

**THEME: INNOVATIONS FOR EDUCATIONAL RESILIENCE**

**SUBTHEME: PROMOTING EQUITY AND INCLUSION**

**TITLE: OVERCOMING CHALLENGES ARISING FROM ONLINE TRAINING IN TVET INSTITUTIONS IN KENYA**

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**Abstract**

The Covid-19 disease has significantly disrupted the education sector, a critical determinant of a country's economic future. To curb the spread of Covid-19 in Kenya, the closure of schools, social distancing among other measures proposed by WHO, immensely affected teaching and learning methods. As a result, most Kenyan institutions, including the TVET institutions, have adopted online training as a new approach to teaching and learning. The objective of this study is to determine the challenges as well as the opportunities and offer possible solutions to the challenges arising from online training. Data was collected from five TVET institutions in Meru County. Our target population was 400 trainees and 50 trainers. 293 trainees and 34 trainers responded. We employed a random sampling method using questionnaires. The research highlights major challenges such as lack of a national and comprehensive digital training policy framework, Limitations of the internet in some parts of the country, Quality Assurance concerns, Socioeconomic factors, Students' lack of self-motivation and reduced face-to-face student support. However, the opportunities that arise from online training outweigh the challenges. Some of the opportunities realized from our research are: Trainers and learners gain experience using web-based tools and technologies, efficient time management, extended geographical access to education by enabling lessons to be conducted on a remote location, need for more physical facilities especially classrooms interactivity between teachers and learners, online training offers a combination of education with work and many more opportunities as discussed in the paper. From our results, online training has been positively embraced by the majority of trainees and trainers though with some challenges. Additionally, our study shows that majority of the trainers and trainees did not use online training before the Covid-19 pandemic. From the analysis of our results, we recommend online training as an alternative to face-to-face training in TVET institutions during this Covid-19 pandemic period and post Covid-19 in Kenya. The results of our study have been presented using tables and graphs.

**Keywords: online training, TVET, challenges, opportunities, Covid-19**

## **INTRODUCTION**

Covid-19 was declared by WHO as a public health emergency of international concern on 30<sup>th</sup> January 2020. Kenya reported its first case of covid-19 in March 2020. Kenya and the world at large put many measures to curb the spread of the virus by enacting laws to govern the interactions of humans as per the WHO guidelines. Covid -19 disrupted the provision of many essential services, such as education. Further, its effect on the economy of the world is chilling.

The MOH Kenya enforced these guidelines, especially the social distancing, 1.5 m rule, wearing of masks, hand washing using security agencies, such as police officers. Penalties were also imposed on lawbreakers. Schools were closed by 16<sup>th</sup> march 2020 in anticipation of high cases of the virus and re-opened partially in October 2020. It was noted that social distance was impossible to keep in our physical rooms, hence the decision.

In Kenya, the education sector was greatly affected since the learning approach used in our TVET institutions was face-to-face learning. Social distancing affected this mode of teaching and learning, hence the ministry of education, with other stakeholders introduced online learning to TVET institutions to cater for lost time. It was underutilized in the past, especially in Kenya. With the covid-19 pandemic, the TVET institutions have been a force to rely on it for continuity in the education sector. This is has brought challenges and opportunities in training and learning in our institutions.

## **LITERATURE REVIEW**

Online training and learning as become a key tool in learning and teaching in TVET institutions. The State Department of VVT, through, a circular dated April 2020 required all TVET institutions to put up infrastructure and build capacity for online learning and teaching. Trainers and trainees were to be made aware of this new development. Many TVET institutions have now put up the office of ODEL to ensure online learning and teaching is taking place. A lot of literature has been written about online teaching and learning. Dorothy N, M. et al (2016) has enumerated challenges of online teaching as; heavy workload by lecturers, inadequate computers, and negative attitude about E-learning among other challenges. Further, they offer solutions to some of these challenges encountered in online learning such as; increased funding to put up infrastructures for e-learning. John K, T. et al (2015) cites benefits of online training as; ease of access to information, scalability i.e. e-learning solutions are highly scalable. Additionally, they cited challenges such as inadequate ICT, financial constraints and lack of technical skills as major impediments to online training and learning in their study. They offered solutions such as the expansion of ICT infrastructure, motivation for staff to alleviate impediments. Song et al (2004) in their studies noted that students feel that lack of motivation, difficulties in understanding instructional goals and technical problems are major barriers for online learning. Kathula D, N (2021) noted, integration of technology in teaching and learning is not rapid despite technological advancement. Many barriers still exist and need to be addressed. Shivanji D (2020) in his extensive studies on online learning, a panacea in time of covid-19 crisis, carried out studies on the importance of E-learning, strength, weaknesses, opportunities and challenges(SWOC) analysis and noted that online learning is not an option, but a necessity. He enumerated challenges such as downloading errors, login problems and installation issues as major barriers. Further, he noted, most learners were feeling bored and unengaging. He suggested that online courses must be made more dynamic, interesting and interactive.

## **STATEMENT OF THE RESEARCH PROBLEM**

Covid-19 has posed a major challenge to the normal classroom teaching and learning methods, hence affecting smooth learning in TVET institutions. Social distancing and other measures put in place to curb the spread of the virus have created a new normal in learning and teaching.

### **Objectives of the study**

The study seeks to;

- i) Find the opportunities and challenges presented by online training and learning in TVET institutions in Kenya.
- ii) Find solutions to top possible challenges.

## **Methodology**

A sample of five Institutions in Meru County was chosen. That is Meru National Polytechnic, Karumo Technical Training Institute, Mitunguu Technical Training Institute, Kiirua Technical Training Institute and Nkabune Technical Training Institute. Questionnaires in form of google forms were sent to the target audience. Quantitative data was analyzed using SPSS 20. *Word and phrase repetitions* method was used to interpret and analyze open-ended qualitative responses.

## RESULTS AND DISCUSSIONS OF THE STUDY

### INSTITUTION ANALYSIS

INSTITUTION	TRAINEES' FREQUENCY	TRAINEES' PERCENTAGE	TRAINERS' FREQUENCY	TRAINERS' PERCENTAGE	ADMINS' FREQUENCY	ADMINS' PERCENTAGE
Meru National Polytechnic	244	83.2	16	47.1	2	50
Karumo Technical Training Institute	10	3.4	8	23.5	0	0
Mitunguu Technical Training Institute	9	3.1	1	2.9	0	0
Kiirua Technical Training Institute	19	6.5	6	17.6	2	50
Nkabune Technical Training Institute	11	3.8	3	8.8	0	0
<b>TOTAL</b>	<b>293</b>	<b>100%</b>	<b>34</b>	<b>100%</b>	<b>4</b>	<b>100%</b>

244 (83.2%) trainees were from The Meru National Polytechnic, 10 (3.4%) were from Karumo Technical Training Institute, 9(3.1%) were from Mitunguu Technical Training Institute, 19 (6.5%) were from Kiirua Technical Training Institute and 11 (3.8%) respondents were from Nkabune Technical Training Institute.

16(47%) Trainers were from the Meru National Polytechnic, 8 (24%) from Karumo Technical Training Institute, 1 (3%) from Mitunguu Technical Training Institute, 6 (18%) from Kiirua Technical Training Institute and 3(9%) trainers were from Nkabune Technical Training Institute.

2(50%) respondents were from the Meru National Polytechnic and 2 (50%) were from Kiirua Technical Training Institute.

### ONLINE LEARNING AS A METHOD OF LEARNING TVET INSTITUTIONS ANALYSIS

Do you use online learning/training as a method of learning in your institution?	TRAINEES' FREQUENCY	TRAINEES' PERCENTAGE	TRAINERS' FREQUENCY	TRAINERS' PERCENTAGE	ADMINS' FREQUENCY	ADMINS' PERCENTAGE
YES	269	91.8%	30	88.2%	4	100%
NO	24	8.2%	4	11.8%	0	0%
TOTAL	293	100%	34	100%	4	100%

269(91.8%) trainees answered they use online training as a method of learning in their institutions while 24 (8.2%) answered they do not. 30 (88.2%) trainers indicated they use online training as a method of teaching in their institutions while 4(11.8%) don't. 4 (100%) admin respondents responded yes, to use online training as a method of teaching and learning in their institution.

### ONLINE LEARNING AS A METHOD OF LEARNING TVET INSTITUTIONS BEFORE THE COVID-19 PANDEMIC

Did you use online learning/training as a method of learning in your institution before the Covid-19 pandemic?	TRAINEES' FREQUENCY	TRAINEES' PERCENTAGE	TRAINERS' FREQUENCY	TRAINERS' PERCENTAGE	ADMINS' FREQUENCY	ADMINS' PERCENTAGE
YES	101	34.4%	9	26.5%	1	25%
NO	192	65.6%	25	73.5%	3	75%
TOTAL	293	100%	34	100%	4	100%

101 (34.4%) trainees answered they used online learning/training as a method of learning before the Covid-19 Pandemic while 192 trainees (65.6%) answered they did not. 9 (26.5%) trainers indicated they used online training as a method of teaching before the Covid-19 pandemic while 25 (73.5%) trainers didn't. 3(75%) admins indicated that they did not use online training as a method of teaching before the covid-19 pandemic while 1 (25%) did.

## **ACCESSING CHALLENGES AND OPPORTUNITIES IN ONLINE TRAINING AS A METHOD OF TEACHING AND LEARNING**

### **CHALLENGES**

#### **TRAINEES**

##### **Word processing and spreadsheet software**

50 trainees strongly agree, 69 agree, 107 disagree and 43 strongly disagree to have word processing and spreadsheet software such as Microsoft word and excel. This shows that most trainees do not have the necessary word processing and spreadsheet software.

##### **Delivering a complete course online**

The trainees finally asked if they believe a complete course can be given by the internet without difficulty. 53 trainees strongly agreed, 77 agreed, 89 disagreed and 50 strongly disagreed. Hence most trainees feel that a complete course cannot be given by the internet without difficulty. However, almost the same number of trainees also believes that a complete course can be given on the internet without difficulty.

#### **BOTH TRAINEES AND TRAINERS**

##### **Network connection of respondents home**

Out of the 269 trainees who stated they use online training as a method of learning in their institutions, 28 trainees strongly agreed, 78 agreed, 116 disagreed and 47 trainees strongly disagreed that their homes have an adequate network connection. Out of 30 trainers who indicated they use online training, 9 strongly agreed, 8 agreed, 10 disagreed and 3 strongly disagreed. This means that most homes of the trainees' and trainers' homes do not have an adequate network connection.

##### **Internet Costs**

Trainees and trainers were asked if the internet/WIFI costs are friendly and they can attend online classes. 17 trainees strongly agreed, 67 agreed, 124 disagreed and 61 strongly disagreed. 3 trainers strongly agreed, 10 agreed, 12 disagreed and 5 strongly disagreed. This shows that internet costs are not friendly to most of the trainers and trainees to facilitate online training.

##### **Distractions with various activities**

77 trainees strongly agreed, 116 agreed, 56 disagreed and 20 strongly disagreed to be distracted with various activities at home. 1 trainer strongly agreed, 18 agreed, 7 disagreed and 4 strongly disagreed. This shows that most trainees and trainers are distracted by various activities at home.

##### **Increased participation**

Trainees were asked whether online training has helped them increase their class participation. 44 trainees strongly agreed, 89 agreed, 102 disagreed and 34 strongly disagreed. Trainers were asked whether online training has helped student participation in class. 3 strongly agreed, 8 agreed, 16 trainers disagreed and 3 strongly disagreed. Both analyses show that there is decreased student participation in online classes than in face-to-face classes. However, it also shows that online training has helped quite a good number increase their participation in class.

## **OPPORTUNITIES**

### **TRAINERS**

#### **I have been adequately trained to use online training software tools:**

6 trainers strongly agreed, 18 agreed, 6 disagreed and no trainer strongly disagreed to have been adequately trained to use online training software tools. This means that most trainers have been adequately trained to use online training software tools.

#### **I am fully conversant in using online learning management systems for training:**

7 trainers strongly agree, 17 agree, 5 disagree and 1 strongly disagrees to be fully conversant in using online learning management systems for training. This shows that most trainers are fully conversant in using online learning management systems for training.

#### **I have adequate devices needed to attend online classes i.e mobile phone, computer, laptops or headphones:**

Out of 30 trainers, 7 strongly agree, 13 agree, 9 disagree and 1 strongly disagrees to have adequate devices i.e. mobile phones, computers, laptops and headphones needed to attend online classes. This shows that most trainers have adequate devices to attend and train in online classes.

#### **There is extended geographical access to education due to online training:**

5 trainers strongly agreed, 18 agreed, 5 disagreed and 2 strongly disagreed that there is extended geographical access to education due to online training. This shows that most trainers agree there is extended geographical access to education due to online training.

#### **Delivering a complete course online**

The trainers were also asked if they believe a complete course can be given by the internet without difficulty. 7 trainers strongly agreed, 13 agreed, 8 disagreed and 2 strongly disagreed that a complete course can be given by the internet without difficulty. This shows that most trainers believe that a complete course can be given by the internet without difficulty.

### **TRAINEES**

#### **Computer technology and skills**

The questionnaire also evaluated whether trainees possess sufficient computer and technology skills for doing online studies. 60 trainees strongly agreed, 60 agreed, 82 disagreed, and 37 trainees strongly disagreed. This indicates that most trainees possess sufficient computer and technology skills for doing online studies.

#### **Comfortability with communicating online**

Trainees were asked whether they are comfortable communicating electronically. 67 strongly agreed, 109 agreed, 67 disagreed and 26 trainees strongly disagreed. This shows that most trainees are comfortable in communicating electronically although quite a number are not.

#### **Reduced costs**

56 trainees strongly agreed, 105 agreed, 67 disagreed and 41 strongly disagreed that online learning has reduced costs to attend face-to-face classes. This shows that most trainees feel that online training has reduced costs that were incurred to attend face-to-face classes.

#### **Self-disciplined to attend online classes**

Out of the 269 trainees that indicated they use online training, 89 strongly agree, 114 agree, 49 disagree and 17 strongly disagree that they are self-disciplined and find it easy to attend online classes. This is an advantage as most trainees feel that they are self-disciplined to attend online classes.

### **Combining work with online studies**

62 students strongly agreed, 106 agreed, 73 disagreed and 28 strongly disagreed that they can combine their education with work. That shows that most trainees can study while they are working.

### **Motivation**

Trainees were also asked if they believe that learning on the internet is more motivating than learning in the classroom. 33 trainees strongly agreed, 77 agreed, 114 disagreed, 45 strongly disagreed. This indicates that most trainees do believe that learning on the internet is more motivating than learning in the classroom.

### **Student support from trainers**

Trainees were then asked if they have enough student support from their teachers during online classes. 55 strongly agreed, 102 agreed, 83 disagreed and 29 strongly disagreed. This shows that most students receive student support from their trainers.

## **BOTH TRAINEES AND TRAINERS**

### **Time management**

39 trainees strongly agreed, 110 agreed, 92 disagreed and 28 strongly disagreed to be able to manage their time efficiently outside class in order to attend online classes. 5 trainers indicated that they strongly agree, 17 agree, 7 disagree and 1 trainer strongly disagree to be able to manage their time more since the commencement of online training. This indicates that most trainers and trainees can manage their time more since the commencement of online training.

### **New technology skills and experience using web-based tools due to online learning**

78 trainees strongly agreed, 128 agreed, 38 disagreed, and 25 strongly disagreed while 7 trainers indicated they strongly agree, 17 indicated they agree and 6 indicated that they disagree to have gained new technology skills and experience using web-based tools due to online learning. This shows that online training has resulted in most trainees and trainers gaining new technology skills and experience using web-based tools.

## **POSSIBLE SOLUTIONS TO THE CHALLENGES OF ONLINE TRAINING REALIZED**

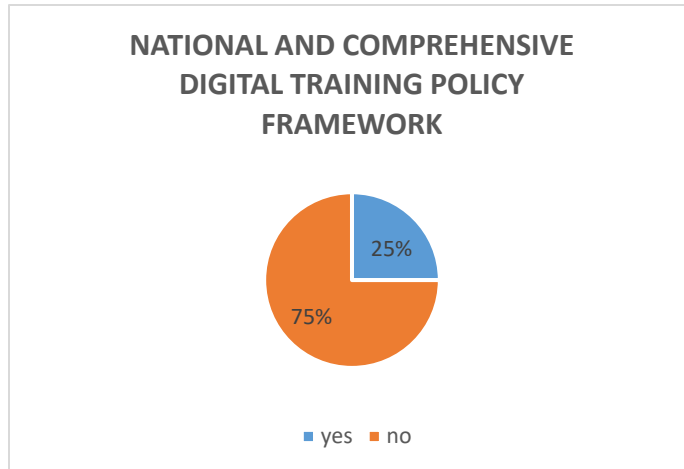
Trainees and trainers were asked to suggest possible solutions to the realized challenges. Solutions provided were:

1. Access to strong WIFI –WIFI should be installed in various institutions, increased WIFI points to institutions with already installed WIFI to reduce buffering and congestion.
2. Provision of bundles/reduced data prices (student plans from internet providers) – It was suggested that institutions should have student plans which will enable them to purchase internet bundles at a very cheap price to enable them to attend online classes since most of them argued that they do not afford them.
3. Physical classes- trainees and trainers suggested that physical classes should be blended with online classes to facilitate classes with practical units.
4. Other trainees stated that their areas of residence do not have enough network to facilitate them to attend online classes. Therefore, trainees suggested that their area networks to be boosted.
5. The institution ensures that all practical classes are on the same day of the week to reduce costs of to and from school.
6. Courses taught online to be charged differently with courses taught physically since students are incurring more charges related to data charges.
7. Ensure online learning systems are user-friendly.
8. The county government should set up at least a few rooms in different sub-counties with computers to favor students who don't have smartphones and also those from humble backgrounds.
9. The county governments should ensure that every part of the county has access to electricity.
10. Personal discipline and commitment to time.
11. Institutions to work on trainee and trainers' attitude towards change management.
12. Sensitization and Inculcation of online interaction for trainees and trainers before, during and after admission.



## NATIONAL AND COMPREHENSIVE DIGITAL TRAINING POLICY FRAMEWORK

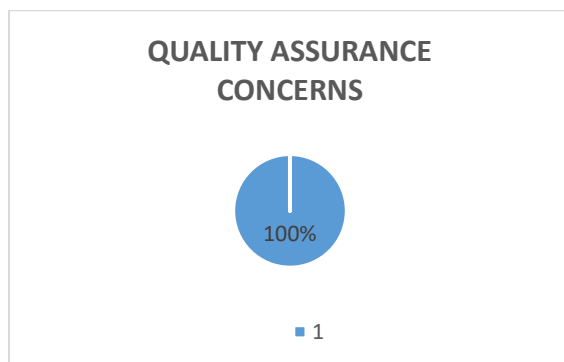
To your Knowledge, is there a national and comprehensive digital training policy framework?	Frequency	Percent
yes	1	25%
no	3	75%
Total	4	100



Respondents from the Administration/Quality assurance questionnaire were asked if there is a national and comprehensive digital training policy framework. 1 (25%) respondent there is while 3 (75%) responded to being no national and comprehensive digital training policy framework.

## QUALITY ASSURANCE CONCERNS

Does your institution have any quality assurance concerns with online learning?	Frequency	Percent
yes	4	100%



Respondents from the Administration/Quality assurance questionnaire were asked if their institutions have quality assurance concerns with online training and all respondents responded that there are concerns. They were then asked what the quality assurance concerns were and they responded as follows:

1. Time to cover the syllabus
2. Practical competence not well covered
3. Quality of Education has been compromised due to less Quality content delivery due to lack of physical interaction
4. Maintaining trainees in class and control of class since several trainees do not know how to manage their microphones
5. The integrity of trainees during online examinations.

### **CONCLUSIONS AND RECOMMENDATIONS OF ONLINE TRAINING AS AN ALTERNATIVE TO FACE TO FACE TRAINING**

After accessing possible challenges, opportunities and possible solutions to challenges encountered, respondents were asked whether they recommend online training as an alternative to face-to-face learning. They gave the following responses:

<b>Do you recommend online training as an alternative to face to face</b>	<b>Trainees Frequency</b>	<b>Trainees Percentage</b>	<b>Trainers Frequency</b>	<b>Trainers Percentage</b>	<b>Quality Assurance Frequency</b>	<b>Quality Assurance Percentage</b>
Yes	149	50.9	27	79.4	3	75
No	144	49.1	7	20.6	1	25
Total	293	100	34	100.0	34	100.0

149 (50.9%) trainees recommend online training as an alternative to face to face while 144 (49.1%) do not. Out of the 34 trainers, 27 (79.4%) answered yes and 7 (20.6%) answered no. 3(75%) of respondents from quality assurance and administration answered yes and 1(25%) answered no. This shows that most of the respondents recommend online training as an alternative to face to face training.

### **CONCLUSIONS**

The respondents were finally asked what their final comments were. They indicated the following:

1. There is low student attendance due to high internet costs.
2. Practical courses that mostly require physical classes are disadvantaged.
3. Lack of proper connection between trainers and trainees due to network challenges.
4. Laptops and smartphones are expensive.
5. Online training is good when all the resources are available that is data, reference materials and the experts to coach others while training.
6. Online training has enabled learners to gain more technological skills.
7. Online training can be helpful though with some challenges. Trainees can have free time to do any other work when there are more online classes than physical classes.
8. It saves the cost and time for students commuting from far places.
9. It has created a medium where students can freely interact and share their content academic wise. – increases the confidence of trainees.
10. It enables trainees to attend classes from wherever they are.

## **RECOMMENDATIONS**

From our research study, online learning is an alternative method of learning as it reduces face-to-face contact and so more during the Covid-19 pandemic. We recommend the following to make online learning and training an effective tool of learning.

1. Establishing Computer hubs which are adequately equipped in every county in Kenya which are free or pocket friendly to trainees. This will create equity to trainees who are not able to afford electronic equipment for learning since they will have access to the infrastructure/personnel put in place in the computer hubs. Additionally, employment will be created for the youth.
2. Capacity building for trainees and trainers should be increased to ensure both trainers and trainees have sufficient computer/technological skills.
3. Benchmarking in developed countries that have put in place infrastructure for online training and learning; how they take care of differently abled students such as blindness, Computer literacy levels and the effect on online learning, policies guiding online learning among others.
4. Countries should formulate regulations and policies to guide on online learning and teaching, on ethics and general procedures on online learning.
5. The government of Kenya should give tax waivers on electronic gadgets purchased by trainers and trainees.

Generally, online learning and training is a good tool during this Covid-19 pandemic. We need to embrace it and move with speed to solve the already existing challenges.

**Definition of Terms**

WHO – World Health Organization

TVET – Technical Vocational Education and Training

VTT – Vocational Technical Training

ODEL – Open Distance e-Learning

ICT – Information Communication Technology

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