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| **kabarak university** |
| SCHOOL OF EDUCATION CONFERENCE ON THE CURRENT ISSUES AND PRACTICES IN EDUCATION |
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| **THE USE OF TECHNOLOGY IN EDUCATION.** |

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**SCHOOL OF EDUCATION**

**THE USE OF TECHNOLOGY IN EDUCATION.**

Technology involves adoption of the new know how and devices as a medium for instruction in and out of classroom. The topic was arrived upon serious observation on the process of E-Learning for both poor and rich students and after consulting relevant stakeholders and experts. After consultation, the topic selected as a result of the following factors;

1. The current outbreak of world pandemic; Corona Virus Disease leading to an indefinite closure of learning institutions.
2. Virtual learning adopted by various learning institutions
3. Challenges arising from the current virtual learning.

The majority of the institutions of higher learning have following the advice from the Ministry of Education adopted either full or partial virtual learning system. Such new form of learning has come with new challenges both to the management, tutors and students as opposed to the traditional mode of learning; face to face learning.

The challenges arising from the virtual learning system does not only range from the understanding of the technical system of delivery, break down of communication, the extra incurred cost, poor or weak internet network, poor knowledge of devices use ,and threshold requirements for a learner to access the learning effectively and efficiently.

Out of all the challenges, the most outstanding challenge learners face is the unprepared attitude and cost that has to be incurred The cost that one has to meet in the virtual learning system is quite expensive. The expenses ranges from purchasing of internet bundles, purchasing of devices such internet enabled phones or tablets or computers.

In addition to that, the effective learning via virtual platforms highly depend on the internet service providers. A poor network or failure affects the learning system.

Virtual learning also involves the technical understanding of the platforms and different system use such as virtual platforms or software such as Moodle, operating cloud meeting and attitude control. Online class etiquette is also a factor to consider for an effective class attendance such as noise making, learning environments and timetable scheduling.

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**1.0 CHAPTER 1**

**1.1 INTRODUCTION**

Education

Education can be defined as the process of facilitating a learner to acquire knowledge, skills, values, character and beliefs that last for a relatively longer time. Instructional methods involved in teaching and learning include but not limited to teaching, training and discussion. Education process should be under the control of an instructor or teacher

As a branch of knowledge, education deals with the formation and use of technical means and their involvement in life and the society at large to deliver matters pertaining subjects and disciplines such as engineering pure and applied science.

Educational technology

It is a systematic process of combining technological know-how in the use of hardware, software and educational techniques and theories in facilitating teaching and learning. It is the combined use of computer hardware, software and educational theory and practice to facilitate learning. For improvement purposes, education technology creates, uses and manages the process and resources in facilitating effective and efficient academic performance

Educational technology know how is as a result of theoretical and practical knowledge and skills developing from combination of various disciplines such as education, information technology, psychology and communication encompassing theoretical and computer based training.

Instructional Media

This refers to the medium adopted for delivery of skills and knowledge. It encompasses all resources, materials both physical and abstract means that an instructor or a teacher might use to implement classroom instructions teaching and facilitate student’s achievement to achieve set instructional objectives. Materials used include; chalkboard, notes, charts, power points slides, overheads, realia and videotape or films.

1.2 **Background information.**

The term technology in education refers to the use of technological medium in the education process, whether it be primary, secondary and tertiary level of learning. Educational technology often involves the use of computers devices, television broadcasting, and any other forms of mass communication including both hardware and software in instruction. The use of instructional technology is a complex, complicated and integrated process involving people that is the learner and the tutor, procedures, sharing of ideas, use of devices, implementing and managing problems to get solutions in a purposive and controlled learning.

Educational instructors and teachers often employ instructional media, to represent all the other devices that teachers and learners use to support the teaching and learning process.

Technology is a radically changing dynamism in that the understanding of the learning process involves setting of strategies in acquiring or modifying existing knowledge, behaviors, skills values or preferences.

Virtual learning is a computer based instruction prevailing all over world across most of the learning institutions and environments, reshaping of the minds and imposing of advanced roles to both tutors and learners.

Virtual learning has brought about various adjustment and changes in the teaching and learning as follows;

* Learning competencies among the learners has deteriorated. Learners’ reading, writing, and arithmetic competencies have deteriorated at high level. The three fundamental skills are key for the learning development of any learner.
* The learning relationship among the learners and the teachers has been dehumanized. This is as a result of distortion of the relationship between the learners as a result of distance and replacing human being with technological devices.
* Learning virtually has also broken the social engagement among the learners. The long distance has broken their physical interaction
* Virtual learning has increased the socio-economic gap between the learners from the humble background and those from the rich families. This is because the learners from humble background tend to be facing more challenges in accessing learning those from the rich families.

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Classroom technology improves learners’ academic achievement and improves their motivation to accomplish their academic task much easy due to reliance on technology despite the fact that technology tends to severely affect students’ competencies in three skills that are of equal importance to them, namely reading, writing and arithmetic.

Literature affirming and good handwriting at primary and secondary level cannot be achieved by typing document on Information Technology computers or personal laptop and reading are impaired by typing and that information technology brings about by the processing of information, that is why students don’t learn a lot from online websites such as Google or Firefox, like they could have done using the printed books.

Adoption of technology has increased the quantity of information taught in a shorter time and has definitely made students to visualize this information in a better way for example. Presentation of information via power point presentation maps and charts. Overdependence on technology in classroom while teaching has a dehumanizing effect. In that teaching has been ripped from the realm of social and human endeavors and morphed into a technological medium that is slowly usurping the soul of teaching professionalism.

The aspect of depending on technology in education has brought about big gab that technology creates between the learners from the rich and others from the poor background. In that not all learners are from rich families who can easily acquire these instructional materials. Some countries, for example Kenya where a larger population might not afford these devices easily.

**1.3 Statement of the project.**

Lecturers, teachers and students are struggling to handle the use of laptops or even operating using the various systems including online e-learning platforms such as zoom or even moodle. To complete their learning schedule appropriately.

Students are supposed to operate their own devices to use them in classroom to attend the virtual learning which is not available for everyone and even if available their challenges such as power breakdown internet access or even the use of bundles which is costly and not afforded by all students.

Students taking their studies are easily distracted from their classroom concentration. This is because most of them use the devices for social media such as Instagram, play games, instant messaging rather than classwork which is affecting their concentration.

Lecturers and teachers need more technical knowledge, they need access to Information Communication Technology for better improvements of classroom teaching and implementation to keep up with technological advances.

Teachers needs to protect students from immersion in digital technologies and protect student’s behaviors online (safety, legal risk, and privacy).

Not all teachers believe in technology. Teachers don’t believe in using digital technologies as they will fail to transform classes, align with learning goals and integrate technology into a curricular content.

Lack of adequate ICT support and devices, infrastructure, or time. Appropriate access to technical support (classroom, informally) availability of technological devices such as; computer, software, policies.

Therefore, the most affected person here is the poor student who is not going to get an equal chance like that of a student from a rich family hence disparity among students.

* 1. **Objective of the study.**

This study was guided by the following objectives;

1. To investigate on decongestion in the classrooms and other strained school facilities.
2. To relate to the preparation for the future careers and opportunities.
3. To review on Building the capacity to produce competent proffesionals and world class leaders.

**1.5 Significance of the study.**

It is undisputable that technology enhances learning and teaching thus making it more interactive and fun. This is as a result of students being able to interact with each other outside the classroom due to their interactive nature hence enhancing learning and teaching process to become interesting.

This study shall enhance the virtual teaching and learning process to equip the students to acquire multi- tasking skills this is because students are more digital native. These skills are helpful to students to make them competent in the today's world of technology.

Virtual learning helps the learners to learn and understand the concepts taught very well since learning through technology one is not limited, it is much different like relying on books which not everyone can afford especially the students who comes from humble background but technology will helps them to access materials they need through internet at cheaper cost. Also, they have freedom to know more about the contents taught in class thus enhancing learning.

Technology brings a lot of materials and resources to be used in enhancing learning and teaching process. These materials can be readily used by both teachers and students and even the parents can also access. Examples of such resources are computers, tablets. These resources help the students to remain excited with new features and apps hence making learning to be effective.

Technological advancement is an essential concept to learn since it is dynamic and therefore when students are taught through technology, they are in a position to know new skills that are helpful in the world of job markets.

In the process of teaching and learning, technology serves as a teaching resource enhancing the teaching and learning process.

Adoption of technology helps in provision of new information to both teacher and the learner

In addion to that the adoption of technology helps to makes lessons effective, efficient and faster by helping the students to acquire skills in arithmetic skills, narration, reading and writing.

Adoption of technology also helps to ensure that students are involved in mindful thinking. This is because teachers are given an opportunity design meaningful learning experiences that embed technology.

* 1. **LIMITATION.**

Data security.

Complexity.

Work overload.

Cost of using technology.

**2.0 CHAPTER TWO**

**2.1 LITERATURE REVIEW**

There are several key issues in describing the intellectual and technical development of educational technology.Educational technology involves the combinational use of hardware, software, educational theories and practices to facilitate teaching and learning process. Educational technology is fundamental in managing, use and creation of technological process and educational aids and resources’ to complete learners’ education and improve their academic performance. Technological advancement has been described as being initiative seeking to bring learners and teachers their best.

Educational technology is a technological medium such as massive online courses assists in the communication of important knowledge its development and exchange.

Educational technology helps in managing learning systems such curriculum development and education management information systems.

Technologies systems are often accompanied by unrealistic hype among learners and promise regarding their transformative ability and power to improve educational system and wide access by learners. This has been enhanced by the use of; silent films, broadcast radio, and television of which have none has maintained much of foothold in their daily practices.

Despite all that, the adoption of technology does not guarantee effective teaching and learning in that an inappropriate use of technology can hinder it or bring about negative influence on other activities such as watching movies, visiting other social media platforms.

* + 1. **Literature review on decongesting of learning classrooms;**

The number of learners in Kenya’s primary and schools leaves a lot to be desired about. About 15million learners are estimated to be occupying limited number and size of structures such as classrooms in schools to accommodate all of them at once.

The effect of corona virus disease 2019has led to the Ministry of Education to give strict guidelines and measures on how to cap the spread of the disease. This cannot be achieved by using the available limited number of classrooms comparing with the total number of learners who are allowed to occupy one classroom. Implementation of this guidelines seems to be impossible at the moment therefore the government has to come up with other means of offering education which is teaching learners to use of technology in learning. That is virtual application for learners to attend classes such as cloud classes like zoom or google meet and online platforms’ software such as Moodle application for their learning and evaluation.

**2.1.2 Review literature based on career development**

The use of technology helps in development of in career key areas such as employment, generation of income, and skills. The use of technology has a positive effect on the nature of work and what jobs are currently in demand. Today there are many radical types of technical requirements in professional qualification both at casual and executive jobs. Most aspects of employer’s and career requirements are influenced by technology.

**2.1.3 Review literature on capacity expansion**

The need to build technology and technological capacity and infrastructure to support expansion in professional development activities through blended and personalized learning are lacking.

In case the problem is not be solved soon, difficulty in education provision should be expected thus learners may fail to meet their goals in life. The current unbearable conditions in schools for example in public learning institutions in overpopulated areas for example Nairobi county will bring learning to a standstill. Other areas such as Turkana, may not face high population but lack some basic thing to use in there virtual learning for example the internet services also makes learning impossible.

**3.0 CHAPTER 3**

**3.0 Methodology**

**3.1 Introductions**

Teaching students calls for different techniques depending on the level of learning of the learners. For example learning at secondary schools and primary is different from learning at the colleges and university level. Different technological will need to be put in place to meet the need of learners at their level. Instruction using technology has become the best way of teaching student this is due to the current world wide pandemic facing the world; corona virus disease. The use of Educational technology has various ways in which it can be implied such as the use of media program through mass communication like television, computer at homes and others.

This research also focused on different means and ways the use of technology may affect the students’ teacher and academic content coverage taking consideration of Kabarak University’s e-learning and their merits and demerits.

**3.2 Research design method**

In doing this research, we adopted a qualitative and action design method. This is because as a group we felt that these are the appropriate methods because most of us were currently doing online study by the use of zoom and moodle hence carrying out a quantitative research would be difficult.

**3.3 Location of the study**

Our research was based at Kabuo (Kabarak University Online). To narrow down the respondents we focused on school of education and more specifically targeted the teachers in training taking Arts courses.

Specifically, being members of the deoartment,we felt comfortable working with the department as this would enhance us getting updated and first hand data from the respondents. Also it did not require a technical previst study which could have made the study costly.

**3.4 Population of the study**

The total number of students taking education course is estimated to be around three thousand. In sample collected, education students taking arts courses are estimated to be seven hundred, out of which only four hundred and fifty were taking online, e-learning studies for the semester three year 2020.

Out of the four hundred and fifty, two hundred use their mobile phones in accessing online studies. The other two hundred either use computers, laptops or tablets.

* 1. **Sampling procedure**

We opted for cluster sampling technique, enabling us to separate students taking barchelor of education arts and those taking barchelor of education science. We further grouped students per their sujects combination in that the education system requires teachers in training to take two subjects for training except English and literature which is considered as two subjects.

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| SUBJECTS COMBINATION | NO. OF TEACHERS IN TRAINING |
| Geography/Kiswahili | 35 |
| Geography / C.R.E | 40 |
| Kiswahili /history | 85 |
| Kiswahili/C.R. E | 70 |
| History/ C.R.E | 100 |
| Geography/math | 50 |
| History/geography | 70 |

**3.6 Data collection procedure**

We adopted various techniques in our data collection. They include tallying the number of learners taking online studies via zoom and Moodle platforms.

We also administered questionnaire that we share online.

**4.0 Scope of the study**

1. **Cost of upgrade.**

One of the biggest challenges in school owners is handling of technical wares like software and their applications. Such a challenge requires an inclusive survey something that has to be planned for when the technology is first installed. The administrator should ask themselves whether they are in position to;

* Empower their learners to accomplish their tasks via the selected virtual learning system.
* Access software necessary for offering virtual learning.

1. **Troubleshooting.**

Technology makes learning more productive despite this fact; learning based on virtual platforms may experience challenges. Such challenges may require expertise or upgrading. A time the system will have to shut down the other systems thus disadvantaging students from accessing learning materials, lessons and assignment or even attending classes. This may time to have simple repairs done. It’s often a good idea to compare the options of repairing vs replacing technology and looking for a good cost estimates for both from a trusted IT technician.

1. **Cybersecurity.**

In our survey, ninety four percent (94%)of the respondents mentioned cyber-security as a major challenge they anticipate to face. Almost fifty percent of them reported that they have had fallen victim cyber-security. Indeed, the effects of cyber security are costly in terms of time, money and resources. Therefore, it is important that provision of virtual learning be accompanied by tight security to safeguard the learners and the tutors.

1. **Development in infrastructure.**

Investment is fundamental in developing and administering effective e-learning. In this response, school management and administrators’ need to provide necessary infrastructure. Developing a long term plan is fundamental and remedy to short term problem that may arise.

Schools need to install strong internet network, updated software and skilled technicians.

**5.0 Conclusion.**

Education technology is the way to go, in this response institutions need to carry out a proper reach and implement their plans to the latter. It is good also to note that different disciplines may necessitate different medium for instruction. This study hence is just an attempt to give a solution to the current calamities faced in our learning institutions.

For the betterment of the virtual learning there is a need to consult the technicians and computer experts to address problems that learners and teachers may face in provision education. This should be accompanied by technical development and adjustments to suites different learning conditions.

All stakeholders also need to create and develop strong vision and mission on the role of technology and the necessary achievement desired to be put in place.

Finally, continuous training and support is key in maintaining and motivating the teachers and students I embracing virtual learning and teaching. This is a remedy in preparing a wholly prepared society to embrace virtual learning.

**Recommendations**

The study came up with a number of recommendations’ that need to be implemented if a successful learning system via virtual means has to be met. Some of the recommendations are as follows;

* Schools need to carry out awareness campaign and educate learners and teachers regularly on the various available systems. This will enhance learners and teachers receive updated information hence be motivated to achieve the learning objectives.
* In addition to that, socio-economic factors of learners should be taken into consideration if effective and efficient learning has to be achieved. If need be the provision of subsidized gadget and internet bundles should be considered.
* Also the need for curriculum development to integrate technology in learning should be carried out to train on the best way of carrying out virtual learning. The government should set the necessary laws that may necessitate institutions of higher learning train teachers on the best way for offering virtual learning.
* Finally, the government through the ministry of education should motivate teachers to adopt the use of technology in instruction.

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