

Teachers' Information and Communication Technology Application Skills Influencing English Curriculum Implementation in Schools in Kenya

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Abstract

With English as a universal language and a central player in a globalized digital world, the need for an acceptable level of teacher ICT application skills, competence among teachers of English is necessary. The Government of Kenya (GoK) has put in concerted efforts to propel Kenya towards vision 2030 by investing in ICT integration in curriculum implementation, to equip a professional teacher with ICT skills for quality classroom practices and satisfactory learner performance in national examinations. Despite the efforts by the GoK to equip teachers with ICT skills for good results in English, Kenya National Examinations Council (2022) contends, overall performance in English for the past 5 years falls short of the average mean of 50% and relentless effort from teachers is still required. The purpose of this study was to investigate the influence of teacher level of ICT application skills on implementation of English curriculum in public secondary schools in Kakamega North Sub-County, Kenya. The study used descriptive research design. A sample of 44 principals, 88 teachers of English and 345 form three students across the 50 public secondary schools in Kakamega North Sub-County, Kenya, were targeted. A questionnaire, interview schedule, classroom practice observation schedule, and focus group discussion guide were used to collect data. Qualitative data was analyzed thematically whereas quantitative data was presented through tables, percentages and frequencies. Chi-square test was performed to test hypothesis. Response rate was 79.5%. The findings indicated that there were teachers who neither participated in ICT workshops (67.1%) nor attended conferences on choice of teaching and learning materials (47.1%), a gap pointing on teachers. Interviews and FGD results show, teacher level of ICT application skills is crucial if quality results are to be realized. The study found a significant association between teacher level of ICT application skills and implementation of English curriculum in school. The study concluded, teacher level of ICT skills in teaching of English is a major concern.

Keywords: teacher level of ICT skills, implementation, English curriculum

1. Introduction

1.1 Contextualization of the Problem

Technology keeps up developing in all aspects of our life. Globally, many countries have made considerable effort towards integrating technological enhancement in teaching of English (Nawaila, Kanbul & Alhamroni, 2020), a universal language and an instructional tool providing students with listening, speaking, reading and writing skills, for meaningful and fulfilling lives. Onotere, Isama and Okpan (2021) show, English is used in every corner of the world as a medium to interact among people from different cultural, ethnic, and social backgrounds. English is articulated by not only native speakers, but also non-native speakers. Tripura and Panda (2023); and Massri's (2020) studies indicate, countries find it essential to integrate Information and Communication Technology (ICT) in teaching of English at different levels of an academic system. Currently,

English directly inter-relates with other disciplines like Sciences, Humanities, Technical, Computing and Mathematics, assisting students in problem solving, critical thinking and creativity. United Nations Educational Science and Cultural Organizations (UNESCO) (2020) report indicates, English is adopted by United Nations to present vital scientific results in international journals and conferences, a conduit promoting global citizenship. Eighty percent of education systems worldwide touts ICT integration in English classrooms, a tool for human capital development, indicating that since 2000 each country is striving for global standards by pushing teachers of English to embrace digital literacy skills. However, the report further argues that a majority of teachers lack some basic competencies in classroom ICT application delivery skills. The report concludes, despite governments spending millions of money on teacher in-service trainings in ICT skills vis-à-vis engaging teachers in exploring discovery methods and models for practical tactics to boost students' communicative competence, accomplishments have not been enough. There are 7775 million adults and 250 million children who are unable to read and write in English. In USA, Saefurrohman and Balinas (2016) show 66% of 4th graders and 22% of 8th graders with difficulties in reading and writing. This raises a concern of whether teacher level of ICT skills could be a contributory factor in students' performance in English as a subject.

Lynell's (2019) study argues, English cuts across all levels of education and transition to the next demands possession of English and technological skills, the teacher being the main facilitator. However, Lynell did not consider application levels of ICT skills in the study – which is significant in determining the performance of the students in English. Ministries of education emphasize that no child should be left behind. Teachers of English are supported through in-service trainings on various themes like Global Trends in Teaching of English using Technological Pedagogical and Content Knowledge (TPACK) model for preparedness on use of ICT skills and assessment practices to boost students' performance. However, the study contends that students' performance in English is still low, an area of great concern to all stakeholders in education worldwide and teacher level of ICT skills in implementing English curriculum is questioned. Studies by Hero (2020); Xie and Cui (2021) posit, the impetus to improve and reform English curriculum implementation is spurred on by the demands from Education for All (EFA), Sustainable Development Goals (SDGs), technological changes and occurrences like Corona Virus Disease 2019 (COVID-19), necessitating teacher in-service trainings for use of ICT in classroom tasks that are beneficial to all students. Xie and Cui (2021) claim, teacher level of ICT skills is inevitable for successful implementation of English curriculum in schools globally. In Indonesia, Par's (2022) study opines, COVID-19 pandemic has brought a profound impact on teaching of English; teachers of English have inevitably adapted and shifted to remote teaching utilizing technology. However, there are still unanswered questions regarding teacher level of ICT skills for effective teaching and learning processes, particularly in the teaching of English in order to prepare students to become empowered learners. Ahmadi (2018) argues, Iran as a country touts the role of technology in English language as a significant tool that affects its international communication activities. One of the important elements for learning English is the TPACK method that teachers of English use in their classrooms. However, the challenge is that teachers are not that skilful users of the technology. In Asia, Massri's (2020) study claims, the government invests heavily in ICT integration practices in English, believing that digital literacy has a positive influence on students' performance in English examinations. However, the problem of students' low performance in English still persists despite the concerted efforts by the government.

In Africa, UNESCO (2020) shows more than 90% of students complete school with reading and writing difficulties. Such trends are worrying, a setback to education goal of “ensuring inclusive and equitable quality education and promoting life-long learning opportunities for all (SDG Goal No. 4)”, yet it is 8 years away from the 2030 deadline. In Nigeria, Onotere, Isama and Okpan (2021) and Akpan, Igwe and Kanno (2020) tout the role of English as the official language of communication used in basic schools, offices, business and skill acquisition. However, most Universal Basic Education (UBE) graduates are often unable to express themselves properly either orally or in writing. This problem is also revealed in a performance analysis of candidates in 2018 May/June West African Senior Secondary Certificate Examination (WASSCE) carried out by Olarewaju and Alabi (2018). The analysis showed that out of the 1,572,396 candidates that sat for the examination, 786,016 candidates representing 49.98% obtained credit and above in English Language, which is unimpressive. Olarewaju and Alabi's (2018) study recommends further research on the influence of teacher level of ICT skills on students' performance in English. Ministry of Education (2022) claims that in one way or the other, factors like students-teacher ratios, teacher absenteeism, peer influence, family socio-economic status and involvement impede students' performance, citing 93-150 million children with disability who are still left behind unable to read and write. However, the teacher is key in curriculum implementation.

The Republic of Kenya (RoK) (2022) shows the government acknowledges quality education and results. In the financial year (FY) 2019/20 investment in education was Kshs. 94.3 billion whereas in FY 2020/21 the total

allocation increased by 1.4% to Kshs. 95.6 billion. Heavy investments are put into teacher training through pre-and in-service courses, where teachers are exposed to orientations on skill acquisition, like ICT skills, and competencies for quality delivery of content meant to translate in students' quality performance in national examinations. It is indicated in MoE (2022) that teacher ICT application skills is a global issue that influence implementation of classroom activities and students' performance in national examinations. Despite the GoK's heavy investments in trainings to equip teachers with ICT skills for creativity and innovativeness in teaching of English, the KNEC (2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022) reports contend competency of teachers of English in classroom activities, associating it to students' poor performance in KCSE English examinations. These successive reports present students' consistent poor performance in KCSE English examinations for the last 5 years which falls short of the average mean of 50%. Students' numerous mistakes in the three papers are cited. Locally, Kakamega North Sub-County Quality Assurance and Standards Office (KNSQASO) (2019) contends students' poor performance in English in Kakamega North since 2015 to 2019 unlike in Kakamega East and Central Sub-Counties, yet all schools follow similar syllabus and teachers undergo uniform pre-and in-service courses on ICT integration. This shows, Kakamega North seems to have issues and need for investigating teacher ICT application skills in teaching of English. Darling-Hammond, Wei and Johnson (2012) found that teacher ICT skills is desirous for successful curriculum implementation and positively influences the quality of instructional delivery and higher performance respectively. Gakuu and Kidombo (2010) claims, teachers' use of technology in Kenyan classrooms remains low, impeding students' access to practical tasks and experiences for creativity and innovativeness to realize quality results; a knowledge gap which show a likelihood of a nexus between teacher level of ICT application skills and implementation of English curriculum in school.

2. Statement of the Problem

The KNEC (2015, 2016, 2017, 2018, 2019, 2020) KCSE examination reports contend, the overall performance in English has remained short of the average mean of 50%. The reports attribute students' poor performance in KCSE English examinations to lack of mastery of English language skills, inability in reading, analyzing or synthesizing information to write effective answers in an organized manner. The reports call for a relook into teachers' classroom practices, skills and competencies for successful implementation of English curriculum. This worrisome trend attracts concerns from the GoK which spends approx. 27% of its national budget on education. Other key stakeholders also get concerned. Teacher level of ICT skills and competencies for successful implementation of English curriculum in school become questionable. Kakamega North Sub-County Quality Assurance and Standards Office (2019) contends students' poor performance in English in Kakamega North since 2015 to 2019 unlike in Kakamega East and Central Sub-Counties, yet all schools follow similar syllabus and teachers undergo uniform in-service trainings on ICT integration in teaching of English. The general public doubts teacher level of ICT skills and competencies, a knowledge gap for investigation.

2.1 The Purpose of the Study

The aim of the study was to investigate the influence of teacher level of ICT application skills on implementation of English curriculum in public secondary schools in Kakamega North Sub-County, Kenya.

2.2 Research Hypothesis

H₀: There is no significant relationship between teacher level of ICT application skills and implementation of English curriculum in public secondary schools in Kakamega North Sub-County, Kenya.

2.3 Significance of the Study

The study would be a tool of learning for the principals because they are involved in one way or another in setting strategies for successful implementation of English curriculum in schools. The principals would benefit on how to improve their ways of supporting teachers of English on classroom activities that positively influence student's performance in KCSE English examinations. The study provides insights to principals regarding the influence of teacher level of ICT skills on implementation of English curriculum in schools. If well checked on, would improve students' performance in KCSE English examinations. It has provided detailed teacher classroom activities that require the role of principals in monitoring, controlling and evaluating for achievement of the desired results in English. The findings show principals components to observe in teacher classroom activities in order to come up with an effective implementation approach in teaching of English: lesson preparation, execution and evaluation and thereafter recommend teachers for in-service trainings.

The study findings would also be useful to the Quality Assurance and Standards Officers (QASO), who would report to the Ministry of Education (MoE) on teachers' performance gaps to provide support for workshops and in-service trainings. The performance gaps would assist in improving the quality of in-service programmes for

teachers, with the aim of helping students to perform better in English as a subject. Challenges principals and teachers of English face while carrying the implementation process in schools would also be brought to the attention of QASO and be addressed, particularly during the formulation of policies relating to effective curriculum implementation in schools.

Curriculum Support Officers would use the study to assess teachers' ICT application skills in English in terms of teacher's orientations in skills acquisition, pre-and in-service trainings and would then use the findings to liaise with Sub-County Directors of Education on specific gaps touching on teachers' ability in: operating of ICT devices; preparing professional documents; preparing students in acquisition of communicative competence; exposing students to emerging issues through all the language skills; demonstrating innovation and creativity in teaching; using of methods like role plays, discussions and debates; classroom management rules and procedures; marking and setting of the skills; content delivery; lesson organization; syllabus coverage; and nurturing positive attitudes in students. Sub-County Directors of Education would then liaise with County Directors of Education to inform MoE on areas that require attention during in-service trainings for teachers of English. The research would help MoE then plan in-service courses that would help teachers acquire new skills of improving students' performance.

The study findings would also benefit teachers of English who would get insights on comments and suggestions from KNEC, QASO, principals and students and take initiative to attend in-service trainings recommended for successful implementation of English curriculum in schools to improve students' performance. An avenue would be created through which teachers of English share their experiences and suggestions, especially on how to handle the language skills in classroom activities that determine in many ways the success of students in English as a subject. The study contains vital data from KNEC and Kakamega North Sub-County Quality Assurance and Standards Office (KNSQASO) showing students' performance in KCSE English examinations for the years 2015-2019, which would be useful for comparison by teachers of English. By going through such significant data, teachers would realize that students' performance in English examinations is below average mean of 50%. Such a worrisome trend would make them relook into their skills and competencies influencing implementation of English curriculum in schools. The findings show teachers of English areas of difficulty and suggestions from KNEC (2017; 2018; 2019; 2021; and 2022) reports on how such areas can be better taught in the three papers (101/1; 101/2; 101/3), especially in writing imaginative compositions and essays based on set texts, to enhance students' language proficiency levels.

This study would help students discover their areas of weaknesses in the three papers (101/1; 101/2; and 101/3). Students would benefit from quality teaching and learning of English when their teachers impress upon them quality classroom practices acquired from in-service trainings attended. When better results are received, many students would get opportunities for admission into tertiary institutions and train to become competitive in global job market.

Finally, in this area of study, there are suggested areas for researchers to study in order enrich knowledge in this field. This would further improve quality of classroom activities during English lessons. Other researchers would be motivated to study the problem in other institutions that would add to the existing data in order to further improve the quality of education by providing students with plenty of practice in the three papers offered by KNEC in KCSE English examinations, for better results.

3. Literature Review

3.1 Teacher Orientations in Skill Acquisition, Pre-and In-service Trainings and Implementation of English Curriculum

New technological innovations, global trends and scenarios like COVID-19 pandemic have triggered change and assisted teaching and learning of English; moments of deep reflection by higher learning institutions on pre-and in-service trainings to equip students and teachers with technological skills. In her study "Undergraduate Student Perceptions on Virtual Online Versus On-campus Teaching – Learning Modes of Delivery and Assessment in Public Universities", Imonje (2022) affirms, on the onset of COVID 19 Pandemic, educational institutions took up either virtual online or blended modes of delivery and learning; as an intervention of solving programmed learning retention, transition and completion concerns among students in institutions of higher learning. In spite of the fact that online learning faces access learning challenges; there seems to be myriad issues with online assessment procedures. Despite this, there is still much debate on whether online assessments, particularly examinations, offer the same academic integrity as the traditional on- campus face to face paper assessment. Teacher level of ICT skills and trainings for new practices and assessments in classrooms are intertwined. Teaching of English in classrooms, therefore, requires teacher orientations on skills acquisition. A study by

Russell, Rehana, Supat, Lovella, Myla, Almighty, Jupeth and Randy (2021) in Ventayen on “Language Teachers’ Pedagogical Orientations in Integrating Technology in the Online Classroom: Its Effect on Students Motivation and Engagement” shows, implementation of English curricula is affected by technological advancements. The usage of technology in teaching of English is on the rise as a teaching tool. Unfortunately, not all teachers of English know how to utilize recent advances to improve learning in the classroom. Further, the study findings indicated that there is a significant relationship between the teachers’ pedagogical orientations in integrating technology in the online classroom to students’ motivation and engagement. The study’s null hypothesis states no significant relationship between pedagogical orientation and student motivation, was rejected with student-centered belief having (r value= 0.778, p value = 0.043), teacher preparation for computer utilization (r -value = 0.698, p value= 0.012), integration of computer in the classroom (r value= 0.723, p value= 0.011), and attitude towards computer utilization (r value= 0.863, p value= 0.023) are positively related to the student’s level of engagement. This suggests that the teachers’ belief in utilizing student-centered teaching to integrate technology in the language classroom, the higher the students are motivated and engaged in learning. In like manner, it was also revealed that teacher-centered belief (r value= -0.531, p value= 0.032) is negatively correlated to students motivation and engagement in online language learning, which signifies that teacher-directed learning such as the use of one-way directed learning is found not appealing to the motivating characteristics of the language students. This means that the higher the teacher adhered to teacher-centered beliefs, the lower the students’ felt motivated and engaged. The reasons behind this finding are, when students are empowered to explore and learn language lessons with the use of student-centered teaching strategies in online learning, the higher students manifest motivation and engagement. The study suggested more research in teachers’ pedagogical orientations and implementation of English curriculum in school.

Globally, a study by Jim énez, Ortega, Cabero and Palacios (2023) claims that global trends are on the increase, inevitable of educational technologies which tend to be mobilized. These trends have led to learning forms changing from traditional classroom learning to electronic learning (e-learning), which has decreased teacher-centred instructions and conversely increased student-centred instructions to enable students take part in meaningful learning. In his study, “Teachers’ Preparedness and Acceptance of Information and Communications Technology (ICT) Integration and Its Effect on their ICT Integration Practices” Hero (2020) argues that for successful curriculum implementation to be realized in schools, there is need for ICT integration in teaching and learning where teachers use technology as a tool to help them and their students achieve curricula and instructional goals as well as attain quality results. However, the study contends teacher level of ICT skills in teaching by indicating that teachers require orientations on skill acquisition and pre-and in-service trainings to make them learn that both digital and non-digital materials need to be selected with great consideration to socially, economically and geographically marginalized students; and those students in different categories of special needs. With such, learning becomes more meaningful and fruitful to students.

Karakaş’ (2015) study on orientations towards English among English medium instruction students posits, teachers of English need orientations on skill acquisition and in-service trainings for attitudinal change, imperative to discover the way the teachers perceive English and preparation of professional documents, materials to use in classrooms, assessment, time allocated for syllabus coverage, and exploration of students’ needs to achieve set goals. Chen and Kent (2020) postulate, a teacher’s confidence in teaching and comprehension of English content is influenced through prior interactions with others in trainings, which serve as the base for planned activity and classroom behavior. The study claims, students’ assessment results are proof of the teacher’s orientations on skills acquisition and pre-and in-service trainings. Matere, Nyakan and Kafwa’s (2017) study assessed effect of teachers’ organization of content on the learners’ acquisition of linguistic skills among secondary school students in Bungoma County, Kenya. The study found that authentic teaching materials and planning of lessons by teachers is inevitable of teachers’ orientations on skills acquisition, pre-and in-service trainings, which are associated with learners’ achievement of linguistic skills. The study recommended that teachers need to adopt new strategies of assessing students. English is an essential subject in the core curriculum in Kenya. The Kenya Institute of Curriculum Development (KICD) organizes in-service courses for teachers of English from time to time to boost them with new skills and competencies for successful implementation of English curriculum in schools. Despite such efforts, the Kenya National Examinations Council (KNEC), in its Examination Reports of the KCSE from 2015-2022 analyses, contends candidates’ poor performance in the KCSE English examinations and cites many mistakes students committed. The reports indicate areas of the English syllabus that were not adequately covered by teachers of English. Recommendations by KNEC are that avenues be created through which teachers of English would be exposed to orientations on skill acquisition and trainings to handle topics that students find difficult to understand. The overall performance in English for the last five years still falls below the average mean of 50%. Such performance in English is unsatisfying, need to

recheck teacher classroom practices hindering successful implementation of English curriculum. Teachers should be supported to attend in-service trainings and workshops where they can acquire new knowledge and skills on how to facilitate critical thinking and problem solving activities during English classroom sessions, using best ways that involve discovery-based teaching methods like language games, films, video tapes/clips, role-plays, writing compositions, group discussions, debates and drama. This would give students ample practice and exposure to competencies and skills desired for grammatical and communicative proficiency for future lives.

3.2 Ability in Operating of ICT Devices and Computers and Its Effectiveness in Implementation of English Curriculum in School

Darling-Hammond, Wei and Johnson (2012) show in “Teacher preparation and teacher learning Handbook of Education Policy Research” that education has increasingly become important to success of both individuals and nations. Growing evidence demonstrates that, among all educational resources, teachers’ abilities are especially critical contributors to students’ learning and consequently the success of a nation to advance in its economic, social and political spheres. Further, Darling-Hammond, Wei and Johnson (2012) claim that professionally, powerful teaching is very important and increasing in the contemporary society as a result of the steam of dynamic initiatives of human development and evolution. Due to these developments and evolutions of the 21st century, teachers would need to acquire additional knowledge and skills, through both pre-and in-service trainings, to be able to survive and be successful in curriculum implementation in school. Through pre-and in-service trainings, teachers may acquire knowledge and skills on core concepts to guide decisions and practice in classrooms in a professional manner, specifically: knowledge of learners and how they learn and develop within social contexts, including knowledge of language development; understanding of curriculum content and goals, including the subject matter and skills to be taught in the light of disciplinary demands, student needs and the social purposes of education; and understanding of and skills for teaching, including content knowledge of specific subject, content pedagogical knowledge for teaching diverse learners, as these are informed by an understanding of assessment and of how to construct and manage a productive classroom.

In Indonesia, Par’s (2022) study on integrating TPACK into English language teaching before and during COVID-19 pandemic argue, Covid-19 pandemic has brought a profound impact on teaching of English in schools; teachers of English inevitably adapted and shifted to remote teaching utilizing technology, for instance, classroom practices of integrating the TPACK model. The study contends, following the rapid change and emergence of integrating technologies into learning, there are still unanswered questions regarding the effective integration of technologies into the teaching and learning processes, particularly in the teaching of English, in order to prepare students to become empowered learners, need for teachers of English to have ability to grasp the intricate relationships between content, pedagogy, technology, and knowledge of the educational context, including knowledge of the students, the assessments, the school, the learning infrastructure, and attitudes, in order to successfully carry out teaching and learning of English in the classroom. See Figure 1 as a visual representation of the three dimensions of knowledge.

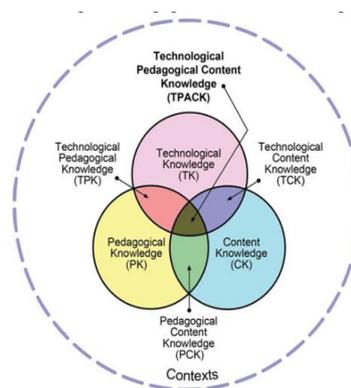


Figure 1. Pedagogical Technological Content Knowledge (TPACK)

Source: <http://tpack.org>

Technological Pedagogical and Content Knowledge (TPACK) means, teachers of English should know how to

use technology to help students learn English better. By knowing this, teachers of English would understand the complex relationship between the three domains of knowledge (TK, CK, and PK) and use the right strategies and technologies to teach students. Gakuu and Kidombo's (2010) study on pedagogical integration of ICT in selected Kenyan secondary schools shows, despite the ICT policy for use in curriculum implementation, teachers' use of technology in Kenyan classrooms remains low, impeding students' access to practical tasks and experiences for creativity and innovativeness. They conclude that ICTs in classroom play a vital role in teaching and learning and if well embraced, can create a lasting and significant positive impact on students' performance in national examinations. Thus, important to investigate the influence of teacher level of ICT application skills on implementation of English curriculum in school.

3.3 Theoretical Framework

This study anchors on Jean Piaget's (1896-1980) constructivism learning theory; principles, strengths, weaknesses and implications in teaching of English. Mvududu and Theil-Burgess' (2012) study "Constructivism in Practice", touts Jean Piaget (1896-1980) the proponent with ideas on child psychology and language learning. This theory has two principles, vital for teachers of English. First, "learners construct new understandings using what they already know about language". Second, "learning of language is active not passive". To Mvududu and Theil-Burgess (2012), the two principles have great implications to teaching of English. First, "teaching of English cannot be viewed as transmission of knowledge from the enlightened to unenlightened", learners previous experiences influence new knowledge they construct from new experiences. Second, "if learning is based on prior knowledge, teachers should provide amiable environment, exploiting inconsistencies between learners' current understandings and new experiences before them". Third, "if students must apply current understandings in new situations to build new knowledge, teacher competencies in material use and methods are vital". Fourth, "if new knowledge is actively built, ample time is needed to allow students' reflection. Strengths of this theory are: it applies across diversity dimensions of students' abilities and skill-based methods. Weaknesses are inevitable, applying individualized methods like role play in classrooms with diverse entry behaviours is challenging. But Piaget's theory has great rewards to both students and teachers.

4. Methodology

Research methodology covers research design, target population, sample size and sampling techniques, research instruments, validity, reliability, data collection procedures, data analysis techniques and ethical considerations.

4.1 Research Design

Descriptive research design was used. Cohen, Manion and Morrison (2018) say, descriptive survey design enables researchers gather qualitative and quantitative data from respondents, summarise, systematically perform cross tabulation and interpret data basing on each variable in relation to objectives of the study. In this study, descriptive survey design allowed collection of descriptive data regarding the characteristics of principals, teachers of English and students, and their opinions on the classroom practices, assessments, discovery teaching methods, conditions and experiences towards implementation of English curriculum in public secondary schools in Kakamega North Sub-County in a way to systematically solicit for factual information for decision-making. Therefore, the design allowed the researcher to determine the relationship between teacher level of preparedness and implementation of English curriculum in school. In addition, the design supports use of various methods of data collection. Therefore the researcher was able to utilize interview guide for principals, questionnaire for teachers of English, FGD guide for students and a classroom practice observation schedule to collect information from the participants. Use of the various research instruments in collecting data, enabled the researcher to collect detailed information. It also made it possible for the researcher to triangulate the findings.

4.2 Target Population

The study targeted 50 public secondary schools in Kakamega North Sub-County which comprised of 3484 participants involving 113 teachers of English, 50 principals and 3321 form three students. The 50 schools consisted 1 extra county, 8 county and 41 sub-county, comprising boys only (4), girls only (4) and mixed secondary schools (42) (KNSQASO, 2019).

4.3 Sample Size

A sample is a sub-group in a population used as a representative of the population, to derive inferences about the characteristics of that population for study purposes (Fraenkel, Wallen & Hyun, 2019). All teachers of English, principals and form three students from 50 schools were used to determine the study sample. Cochran's formula (1963) of calculating sample size (Taherdoost, 2017) was used to compute schools, teachers and students' ideal sample sizes, given the desired level of precision, confidence level and an estimate of P (the estimated

proportion of the attribute present in the population). Thus:

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where: e = the desired level of precision (i.e. the margin of error); p = the (estimated) proportion of the population which has the attribute in question; q = is $1 - p$; and Z = a Z Table-value.

Cochran's formula was then adjusted to obtain the required sample size using:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where: n_0 = Cochran's sample size recommendation; N = the population size; and n = the new, adjusted sample size.

Orodho, Khatete and Mugiraneza (2016) suggest, typical levels of confidence to be used in research are: 95 percent (0.05: $Z= 1.96$) or 99 percent (0.01: $Z=2.57$), and 50% as an estimate of P . This study used 95% (0.05: $Z= 1.96$) level of confidence and 50% estimate of P to have samples with true population value within the margin of error (e) specified. The samples used in the main study were 44 schools, 88 teachers of English and 345 form three students from the target population of 50 schools, 113 teachers and 3321 form three students.

4.4 Sampling Techniques

Sampling allows researchers to study a workable number of cases from the large group to derive findings that are relevant to all members of the group (Matula, Kyalo, Mulwa & Gichuhi, 2018). The study employed simple random sampling to select participating schools. When selecting students, stratification was done basing on type of school to ensure the proportion of male and female students in the sample was the same as in population. Therefore, all the 50 schools were categorized as either Mixed Day School or Boys Day School or Girls Day School or Boys Boarding School or Girls Boarding School. Thus, the target population was fairly and equitably representative of entire spectrum of public secondary schools in Kakamega North Sub-County.

4.5 Data Collection and Analysis

The study used a questionnaire, interview guides, an FGD guide and a classroom practice observation schedule to collect data. Quantitative data was summarized using descriptive statistics, mainly Means, frequencies, variances, standard deviations and percentages were presented in tables for interpretation whereas the hypothesis was tested using the chi-square test. The qualitative data was analyzed thematically, and the data obtained was used to compliment and expound on the meaning of quantitative data from the questionnaires. The voices of the interviewees and FGD responses were captured in the analysis.

4.6 Ethical Considerations

Ethical issues of concern are informed consent, confidentiality, anonymity, and researcher's responsibility (Matula, Kyalo, Mulwa & Gichuhi, 2018). In this study, the researcher ensured informed consent. Participants were adequately informed about the purpose and procedures of the study. Besides, participants were assured confidentiality and anonymity, that is, their individual or personal lives would not be intruded in the course of research and therefore names were not allowed on questionnaires. To attain researcher's responsibility, the researcher upheld high levels of human dignity by making sure the instrument items gather only the information intended for the study. Also, research permit was sought and Sub-County Director of Education and principals informed before data collection process.

5. Findings of the Study

The study aimed at understanding teacher level of ICT application skills influencing implementation of English curriculum in school, for purposes of policy makers and planners to make decisions concerning teacher orientations on skills acquisition and pre-and in-service trainings for appropriate pedagogies to realize quality results.

5.1 Teacher Participation in Training Activities

Integrating ICT into teaching and learning is a complex process that requires teacher training. Teacher's ICT

application skills in teaching of English is a major concern in many countries (Hero, 2020), Kenya included. Teachers were asked to show their participation in training activities through workshops on ICT integration and attending conferences on choice of teaching and learning materials. Findings show that teachers who participated in workshops on ICT integration were (32.9%) while those who attended conferences on choice of teaching and learning materials were (52.9%), indicating that there is low participation in ICT workshops unlike in attending conferences on choice of teaching and learning materials. However, the study found out that there were teachers who neither participated in ICT workshops (67.1%) nor attended conferences on choice of teaching and learning materials were (47.1%), meaning that they were missing important skills which could accelerate students' poor performance in English as a subject. Interviews with principals showed that teachers' participation in ICT training and attendance of conferences was not taken seriously in schools. A principal remarked that:

We give teachers of English opportunities to participate in ICT trainings and also attend conferences as interventions to use of ICTs and improve on discovery methods, assessment practices and their attitudes in classrooms for purposes of quality grades in English. However, most of the time such opportunities arise, you find teachers giving some lame excuses not to attend. I even issue them with a circular or a calendar of academic activities across the term for them to prepare in advance, but I get to wonder when time comes, each teacher trying to excuse himself or herself from going. I am often forced to apply authority when such happens.

Some principals face challenges of uncommitted teachers and unethical practices by some of them. To explore this aspect in detail, another principal during the interview, argued:

Of course, students' results in English from previous years were not as good as was expected. This is because sometimes teachers were unco-operative to attend to all workshops and conferences whenever I sent them. Then, how could they have assisted students to address their weaknesses in learning. Generally, a high number of students scoring dismal grades in English as a subject emanates from the classroom, specifically it is a problem contributed by teachers to a large extent.

The findings implied that teachers are key facilitators in curriculum implementation process. Most of the time, teachers should not wait to be forced to abhor teaching methods that are ineffective in classrooms because such methods automatically lead to failure in KCSE examinations. Trends in teaching of English and particularly, setting of questions for KCSE have changed. Likewise, it showed that during teaching and learning of English, teachers rarely used ICT materials and resources even if they were inadequate to accommodate all learners in the class. Teachers of English needed adequate skills for improvisation as a remedy. The situation may affect performance of students in KCSE examinations in many schools.

5.2 Influence of Teacher Participation in Training Activities

Having ascertained and established that there were teachers who responded with "Yes", the study further delved to determine whether the training activities had an influence on teacher development to improve students' performance in English. Teacher responses were summarized in Table 1.

Table 1. Training Activity Influence on Teacher Development

Training:-			4	3	2	1	Mean	Std Dev
i.	Workshops on ICT integration	f	8	11	4	-	3.1739	.71682
		%	11.4	15.7	5.7	-		
ii.	Conferences on choice of teaching and learning materials	f	12	16	8	1	3.0526	.80362
		%	17.1	22.9	11.4	1.4		

Table 1 indicates that (15.7%) of teachers responded that workshops on ICT integration had a moderate influence on their skills development, while (22.9%) of teachers responded that conferences on choice of teaching and learning materials had moderate influence on their development and students' results. Based on teachers' perception on the extent to which the training activities had on teacher professional development, workshops on ICT integration had a Mean of 3.1739 and Standard Deviation of .71682 as compared to conferences on choice of teaching and learning materials with a Mean of 3.0526 and Standard Deviation of

.80362 respectively. This implies that both training activities in teaching of English are vital in school. However, teacher responses indicated that rating on workshops on ICT integration had a strong influence on teacher professional development and distribution is near normal (Skewness = -.273) while the strength for conferences on choice of teaching and learning materials is weak, spread from normal (Skewness = -.428). In students' FGDs, it was indicated by students that if there were areas of need to be addressed as per the changing trends in teaching and learning of English so as to improve students' results, then teachers were to go for upgrading of their ICT skills and choice of materials and methods to teach them well in areas, specifically mentioned was how to teach literature set-books. They indicated that teachers' level of ICT application skills and choice of materials would have a great positive influence on students' performance in English KCSE examination results. To alleviate students' poor performance in English, a principal suggested:

There was need for government to strengthen trainings, workshops and conferences on ICT and discovery method use in classrooms to make teaching practical and real to students. With such training activities to support teachers, results in English as a subject would improve schools because students get motivated of the teachers and the subject lessons.

In the same vein, the findings are in conformity to Hero (2020) who argues, ICT integration in teaching and learning is the process where teachers use technology as a tool to help them and their students achieve curricula and instructional goals as well as enhance teaching and learning. Nawaila, Kanbul and Alhamroni (2020) show, teaching of English is becoming more sophisticated day by day across the world and indispensable of in-service trainings, workshops and conferences to equip teachers with technological, creativity and innovative skills for classroom practices. Teaching of English with ICT integration is full of language games, text reconstructions, cloze texts, puzzles, narratives, role-plays, reading and writing practices to assist students achieve reading, writing, listening and speaking skills.

5.3 Teacher Reasons for Not Using ICT Devices in Teaching of English

The findings show that the main reasons were unavailability of devices (47.1%) and lack of skills and knowledge among teachers on how to use digital devices (25.7%). Also, some participants (4.3%) of teachers were either unaware or reluctant about the reasons for not using ICT in teaching of English as a subject. The findings implicated that there are other factors which prohibit successful teaching of English, but teacher level of ICT skills play key role. The results are in line with the constructivism learning theory as postulated by Mvududu and Theil-Burgess' (2012) study "Constructivism in Practice" that, "if students must apply current understandings in new situations to build new knowledge, teacher competencies in material use and methods is vital for successful classroom instruction."

5.4 Frequency of Teachers Using ICT Devices in Teaching of English

Teachers of English have the responsibility to invoke the experience in which learning takes place. Respondents were asked to show the frequency of teachers using ICT devices in teaching of English. Data obtained indicated that (48.6%) of teachers rarely used ICTs in teaching of English whereas (14.3%) never used ICTs in classrooms. Additionally, the researcher analyzed the information obtained from interviews and focus group discussions on the same variable. The data showed that a high number of teachers rarely used ICT devices in classrooms. During the interview sessions one of the principals was recorded saying:

Integration of ICT in teaching of English has been a concern for years in my school and teachers of English have a tendency of not taking seriously the use of ICT as a tool to practice with students in teaching unknown words, watching setbooks, speaking and pronunciation, reading comprehension, writing, and listening. I only see my teachers teaching using lesson notes by writing on the board or most of the time making dictations to students. They rarely do what it takes to use ICTs to make students become creative and innovative, yet there is a projector and a laptop.

In the same vein, as a way to capture more information during focus group discussions, similar sentiments were echoed by some of the students during who argued in a way to rate their teachers' level of ICT application skills in teaching of English:

The teachers' level of ICT skills is satisfactory sometimes because we can see them entering and monitoring our marks on 'zeraki software.' But when it comes to teaching of English in classrooms, our teachers' level of ICT skills is unsatisfactory because rarely do we see them using ICT devices to boost students' performance in English KCSE examinations. Our performance in English, is below average. We hope teachers will change the approach of teaching English.

The findings detected during teacher classroom practice observation session show that most of the teachers,

especially those found in rural areas have been challenged with ICT integration. During lesson execution, teachers communicate lessons to students using lesson notes and chalk and board most of the time. ICT integration was rare or none at all. Students' practices exhibited low creativity and innovativeness. Implementation of English curriculum was low, which could lead to dismal grades in KCSE English examinations. The findings concur with those from Adhikari (2021) showing, ICT integration improves technical skills and digital literacy competencies among students. Therefore, students' dismal performance could be related to frequency of teachers using ICT devices in teaching of English.

5.5 Extent to Which Frequency of ICT Use Influence Implementation of English Curriculum

It was vital for the researcher to obtain means and standard deviations for sample data given on frequency of teachers using ICT devices in school to determine the extent to which it influenced teaching of English. Table 2 shows teachers means and standard deviations indicating how teachers perceived frequency of ICT use in teaching of English.

Table 2. Relationship between Frequency of Using ICT and Teaching of English

	N	Mean	Std. Dev	Skewness	Std. Error
Frequency of ICT Use in Teaching	70	2.3714	1.57122	.579	.287
Valid N (listwise)	70				

According to these results, the Mean was 2.3714 giving a standard deviation of 1.57122 and with a skewness of .579. Teachers' perceptions show, there is a strong positive relationship between teacher use of ICTs and teaching of English, a method which could strongly influence students' performance in English if frequently used. This implies that high teacher use translates to effective teaching leading to good performance of students.

5.6 Extent to Which Adequacy of Digital Gadgets Influence Implementation of English Curriculum

The researcher performed the means and standard variations on teachers' responses on influence of teacher level of ICT skills on implementation of English curriculum. The researcher considered the underlying facts about workshops on ICT integration and conferences on choice of materials for use in classroom practices, what makes teachers not to use digital devices, frequency on use of ICTs, and adequacy of digital gadgets in school as established herein in the preceding sections.

Table 3. Link Between Digital Gadgets and Implementation of English Curriculum

	N	Mean	Std. Dev	Skewness	Std. Error
Adequacy of digital gadgets for teaching	70	1.9714	.16780	-5.784	.287
Valid N (listwise)	70				

Table 3 shows how teachers perceived the link between adequacy of digital gadgets and teaching of English in public secondary schools in Kakamega North Sub-County, Kenya. According to these results, the Mean is 1.9714. The standard deviation is .16780. The skewness is -5.784, indicating the distribution is far away from normal. It suggests a high and strong negative link. This points out a big challenge, that inadequate digital gadgets in school for teaching and learning distanced teachers from the classroom practice of ICT use. Imonje (2021) shows, new technological innovations, global trends and scenarios like COVID-19 Pandemic have triggered change in teaching and learning processes in school; moments of deep reflection on teacher level of ICT application skills and trainings to make technology a valuable tool in teaching.

5.7 Testing of Hypothesis

Chi-square test was performed to show the association between teacher participation in ICT training activities and implementation of English curriculum in schools, to show the strength of the relationship at 95% level of confidence (Orodho, Khatete & Mugiraneza, 2016). Both null and alternative hypotheses were stated:

H₀: There is no significant relationship between teacher level of ICT application skills and implementation of

English curriculum in public secondary schools in Kakamega North Sub-County, Kenya.

H_A: There is a significant relationship between teacher level of ICT application skills and implementation of English curriculum in public secondary schools in Kakamega North Sub-County, Kenya.

5.7.1 Relationship Between Teachers' Participation in ICT Training Activities and Implementation of English Curriculum

The relationship among the variables contained in the purpose of the study were analysed in order to establish how teacher level of ICT application skills influence implementation of English curriculum in school. Table 4 gives the summary of the findings.

Table 4. Chi-Square Test on Teacher Participation in ICT Training Activities and Implementation of English Curriculum

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.872 ^a	1	.003		
Continuity Correction ^b	7.418	1	.006		
Likelihood Ratio	9.305	1	.002		
Fisher's Exact Test				.005	.003
Linear-by-Linear Association	8.745	1	.003		
N of Valid Cases	70				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.84.

b. Computed only for a 2x2 table

Table 4 indicates, the p -value is less than chosen significance level $\alpha = 0.05$. The null hypothesis was rejected and the study concluded that there is an association between implementation of English curriculum in school and teacher participation in ICT training activities; whether workshops on ICT integration or conferences on choice of teaching and learning materials ($\chi^2(1) = 8.872, p < .003$).

5.7.2 Relationship Between Frequency of ICT Use and Implementation of English Curriculum

To explore the contention further, the researcher had to perform Chi-Square (χ^2) test on training activities' impact and implementation of English curriculum in school. Data was analyzed and summarized in Table 5.

Table 5. Chi-Square Test on frequency of ICT use and Implementation of English Curriculum

	Value	df	$\chi^2_{critical}$	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.470 ^a	28	41.337	.090
Likelihood Ratio	35.314	28		.161
Linear-by-Linear Association	2.265	1		.132
N of Valid Cases	70			

a. 37 cells (92.5%) have expected count less than 5. The minimum expected count is .06.

Table 5 indicates, P -value = .090. Therefore the null hypothesis is accepted that there is no significant relationship between teacher frequent of ICT use and implementation of English curriculum in school. The findings are in line with Par (2022) who contends, there are still unanswered questions regarding the effective integration of technologies into the teaching and learning processes, particularly in the teaching of English. Adhikari (2021) contends, some teachers could be frequenting ICTs but do not always observe the requisite

skills expected in the classroom for quality results. Gakuu and Kidombo (2010) argue, frequenting ICTs does not mean a teacher is perfect and will produce results; it requires in-service trainings on how to utilize its new packages to address the changing trends in teaching of a subject.

6. Conclusions

Students' poor performance in English as a subject underscores the need for relooking into influence of teacher level of ICT application skills on implementation of English curriculum in schools and also participation in ICT training and attendance of conferences, which was not taken seriously in schools. Students' FGDs indicated, teachers of English needed adequate orientations on skills acquisition for improvisation and creativity as a remedy to improve performance. KNEC reports show, students' performance in English is still unsatisfying and there is need to check on teacher ICT application skills in teaching of English. The findings show key stakeholders that teacher skills and competencies, particularly in English as a subject is vital in measuring learner productivity which is realized in mean scores in national examinations. Findings show teacher classroom activities that require the role of principals in monitoring, controlling and evaluating for achievement of the desired results in English. The Curriculum Support Officers would use the study to assess teacher level of ICT application skills in English in terms of teacher's orientations in skills acquisition, pre-and in-service trainings and would then use the findings to liaise with Sub-County Directors of Education on specific gaps touching on teacher ability in relation to ICT skills for content delivery, lesson organization, syllabus coverage and nurturing creativity in students in the three papers (101/1; 101/2; 101/3), especially in writing imaginative compositions and essays based on set texts to enhance students' language proficiency levels. Finally, there are suggested areas for researchers to study in order to enrich knowledge in this field.

7. Recommendations

Based on the findings and conclusions, the study recommended the following:

- i. Teacher professional development to be intensified by ensuring that teachers recommended for in-service trainings or workshops to attend without failure for orientations on needed skills like ICT acquisition and be equipped with a variety of discovery-based teaching methods and materials to make them confident and competent in creativity and innovativeness activities in English classrooms to produce good results.
- ii. The suggestions posed by principals, teachers and students as possible ways to improve students' performance in KCSE English examinations should be taken seriously by the MoE to be implemented in schools to enhance performance.

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