-entry into secondary schools (Garcia, 2011). For example, in 1963 there were only 151 secondary schools, with a total enrollment of 30,120 students. Today the total enrollment in secondary schools is over 620,000 students.

National Examinations in Kenya have been used mainly for selection and certification purposes and because of this, the examinations have been found to create undue competition that has affected the teaching and learning process whereby so much time has been devoted to the preparation for examinations as opposed to covering the syllabus for the purpose of achieving the curriculum objectives (Mwanyumba and Mutwiri, 2009). However, Mwanyumba and Mutwiri (2009) note that in recent years in Kenya, more attention is being given to school based assessment in order to strengthen the elements of evaluating the education system. In their view, they note the following benefits associated with school based assessment: First, it allows measurement to be made over an extended period of time rather than a single time. This makes high levels of anxiety often provoked by external examinations are largely avoided and a more rounded view of each pupil's strengths and weakness detected early and shaped. Secondly, trends in performance for individual learners can be identified and allowances made if performance at a particular time is affected by ill-health, personal or family stress or bad luck. However, at whatever level of assessment, examinations have to be reliable, relevant, efficient and should promote equity. They also have to be handled under very secure conditions to ensure that no one obtains undue advantage (Mwanyumba and Mutwiri, 2009).

E-registration emerged because of the problems associated with manual handling of registration and student records. Such problems included mismanagement of students' academic records, mismanagement of courses registered for, among others (Olasina, 2011). Additionally, wear and tear are occasioned during retrieval and handling, and sometimes some of the data is lost. In this form data sharing is difficult and reproduction usually involves high costs per unit. (Kuria et al, 2011). It is in view of these, among more other reasons, that the government introduced e-registration of pupils and students for the national examinations. The research is aimed at evaluating the head teachers' perception of online registration on effective KCSE examination enrolment. It will target gathering information from all the head teachers of all the secondary schools in Kenya.

Before the introduction of institutional online registration, there used to be numerous examination malpractices. Adeyegbe (2007) notes that there were concerns over the quality of entry data, duration of processing of entries, security and storage of entry documents/ assessment data, physical transfer of data from the satellite stations to the main computer installation, prompt release of results, communication of assessment information to major stakeholders, logistics problems and escalation of costs. He further indicates that Since 1991 to date examination has taken advance and more sophisticated dimensions, records have emerged yearly indicating high or low percentage in examination malpractice in the National examinations in different countries.

The occurrence of examination and assessment irregularities can seriously damage public confidence in the validity and legitimacy of examination and assessment results and should be dealt with as a matter of urgency within the judicial framework established for this purpose (Wasanga, 2009). He further indicates that learners get involved in examination irregularities and malpractice mainly because, success in a public examination can have profound, immediate and long-term impact on a candidate's life. In many developing countries, examination success and secondary school graduation represents the sole avenue for poor students to secure a non-menial job. "Large-scale testing is not the culprit; it is large-scale testing with high stakes attached to the results that, in some instances have resulted in cheating. However, it blames the lack of material internal control measures put in place by the education departments and/or examination bodies to protect and ensure the credibility of assessment outcomes as the main reason for increase in exam malpractice. This fact is further supported by Adeyegbe (2007) who noted that a material internal control weakness is a serious reportable condition in which the design (or operation) of the education departments (examination bodies) internal control structure does not adequately reduce, to an acceptable level, the risk that errors and irregularities can occur.

This prompted the KNEC to introduce the electronic registration system as the modern way of addressing the concerns raised, in order to maintain an efficient service delivery system. However, there is no research that has been done so far in Kenya to establish whether online registration has achieved its intended objectives of being effective. The purpose of the study therefore was to determine whether the online registration has made KCSE registration effective. The objectives of the study were to determine the extent to which online registration has eliminated multiple registrations in KCSE registration, determine the extent to which online registration has reduced impersonation in KCSE registration and to determine some of the challenges experienced during online registration of KCSE.

2. Literature Review

2.1 E-Registration

E-registration is a system that could easily manage its student body while also providing added bonuses, with a main goal being to ease the transfer of information. The education system requires a tremendous amount of data and documentation, and this e-registration solution allows institutions to focus less on processing paperwork and more on what matters most -meeting the educational needs of their students by having a cost-efficient, secure registration process that allows for easy access to student files (Olasina, 2011). Intranets and portals are supposed to provide an infrastructure through which end-users can gain effective access to information sources needed to assist in daily tasks such as effective decision making, planning and research (Brakel, 2003).

Scope of e-registration include programmes which will contain a detailed information of the students since first date of enrolment and up to the graduation day including all student information and procedures required by the students during study semesters, and particularly the registration and following -up lecture schedules as well as checking up the absence among others (Olasina, 2011). Lakos (2004) gives the key principles that should govern a portal rollout. The first is simplicity: This means that users want a simple and clear web environment. The second principle is dependability: in his view, the site and its contents should be available always and should be predictable. The third is quantifiable value: users should feel self-sufficient and realize added value from using the portal. Another principle is personalization: the portal should be in a way that users can be able to change the site to their personal preferences. Lastly, systematic management: long term success requires a systematic approach and long term commitment.

Adeyegbe (2007) argues that apart from the supply and configuration of hardware, there are other considerations as far as the system design and operation were concerned were as follows: First, the system had to be robust and self-validating, to reduce errors to the barest minimum. The system should also be flexible as far as the mode of registration of school candidates (availability of offline or online options) is concerned. Thirdly, it should have an assurance of the security of the network, application, database and payment system. Fourthly, the system should have seamless integration of the infrastructure with the existing resources. Another consideration is that the system should have scalability and adaptability of the architecture to ensure that it would be capable of handling future increases in volume of data and procedural changes. The system should also be user-friendly, easy to follow instructions worded in simple, precise language with help line support, eliminating the need for candidates or the head teacher to visit Offices to resolve any difficulties related to e-registration. Besides, the system should also have un-interruptible power supply since the service would be available all the days all the time. Another consideration is that the examination council should development the Human Resources in order to ensure a hitch-free migration to a paperless system of registration. They should ensure that the technical Staff is well trained as system/network administrators. They would also have to be equipped to handle first level troubleshooting. Besides, the Wide publicity of the systems change would be required. This will be achieved by producing Training manuals for operators of the system. Briefing sessions would also be held for School Principals, School Registrars and Cybercafé operators. Lastly, examination council Offices nationwide would be equipped to assist schools and candidates who might have difficulties with the uploading of their entries.

There are very few researches that have been done so far concerning e-registration. These include Olasina (2011) who did a research on Students' Perceptions of E-Registration at Ladoke Akintola University of Technology. The research was aimed at highlighting acceptance and use of both major and minor features of the e-registration portal of Ladoke Akintola University of Technology, which empowers users to apply for enrolment, register for courses, search for information, meet requirements and other news as well as access other e-resources after signing in/logging in.

The study revealed that the Lautech portal was used mostly for course registration by the students who had a high perception of use of e-registration in comparison with manual registration. A research by Cao and Budnick (2002) on the Social Factors Affect Students' Use of Online Registration established that the major social factors influencing students' use of online registration include: students' majors and classes, family income, academic emphasis and family income. However, the study did not find significant gender impact on using the online service.

Matovu (2009) in a study titled, availability, accessibility and use of ICT in management of students' academic affairs in Makerere University found that this emerged because of the problem of mismanagement of students' academic records despite the technological advancement that had advanced in the University. The findings of his research indicated that internet facilities, computers, management information systems, electronic databases all were available and accessible to administrators, lecturers and students though with restricted access for viewing results, record keeping, setting and marking exams. ICT for registration was used for tracking students' registration progress by administrators and academic progressing.

Adeyegbe (2007)'s research focused on establishing the process change resulting from the deployment of Information Technology (IT), the challenges posed to Council by the shift to e-registration of candidates, the benefits of the process transformation and possible expansion of the scope of IT application to Council's operations in future; realized that the Council continued to reap the benefits of e-registration while continuing to seek innovative ways of applying modern tools such as IT, to enhance the efficiency of its operations. The study identified the following benefits with e-registration: first, it enables candidates to register from any location without visiting the examination offices, it enhances the efficiency of data capture and shortens processing time as manual checking of entries and scanning of OMR entry forms are dispensed with, it minimizes errors because it is self-validating in design and most of the data required are selected from a drop down menu. Fourthly, it allows longer periods of registration. Fifthly, it eliminates the cumbersome tasks of manual processing and physical transfer of entry data on tapes, it minimizes problems of storage space since entry forms, entry schedules, CASS schedules and OMR entry forms are no longer required. Besides, e-registration also dispenses with the problems of printing entry documents annually and disposing of unsold ones. Facilitation of the capture of continuous assessment scores of school candidates is also another important benefit of e-registration. As noted therefore, there are very few researches that have been done in this area; and even these few have not directly focused their attention on the e-registration of examination. Besides, there is not even a single research known to the researcher, that has been conducted in Kenya on the impact of institutional online registration on efficient KCSE exam registration, hence the researcher's curiosity to fill the gap.

2.2 Difficulties Encountered by E-registration

The shift to e-registration of secondary school candidates by the KNEC have been faced with a number of teething problems. The shift to e-registration was challenging not only to KNEC but also to the IT Service Providers. The challenges were two-fold, the main one being adequate maintenance of the IT infrastructure in order to minimize down times. The second challenge was ensuring the success of the 100% migration to e-registration, given the concerns raised that the low level of computer literacy in the Country did not augur well for such an initiative (Adeyegbe, 2007).

As far as candidates are concerned, most of the difficulties encountered were due to carelessness. For example, some of the Private candidates consign their e-registration to cyber café operators without bothering to confirm the personal details entered on the e-form on their behalf, while to some, entries were not saved/submitted for uploading after modifications (Adeyegbe, 2007). Worse still, some private candidates used up the entire seven log on counts allowed to make modifications to their entries, resulting in inability to print their photo cards.

2.3 KCSE Examination Malpractices

Wilayat (2009) defines examination malpractice as a deliberate wrong doing contrary to official examination rules designed to place a candidate at an unfair advantage or disadvantage. She further argues that exam malpractice is any illegal act committed by a student single handedly or in collaboration with others like fellow students, parents, teachers, supervisors, invigilators, printers and anybody or group of people before, during or after examination in order to obtain undeserved marks or grades.

In her view, exam malpractice include leakage of question papers to copying, changing answer books, impersonation, misconduct in examination centre, approaching invigilators/examiners, making false entries in award list/ examination registers and issuing fake certificate/degrees, multiple registration, among others. In Kenya, the mode of reporting examination results through the media is a factor that greatly influences the prevalence of examination practices (Nyaga and Bundu, 2009). Traditionally, stakeholders in education, who also include parents, quality assurance officers, education officers and opinion leaders extent pressure on teachers to ensure that their schools appear in the print media as being performing schools. They further state that teachers and by extension candidates, reading under such pressure are tempted to use unorthodox methods such as cheating in an effort to improve their mean performance scores so as to secure a place in the media.

Multiple registrations: This involves the registration of a candidate's name in two examination centres and then another person, usually a brighter student who had done such an exam before, is requested to sit the exam in one of the centres; while the bona fide student sits in the other centre. More often than not, the parents of the bone fide student are involved in this plan (Wilayat, 2009). In her view, Spouses (parents) who have prior knowledge of their children academic deficiencies do not only embrace the act by paying outrageous sums of money to have their wards registered but also go extra miles to contract the service of mercenaries. The reasons given by parent are that, they will not be able to pay such amount the following year for the same exam. She further notes that, as regrettable as this wisdom is, parents do not seem to look beyond their nose as to the future this fraud could usher in or portend to humanity if it is not nipped in the bud.

Impersonation: In this case, a student registers for an exam but lets another brighter student who has already sat an exam to do it on his/her behalf. This happens when the bona fide student thinks that he may not attain the desired grade if he sits for the exam by himself. As noted by Wasanga (2009), this involves a collective effort of the head teachers, the impersonator, the student and the parents of the bona fide student; and is normally applied when the bona fide student doubts other means of cheating during the examination period. Adamu (2001) argues that writing of project(s), laboratory or examination on behalf of a student(s) by a bright student hired in order to obtain better results is indicated as another form of examination malpractice that should be condemned.

Registration of wrong subjects: This involves a student being registered for a subject or subjects that he has not been learning. More often than not, this occurs erroneously during the registration process (Wasanga, 2009). This inconveniences the student since they are not only unable to attempt the subject(s) but are also irrelevant to his or her career. This eventually leads to incomplete examination result because some of the subjects the student was not tested in some of the subjects he undertook in the course. The end result is that the student spends another year to re-sit the examination.

Failure to be registered for exam: Wasanga (2009) argues that this involves total failure on the part of the head teachers to register part of or all the candidates who have paid examination registration fee. He further notes that this is rampart malpractice mainly in private schools where a proprietor collects the required fee but fails to the examination council.

3. Research Methodology

The study was conducted through a descriptive survey research design. The study targeted an accessible population of 35 registered public schools of Sotik district is in Bomet County, Rift Valley province. Recently established schools without KCSE centre registration number were not considered. The study administered highly structured questionnaires to all the 35 respondents who are the head teachers in all the 35 schools in the district. This means that the study was census in nature since it involved gathering information from the head teachers of all the schools in the district. A personally administered semi-structured questionnaire was the main tool for collecting data. The data was tabulated, and then analyzed by use of descriptive statistics.

4. Results

Out of the 35 questionnaires administered to the respondents, 32 questionnaires were successfully filled and returned. This represented 91.43% response rate and this was considered sufficient enough to analyze and draw conclusions upon.

4.1 Respondents' knowledge on how to use a Computer

The respondents were asked to indicate whether or not they knew how to use a computer.

The results showed that 93.75% of the respondents had some knowledge on how to use a computer while only 6.25% of the respondents were still green on how to use a computer. This high number of computer literate respondents could be due to the increasing need for use of computer in our daily life that has necessitated people to be computer literate. This shows that majority of the head teachers are computer literate.

4.2 Time Respondents Acquired Computer Skills

Respondents were asked to indicate when they acquired their computer skills. The results showed that 50% of the respondents acquired their computer skills before the year 2010. This could be due to the increase in use of computers in the respondents' daily lives, for example in e-mail correspondences and doing research for those respondents studying, which made the respondents see the need to have computer knowledge early. It was also noted that 21.88% of the respondents acquired their computer skills in the year 2010. This could be the group which was forced to learn the skills so as to enable them perform online registration. The research further showed that 28.12% of the respondents acquired computer knowledge after 2010.

4.3 Time Respondents Acquired Skills on Using the Internet

The research sought to know when the respondents acquired skills on the use of the internet. The results are shown in figure 1. The results show that 44% of the respondents acquired their knowledge on the use of internet before the year 2010. Majority of these are likely to be from the category that attained their computer skills before the year 2010. It was also established that 25% of the respondents acquired their skills on use of internet during the year 2010; and this could be the group that was "forced" to learn by the circumstances that required them to use the internet in registration. The findings further noted that 31% of the respondents acquired their skills on the use of internet after the year 2010. This could be the group that initially depended on the assistance of other people to do online registration, or were promoted to the post of head teacher after 2010.

4.4 Respondents' Ease of Accessibility to Internet for online registration purposes

Respondents were asked to indicate whether they had easy accessibility to internet for online registration purposes. The study established that 62.5% of the respondents had easy accessibility to internet while 37.5% of the respondents had difficulty in accessing internet during registration. This could be attributed to the fact that most of the schools are located in remote areas where the network is low. This shows that there is well distributed network coverage within the country. However, there is need to improve it in regions of low reception.

4.5 Hindrance of Accessibility of Internet to E-Registration

Respondents were asked to state whether access to internet was a hindrance to e-registration. The results realized that 37% of the respondents acceded to the claim that internet was an hindrance to e-registration while 63% of the respondents were against the opinion that access of internet is an hindrance to e-registration. This could be attributed to the fact that most of the respondents own computers and/or laptops and internet facility and therefore have no difficulty in accessing the internet for registration purposes. This leads to a conclusion that on average, internet coverage is good. However, there is need to improve it especially in those regions where there is no coverage.

4.6 Respondents' Preferred Method of Registration

The respondents were asked to indicate their preferred method of KCSE registration between the initial manual method and the e-registration method. As figure 2 indicates, 88% of the respondents preferred online registration. This could be the group which had individually managed to master the procedure for registration and were therefore comfortable with it. However, 9% of the respondents showed preference for manual registration. This could be representing the group who are not computer literate and therefore have not experienced the ease and benefits of online registration. A small proportion of 3% seemed undecided. This shows that online registration is gaining preference by the head teachers, perhaps because of the advantages it has offered to them compared to the traditional manual registration.

4.7 Effect of Online Registration on Multiple Registrations in KCSE Examination

The first objective of the study was to determine the extent to which online registration has eliminated multiple registrations in KCSE registration. To answer this objective, some statements were provided on a five point Likert scale and the respondents were asked to rate each of the statements.

The findings yielded the results indicated in table 1. It was evident from the findings that online registration has reduced multiple registrations in KCSE examination and led to fewer multiple registrations in KCSE examination since online registration was introduced. These claims were weighed 4.09 and 4.06 respectively on a five point Likert scale, indicating that the respondents “agreed” with this claim. However, the respondents seemed “undecided” on whether there were numerous multiple registrations during manual registration of KCSE examination since they rated this statement 3.16 on the five point Likert scale. This could be because they are major participants in multiple registration cartels and therefore could not admit. This leads into a conclusion that online registration has helped curb multiple registration as one of the vices witnessed during manual registration. This is confirmed by the respondents’ view that there are fewer multiple registrations in KCSE examination since online registration was introduced.

4.8 Effect of Online Registration on Impersonation in KCSE Examination

The second objective sought to determine the extent to which online registration has reduced impersonation in KCSE registration. In response to this objective, selected statements were provided on a five point Likert scale and respondents were asked to rate them. The results were as presented in table 2. The study observed that online registration has reduced impersonation cases in KCSE Examination and that there are fewer impersonation cases in KCSE examination since online registration was introduced. These were rated 4.41 and 4.22 respectively on a five point Likert scale, indicating that the respondents “agreed”. However, the respondents seemed “undecided” on whether there were many impersonation cases during manual registration of KCSE examination. This again, could be due to the fact that they are major participants in fostering impersonation, hence cannot admit. This implies that online registration has helped curb another great vice-impersonation- that was rampant during manual registration.

4.9 Extent to Which Online Registration Has Reduced Impersonation in KCSE Registration

The respondents were asked to state the extent to which online registration has reduced impersonation in KCSE registration. The findings showed that 31.25% of the admitted that online registration has reduced impersonation by a “very high extent” while 53.13% were of the opinion that online registration has reduced impersonation by “high extent”, 18.75% of the respondents felt that online registration has reduced impersonation by a “moderate extent”. This implies that generally, online registration has reduced impersonation in KCSE registration.

4.10 Effect of E-Registration on Overall Registration Procedure

The research sought to establish the effect that e-registration had impacted on overall registration procedure of the KCSE examination. Various selected benefits that were perceived to have been brought about by the e-registration were provided on a five point Likert scale and the respondents were asked to rate them against the scale. The results were as indicated in table 3. The results realized that online registration is quicker than manual system, it enables a student know if s/he has been registered for the examination, it reduces paperwork, it is more reliable than manual, it allows us do corrections after entries are made, reduces multiple registration of candidates and it reduces impersonation in the examination. All these factors were “agreed” upon by the respondents. However, the respondents seemed “undecided” on whether or not online registration is easy to use, it is cost effective compared to manual registration and is error-free compared to manual system. This implies that it is faster to register students online as opposed to manual registration. However, the Ministry should undertake more training to head teachers on how best to use online registration in an effort to improve ease of use by the head teachers.

4.11 Challenges Experienced During Online Registration of KCSE

The third objective aimed at determining some of the challenges experienced during online registration of KCSE examination. The respondents were asked to cite some of the challenges (technical or otherwise) that they face when registering their candidates online. As results in table 4 depicts, the respondents cited the challenges as Pin rejection, no feature to go back, log in difficulty (weights 2.38, 2.28 and 2.19 respectively) indicating that the respondents encountered these challenges to a “little extent”. Other notable challenges included Portal does not identify them, inability to attach picture, failure to save page, portal cannot modify registration of courses and course codes not matching course titles. These challenges were also encountered “to a little extent”. This means that most of the head teachers have already mastered the process of e-registration regardless of the small challenges they are experiencing. The small difficulties they experience in Pin rejection, no feature to go back, log in difficulty would also be due to internet and portal failure due to congestion.

5. Discussion

The first objective of the study was to determine the extent to which online registration has eliminated multiple registrations in KCSE registration. It was established that online registration has reduced multiple registrations in KCSE examination and led to fewer multiple registrations in KCSE examination since online registration was introduced. These claims were weighed 4.09 and 4.06 respectively on a five point Likert scale, indicating that the respondents “agreed” with this claim. However, the respondents seemed “undecided” on whether there were numerous multiple registrations during manual registration of KCSE examination since they rated this statement 3.16 on the five point Likert scale. This could be because they are major participants in multiple registration cartels and therefore could not admit. This is depicted in table 1. The second objective was to determine the extent to which online registration has reduced impersonation in KCSE registration. The study observed that online registration has reduced impersonation cases in KCSE Examination and that there are fewer impersonation cases in KCSE examination since online registration was introduced. These were rated 4.41 and 4.22 respectively on a five point Likert scale, indicating that the respondents “agreed”. However, the respondents seemed “undecided” on whether there were many impersonation cases during manual registration of KCSE examination. These results are presented in table 2. The third objective was to determine some of the challenges experienced during online registration of KCSE. The results found out that Pin rejection, no feature to go back, log in difficulty (weights 2.38, 2.28 and 2.19 respectively) indicating that the respondents encountered these challenges to a “little extent”. Other notable challenges included Portal does not identify them, inability to attach picture, failure to save page, portal cannot modify registration of courses and course codes not matching course titles. These challenges were also encountered “to a little extent”.

6. Conclusions

The results showed majority of the head teachers are computer literate. The fact that half of the respondents acquired their computer skills before the year 2010 and that over half of the respondents owned either a computer or a laptop equipped with internet facility shows that most of the teachers are willing to learn on how to use a computer. This could be due to the increase in use of computers in the respondents’ daily lives, for example in e-mail correspondences and doing research for those respondents studying.

The findings from the study show that that online registration has reduced multiple registrations in KCSE examination and led to fewer multiple registrations in KCSE examination since online registration was introduced. It also shows that online registration has reduced impersonation cases in KCSE Examination and that there are fewer impersonation cases in KCSE examination since online registration was introduced. The results of the study show that online registration is quicker than manual system, it enables a student know if s/he has been registered for the examination, it reduces paperwork, it is more reliable than manual, it allows us do corrections after entries are made, reduces multiple registration of candidates and it reduces impersonation in the examination. Lastly, the study identified some of the challenges experienced during online registration of KCSE as Pin rejection, no feature to go back and difficulty in logging in.

The fact that majority of respondents show preference for online registration shows that online registration is gaining preference by the head teachers, perhaps because of the advantages it has offered to them compared to the traditional manual registration. It is therefore recommended that the government makes it mandatory for registrations of examinations for all institutions, including colleges whose students enroll for KNEC examinations, to be done online. Besides, the government should supply computers and internet facilities to schools since these will not only facilitate the online registration exercise but will also be used by students in their learning. Further still, the government should upgrade and modernize the online registration portal so that it can accommodate any number of users at any time. This is because most head teachers seem to undertake the registration process within the last few days maybe because of the inability of the candidates to bring the registration requirements in time, or maybe because of the head teachers’ believe that “there is always time to registration deadline”. This leads to congestion and frequent failure of the portal. The system should also ensure security of the stored data so as to avoid hacking, a practice which seems to be gaining momentum in the world.

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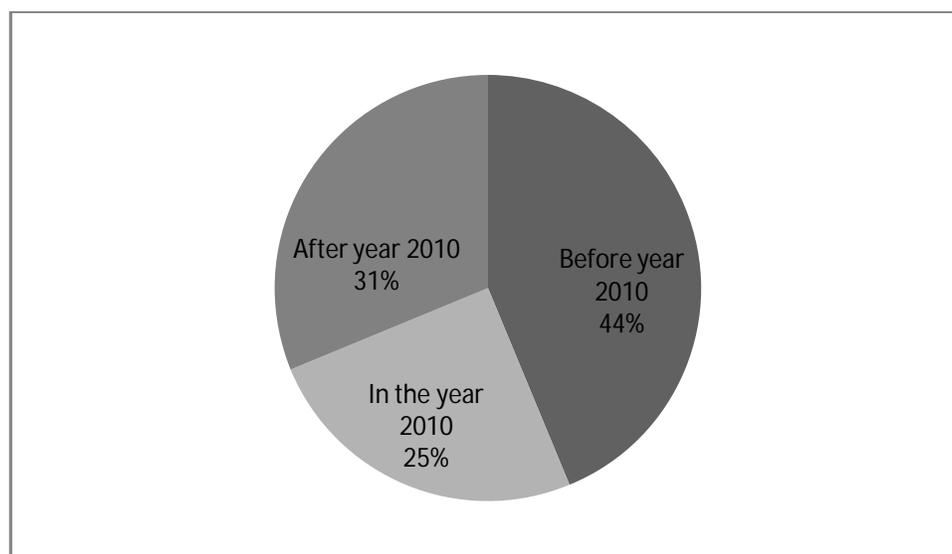


Figure 1: Analysis of Time Respondents Acquired the Internet Usage Skills

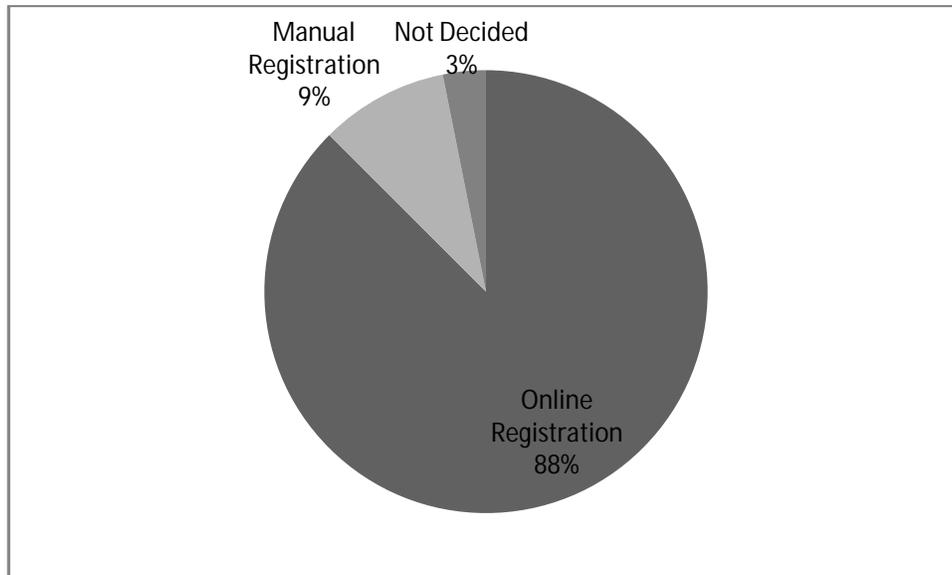


Figure 2: Analysis of Respondents' Preferred Method of Registration

Table 1: Rating of Effect of Online Registration on Multiple Registrations in KCSE Examination

STATEMENT	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree 1	$\sum f_i$	$\sum f_i w_i$	$\frac{\sum f_i w_i}{\sum f_i}$
There were numerous multiple registrations during manual registration of KCSE examination	8	7	2	12	3	32	101	3.16
There are fewer multiple registration in KCSE examination since online registration was introduced	15	10	3	2	2	32	130	4.06
Online registration has reduced multiple registration in KCSE Examination	16	8	3	5	0	32	131	4.09

Table 2: Rating of Effect of Online Registration on Impersonation in KCSE Examination

STATEMENT	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	Strongly Disagree 1	$\sum f_i$	$\sum f_i w_i$	$\frac{\sum f_i w_i}{\sum f_i}$
Online registration has reduced impersonation cases in KCSE Examination	17	13	0	2	0	32	141	4.41
There are fewer impersonation cases in KCSE examination since online registration was introduced	16	12	0	3	1	32	135	4.22
There were many impersonation cases during manual registration of KCSE examination	11	13	0	8	0	32	123	3.84

Table 3: Rating of the Effect of E-Registration on Overall Registration Procedure

E-REGISTRATION	Strongly agree	Agree	Undecided	Disagree	Strongly Disagree	Σf_i	$\Sigma f_i w_i$	$\frac{\Sigma f_i w_i}{\Sigma f_i}$
	5	4	3	2	1			
is fast/ quicker than manual system	23	7	0	2	0	32	147	4.59
Enables a student know if s/he has been registered for the examination	18	12	1	1	0	32	143	4.47
It reduces paperwork	17	13	2	0	0	32	143	4.47
It is more reliable than manual	17	12	3	0	0	32	142	4.44
allows us do corrections after entries are made	15	16	0	1	0	32	141	4.41
Reduces multiple registration of candidates	16	13	2	1	0	32	140	4.38
Reduces impersonation in the examination	15	13	3	1	0	32	138	4.31
is easy to use	14	10	1	7	0	32	127	3.97
is cost effective compared to manual registration	15	8	1	6	2	32	124	3.88
is error-free compared to manual system	7	13	1	11	0	32	112	3.50

Table 4: Challenges of Online Registration of KCSE

CHALLENGE	Very high extent	High extent	Moderate extent	Little extent	No extent	Σf_i	$\Sigma f_i w_i$	$\frac{\Sigma f_i w_i}{\Sigma f_i}$
	5	4	3	2	1			
Pin rejected	1	3	10	11	7	32	76	2.38
No feature to go back	2	4	6	9	11	32	73	2.28
Log in difficulty	1	2	10	8	11	32	70	2.19
Portal does not identify me	0	2	10	8	12	32	66	2.06
Can't attach picture	1	3	5	9	14	32	64	2.00
Can't save page	1	1	6	10	15	33	62	1.94
I cannot modify registration of courses	0	2	7	9	14	32	61	1.91
Course codes not matching course titles	1	2	4	4	21	32	54	1.69