



## **ICT Adoption in Teaching and Learning in TVET Teacher Institutions in Uganda: The Case of National Instructors' College Abilonino**

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### **Abstract**

*There has been rapid development in the technology sector all over the world; however, this has not influenced the use of ICT in teaching and learning in developing countries. This study was carried out to examine teachers' capacity to use ICT tools, what kind of ICT tools they use and the use of ICT tools in teaching and learning in TVET teacher training institutions in Uganda. The study employed both qualitative and quantitative methods to collect data from respondents. The study used Krejcie & Morgan table to select respondents for the study. The study employed a questionnaire to collect data from respondents. Data analysis was done using statistical package for the social sciences. The results of the study indicate that 63% of the teachers had the capacity to use ICT tools in teaching and learning. The study found out that teachers who had basic skills in ICT use were 53%, intermediate skills in ICT use 38% and advanced skills in ICT use were 9%. Teachers were using desktop computers, laptop computers and internet in teaching and learning. However, the results also indicate that there were no electronic learning infrastructure in the institution (0%). Therefore, this implies that teachers were prepared to use ICT tools in teaching and learning during training and after training. Generally, the study results indicate that the majority of the teachers were using ICT tools in teaching and learning (88%). However, 12% of the teachers were not using ICT tools in teaching and learning. Therefore, there is need for the institution to establish the causes and develop ICT policy to guide teachers and learners.*

**Key words:** *ICT tools, use, teaching and learning practices*

### **Introduction**

The rapid development of information and communication technologies has sparked the creative incorporation of ICT tools into current teaching and learning processes (UNESCO, 2011). ICT includes a variety of electronic tools designed to gather, record, store, exchange and distribute information to others (Anderson, 2010). Further, he adds that the use of ICT in education has encouraged students to create content, share resources and interact with peers to increase their performance. In educational institutions, access to learning resources, real-time communication, and access to research sources are simplified using ICT and they can enhance classroom-based methods by integrating ICT supported learning methods into traditional approaches (Jung, 2005). In practice, ICT-supported learning can be viewed as web-supplemented, web-dependent, mixed mode or purely online learning system (Michael, 2014). He further argues

that several ICT-supported learning systems have been developed and improved interaction, better access to resources, reduced operating costs and reliable

communication among users are reported benefits of having an ICT-supported learning environment.

Teacher training institutions in Uganda have been equipped with ICT devices such as internet, desktop computers, Laptop computers and mobile technologies to support use of ICT in teaching and learning. Staff has acquired various training in the use of ICT in teaching and learning practices within Uganda and abroad through Teacher Training Education project (TTE). This project has funded academic staff to attend electronic learning conferences in Uganda, Ethiopia and Egypt. In addition, benchmarking activities were organized for academic staff and top managers to visit Kenya Technical Teachers College, Rift Valley Technical Institute and University of Nairobi to learn best practices about ICT use as a teaching tool. With the availability of all the above services, one would expect academic staff to accept use of ICT in teaching and learning given that the current generation of students are ICT savvy. Despite these initiatives, teacher training institutions are still facing challenges of ICT integration in teaching and learning. Teachers have failed to use ICT tools in teaching and learning due to lack of skills and knowledge. Furthermore, ICT was seen as an extra burden to the teachers and administrators rather than an item to enhance teaching and learning (MEOSTS, 2013). Hence the need for this study to investigate whether teachers in TVET teacher training institutions were prepared during pre-service and in-service training to embrace ICT tools in teaching and learning.

### **The Specific Objectives of this Study were:**

1. To determine teachers' capacity to use ICT tools in teaching and learning
2. To establish the kind of ICT tools used in teaching and learning
3. To determine the level of ICT use in teaching and learning

### **Literature Review**

Abilonino National Instructor's College is a public provider of pre-service and in-service training for technical teachers and instructors in the TVET system. The College is situated in northern Uganda and was established in 2002 to train technical teachers/instructors for TVET institutions such as Technical Institutes, Community Polytechnics, Vocational Training Institutions and others. The program offered in the College is a two-year Diploma in Instructor Technical Teacher Education (DITTE). Teacher training institutions must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. These institutions must also provide leadership in determining how the new ICT technologies will be used in the context of culture, needs and economic conditions within the country. Teacher training institutions also need to develop strategies and plans to enhance the teaching learning educational programs and to ensure that all future teachers are prepared to embrace technological innovations required in the 21st century (UNESCO, 2011).

Most institutions of higher learning in European countries have embraced ICT technologies in teaching and learning processes (Micheal, 2014). Furthermore, they indicate that these institutions blend ICT technologies with traditional methods of teaching and learning processes. ICT is a catalyst for change in the way lectures are conducted in higher institutions of learning in European countries. ICT integration in teaching and learning has enhanced learners' performance, powered by growth in the internet, with decreasing costs, increasing bandwidth and growing band content (elearning Africa, 2015). Furthermore, it shows that the accessibility and connectivity, costs and financing, political will and policies, leadership and strategy, change in attitudes and awareness, skills and training, and curriculum integration are the key features of the ICT landscape in educational institutions.

Learners who use ICT for academics have a higher possibility of contributing and participating in active, academic collaboration with other students (Kituyi, 2012). He adds that collaboration promotes a deeper connection between the students, educators, and course content. Learners are empowered to collaboratively work on the same task through ICT technologies in classrooms and outside classrooms. This stimulates the learners to think critically and individually. The integration of ICT in education supports teachers and learners to create a virtual community that leads to better content learning among higher institutions of learning. The Government of Uganda developed its initial National ICT Policy in 2003 with its main objective of integrating ICT into educational curricula as well as other literacy programmes to provide for equitable access for all students regardless of the academic level. With the establishment of a Ministry of ICT in Uganda in 2006, various policies have been developed in the Ministry of Education and Sports such ICT policy on education for primary and secondary schools which aims at training teachers in ICT skills, is in operation (Government of Uganda, 2007). In higher education, ICT policy is not particularly integrated and initiatives are taken on an individual institutional basis with the Ministry and other partners. It adds that there have been numerous efforts and resources directed at improving teachers competence and confidence in using ICT effectively in classroom teaching and learning. Various ICT initiatives in Uganda have been put in place by private companies and non-governmental organizations to provide internet connectivity to higher education institutions (elearning Africa, 2015). For instance, MTN Uganda, Uganda's largest telecommunication company has implemented an online education platform for 50 secondary schools in Uganda. Other development partners such Japan International Cooperation Agency (JICA), Belgian Development Agency (BTC) and UNESCO are also funding integration and use of ICT in education to active teaching and learning.

The integration of ICT in classrooms is the responsibility of institutions and teachers depending on the nature of the content and the methodology. Teachers can help learners to develop creativity through collaboration (Kituyi, 2012). The teacher and students can use ICT tools to work on the content collaboratively in classroom and outside classroom environments (Farrell & Walcholz). The

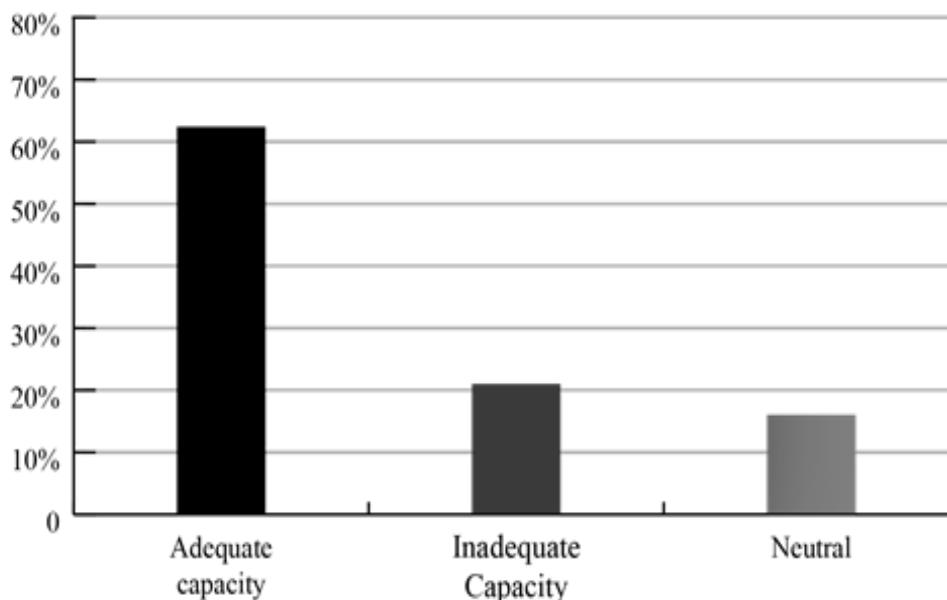
government of Uganda is emphasising skill training at all levels to combat poverty and create jobs for the youth (Government of Uganda, 2007). The Uganda vision 2040 to be achieved requires well trained teachers to embrace ICT tools in teaching and learning in teacher training institutions. The use of ICT tools in teaching and learning in TVET teacher institutions was low and most teachers were using traditional methods because they lacked skills to use ICT tools in teaching and learning (MEOSTS, 2013). It was affecting learners' performance in class and at work places. During the implementation of the recommendation to integrate ICT in education, what was done was the introduction of ICT as a separate subject, requiring additional resources - both human and physical. And therefore ICT is seen as an extra burden to the teachers and students rather than a tool to enhance teaching and learning. This report further indicated that teacher training in Uganda was characterized by inadequate ICT infrastructure to support use of ICT tools in teaching and learning. In addition teachers lacked skills to use the few available ICT tools in and outside class activities. This was due to nature of training acquired during pre-service and in-service training. However, majority indicated that they were longing to acquire ICT skills required for the 21st century.

The Education Sector Strategic Plan (ESSP) (MOEST, 2004) also calls for a review of the curriculum that will link them more closely to Uganda's national development needs and those of the labour market (Kajubi, 1989). The plan promised, in particular, to give the highest priority to technology that includes ICT and other subjects critical to Uganda's national development. To achieve the requirement of this policy, the College has improved in terms of ICT hardware, internet connectivity and the teaching of ICT to create computer-literate technical teachers/instructors. With the support from BTC under the TTE project, teachers have been trained and equipped with ICT skills and knowledge required in active teaching and learning. In addition, TTE project has improved ICT infrastructure to support active teaching learning activities in the college. The majority of the teaching staff are using ICT tools in preparation and conducting lessons in the college. This has positively impacted to learner's performance in and outside the classroom. Teachers and learners use social networking platforms to interact, collaborate and share limited learning resources in the College.

## **Methodology**

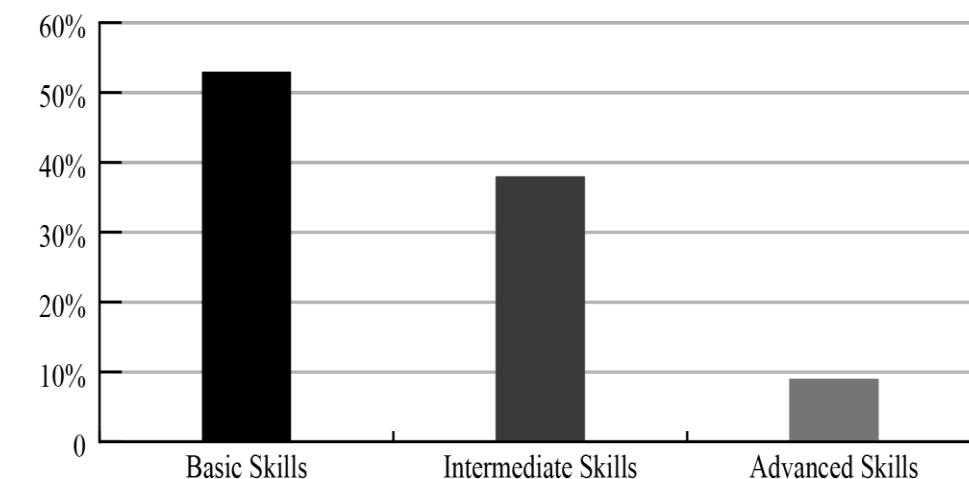
This study employed both quantitative and qualitative methods to collect data. The study participants were teachers and pre-service students of National Instructors' College, Abilonino. Sample size of eighty five (85) teachers and students was used. Krejcie & Morgan table (1970) was employed to select 85 respondents for the study. Data was collected using a questionnaire. Data analysis was done using Statistical Package for the Social Sciences (SPSS).

## **Findings**



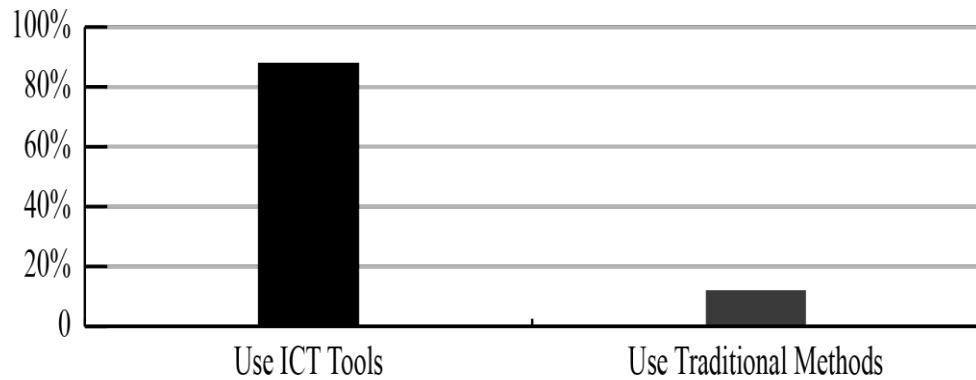
*Figure 1: Teachers and Students Capacity to use ICT Tools*

The results indicate that 63% of the teachers had capacity to use ICT tools in teaching and learning processes compared to 21% of the teachers who don't have the capacity to incorporate ICT tools in teaching and learning activities. In addition, 16.4 % of the teachers were neutral. This implies that most of the teachers were able to use ICT tools in the teaching and learning.



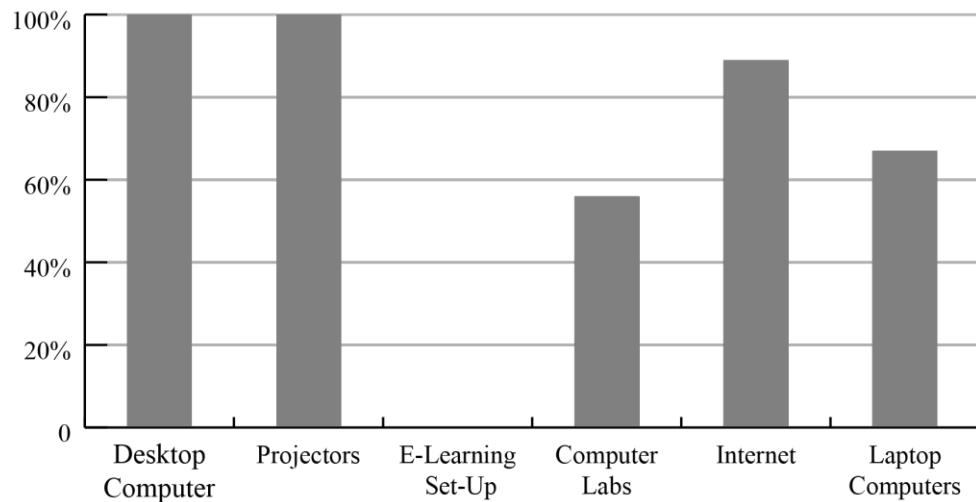
*Figure 2: Level of Teachers' Skills and Knowledge to Use ICT Tools*

The study found that, majority (53%) of the teachers had basic skills and knowledge to use ICT tools in teaching and learning process. Forty six (46%) of the teachers had intermediate and advanced skills in the use of ICT tools in teaching and learning. This implies that teachers had the skills to use ICT tools in Teaching and learning.



*Figure 3: ICT Use in Teaching and Learning Practices*

Findings indicate that 88% of the teachers use ICT tools in teaching and learning while 12% of the respondents disagreed. This implies that most of the teachers use ICT tools in teaching and learning and a few who still using traditional methods in teaching and learning must be encouraged to use the skills.



*Figure 4: ICT Tools Used in Teaching and Learning Processes*

The results in above chart identified desktop computers (100%), projectors (100%), internet (89%) and laptop computers (67%) as most commonly used ICT tools in teaching and learning processes. However, this study also revealed that electronic learning set ups were not available in teacher training institutions (0%). This shows that integration ICT in learning and teaching is already embraced and those teachers who are not trained should be focused on by the projects in future.

## Conclusions

The purpose for this study was to investigate whether teachers in TVET teacher training institutions were prepared during pre-service and in-service training to integrate ICT tools in teaching and learning. The study examined teachers' capacity to use ICT tools, what kind of ICT tools they use and the level of ICT use in teaching and learning in TVET teacher training institutions in Uganda. The study employed both quantitative and qualitative methods to collect data. A questionnaire was used to collect data from respondents. The results of the study indicate that 63% of the teachers had capacity to use ICT tools, 100% had skills

and knowledge to use ICT tools, and 88% of the teachers were using ICT tools in teaching and learning. However, 12% of the teachers indicated that they were not able to use ICT tools in teaching and learning. The results of the study do not attribute this to lack of skills and knowledge to use ICT tools in teaching and learning. Therefore, there is need for the institution to establish as to why 12% of the teachers with basic, intermediate and advanced skills in the use of ICT tools were not using it in teaching and learning.

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