Improving Teaching and Learning in Technical Teacher and Instructor Training Institutions in Uganda: Implication of Learning Theories

Mukasa John Ddungu-Kafuluma

Kyambogo University, Kampala, Uganda

Kafulumaddungu@gmail.com

ABSTRACT

The paper explores the extent to which learning theories are applied in the training of technical teachers and instructors in Uganda, ascertains those theories that are relevant. Data was collected from 238 respondents, including 145 students, 81 instructors and 12 principles and Ministry of Education and Sports (MOES) officials. Respondents were selected using purposive and convenience sampling. Structured questionnaires, interview guides and an observation schedule were used. Findings show that learning theories are not infused into the training of technical teachers and instructors. Learning theories were perceived by trainers as pure theory that had little application to technical teacher education. Respondents agreed that learning theories enable teachers to acquire professional skills and that they promote hands-on training. Respondents further agreed that constructivism, cognivitism and behaviorism can ensure high quality and effective teaching and learning in technical teacher education. The paper advocates for, a complete re-thinking of the design and implementation of Technical and Vocational Education (TVE) teacher training in Uganda to infuse in the three learning theories. Technical and Vocational Education and Training (TVET) teacher training in Uganda should open up to new and effective teaching and learning approaches that are based on the principles of learning theories. This will subsequently improve the quality of TVE teachers and instructors in Uganda.

Key words: Learning theories; Constructivism; Cognivitism; Behaviorism; technical teacher, instructor training, Teaching and Learning

INTRODUCTION

Sustainable economic growth and development in developing countries is dependent on the ability of their training institutions to produce technologically competent and knowledgeable workers. The Government of Uganda is currently promoting technical and vocational education (TVE) as a major avenue for modernization and Business, Technical and Vocational Education and Training (BTVET) strategic plan for Skilling Uganda. The country badly needs workers who can do practical jobs, have expertise in technology and skills that result into immediate employment. To achieve this, Uganda needs competent technical and vocational education technical teachers and instructors to develop and implement strategies and interventions that will increase the usefulness of this education to the country's economy. Technical and vocational skills can only be vital for Uganda's development if technical and vocational institutions can produce graduates who can use technological skills to cope with the current global challenges (Egau, 2014). However, a critical aspect to the training of a technologically competent and skilled workforce is the training of competent technical and vocational education teachers (Altinyelkien, 2004). The quality of any education is largely dependent on the quality of the teaching staff. Similarly, the quality of any TVET system hinges on the quality of its TVET teachers and instructors (Vernon& Reynold, 2011).This implies that the quality of Uganda's TVET graduates largely depends on the quality of the technical teachers and instructors produced.

In most parts of Africa, limited attention has been given to the competence of TVET teachers. But, the ever changing technological innovations and the demand for skilled workplace require a well trained TVET teacher (Kessels, 1999). National reviews of technical teacher education and training that have been done in African countries reveal that, almost 90% of technical and vocational teachers and instructors working in the public and private training systems have below average teaching skills (Kessels, 1999). A recent BTVET study a MOES department, responsible for the coordination and harmonization of TVET in Uganda, revealed that, TVET teachers do not effectively develop their learners' technical skills (Egau, 2014). In the current curriculum for training technical teachers and instructors in Uganda, learning theories are only mentioned in Educational Psychology, but do not appear in the core course units for technical teacher and instructor training. Infusing learning theories in the teaching methodology could be crucial in producing effective TVET teachers. However, limited empirical information was available on the extent to which learning theories are included in the curriculum for training technical teachers and instructors in Uganda. It was important to explore the relevance of learning theories in the training of technical teachers and instructors in Uganda in order to have successful Competence Based Education and Training (CBET) and "Skilling Uganda" programmes.

The Problem

Studies show that effective use of relevant technical teacher training philosophy and learning theories results into technically and pedagogically competent TVET teachers (Altinyelkien, 2004; Kadocsa & Koppony, 2004; Geert, 2008). In order to improve the quality of craftsmen and technicians in Uganda, the government, through Teacher Instructor Education and Training (TIET) and BTVET departments , tertiary institutions such as Kyambogo University and the support of NGOs like German Development Cooperation (GTZ) and Japanese International Development Cooperation (JICA) have combined efforts to improve the training of technical teachers and instructors. However, there is still a general dissatisfaction on the quality of technical teachers and instructors in Uganda. Studies show that institutions which employ these teachers complain of them being very theoretical and unable to effectively develop creativity and innovativeness among students (Egau, 2014). These technical teachers and instructors do not apply learning theories that enable teachers to acquire professional skills that promote hands-on training and experiential training. It was not clear whether training institutions implemented modern training methods and relevant learning theories in the training of technical teachers and instructors in Uganda and how this influenced the quality of technical teachers and instructors. Therefore, this study explored whether and how relevant learning theories are being used in the training of technical teachers and instructors and the influence it has had on the quality of trainers produced.

Purpose

This paper explores the relevance of learning theories in the training of technical teachers and instructors in Uganda. The paper bridges the knowledge gap due to lack of recent empirical studies on the issues and provides important information that could guide policy decision-making.

Objectives

The objectives of the study were to:

1. Determine the extent to which learning theories are being applied in the training of technical teachers and instructors.
2. Ascertain learning theories that should be used to produce a quality technical teacher or instructor in Uganda.

Effective technical teacher and instructor training is based on training philosophy and effective use of learning theories. The Parallel Technical Teacher Training philosophy indicates that effective TVE teachers and instructors should be technically and pedagogically competent. These should be able to offer relevant technical knowledge, skills and values to technicians and craftsmen using appropriate methodology. Geert (2008) indicates that for TVE teachers to be more effective, they should have parallel technical and teacher training at the same time. This dual training prepares TVE teachers and instructors for two alternative professions: technician and technical teacher. Kadocsa and Koppony (2004) advise that in Parallel Technical Teacher Training, more time (about three quarters) is given to technical subjects, and the remaining quarter on pedagogy. In addition, teacher trainees need to have some industrial placement as technicians, guided by an industrial expert so as to have a real feel of the technical world. This approach prepares TVE teachers and instructors to be more grounded in practical technological issues while at the same time becoming more competent technical teachers and instructors of TVE. Trainees then complete teaching practice in technical and vocational institutions. Teaching practice activities should be guided by a senior school instructor (UNESCO-UNEVOC, 2006). This subsequently produces competitive technical teachers and instructors who can practically demonstrate to learners how to solve pertinent technological problems. Learning is an epistemological issue that is largely cognitive in structure. Learning theory is a conceptual framework which describes how information is absorbed and retained during teaching-learning process (Geert, 2008). This paper is based on three common theories, namely; behaviorism (Skinner, 1953), cognitivism (Gagne, 1984), constructivism (Akinsanmi, 2008) that relate to technical education.

Behaviorism learning theory

Behaviorism concerns the observable change in behavior. Behaviorists believe that learning is provided by a change in actions through an explorative process. It exposes individuals to external stimuli until a desired response is received. Knowledge and skills are transferred by the teacher to the learner using the principles of reinforcement (Harzem, 2004). In Behaviorism, the lecturer / tutor arranges the environment to elicit desired responses through behavioural objectives, competence-based learning and skill development (Greenberg, 1987). Teaching is done through “skill and drill “exercises which provide consistent repetition necessary for effective reinforcement of response patterns. Geert (2008) argue that stimulus (question) and response (answer) frameworks can be used to develop good practical skills. Regular reviews are used as guided practice combined with positive reinforcement such as verbal praises, good grades and prizes to develop appropriate knowledge and skills.

Cognitivism learning theory

This is a learning theory where humans generate knowledge and meaning through sequential development of an individual’s cognitive abilities (Greenberg, 1987). Cognitive abilities such as; recognition, understanding, reflection, application, analysis, creation, and evaluation are used to develop necessary skills. In Cognitivism, learning occurs when the learner is an active participant (Gagne, 1984). Vernon and Reynold (2011), argue that,

for this theory to be effective in technical education, the instructor needs to give students opportunity to explore, manipulate, experiment, question, and to search for answers by themselves. Thus, institutions have to create learning environments which stimulates curiosity for exploration (Akinsanmi, 2008). Learning is much more meaningful if the learner is allowed to have places for individual and group study besides social interaction. Cognitivist teaching methods aim at assisting learners in assimilating new information to the existing knowledge and modifying existing intellectual framework to accommodate that information. Use of skill and drill exercises is encouraged in the memorization of facts, formulae, and lists (Vernon & Reynold, 2011). Greater importance is placed on strategies that help learners to actively assimilate and accommodate new material. This is done by asking students/learners to explain new material in their own way.

Constructivism learning theory

Constructivism learning theory is a holistic perspective on learning that combines experiences, perception, cognition and behavior. This is the learning theory that directly relates to learning and teaching in technical and vocational education. This learning theory is founded on the premise that, by reflecting on our experiences, we construct our own understanding of the world we live in (Radin, 2009). The theory emphasizes the central role of experience in the learning process. Learning becomes a continuous process grounded in experience (Kolb, 1984). In the teaching-learning situation, the teacher provides an opportunity for learners to consciously reflect on the thoughts, emotions and behavioral actions and transforming them. Akinsanmi (2008) says that constructivism promotes active and discovery learning and knowledge building. Learning occurs through experience and therefore learners should be given opportunity to experience learning material through hands-on exercises. This therefore calls for having well facilitated workshops with modern tools and equipment. The teacher by acting as a facilitator encourages students /learners to discover principles and procedures for themselves. During instruction, instructors focus on making connections between facts and fostering new understanding in students. They encourage learners /students to analyze, interpret, and predict information. Gagne (1985) says applying this theory; the technical teacher/instructor encourages Discovery, Hands-on, Experiential, Collaboration, Project-based and Task-based learning. Bauersfeld (1995) adds that principles of constructivism encourage the teacher to be a facilitator, which helps the learner to get his or her own understanding of the content. The learner hence plays an active role in the learning process and becomes the centre of the teaching and learning process (Vernon and Reynold, 2011). Furthermore, it helps them to construct knowledge and skills by working to solve realistic problems (Geert, 2008). Hence, learning becomes something done by the learner instead of being something imposed on him/her from outside.

The contribution of learning theories to technical teacher training is summarized in the figure below.

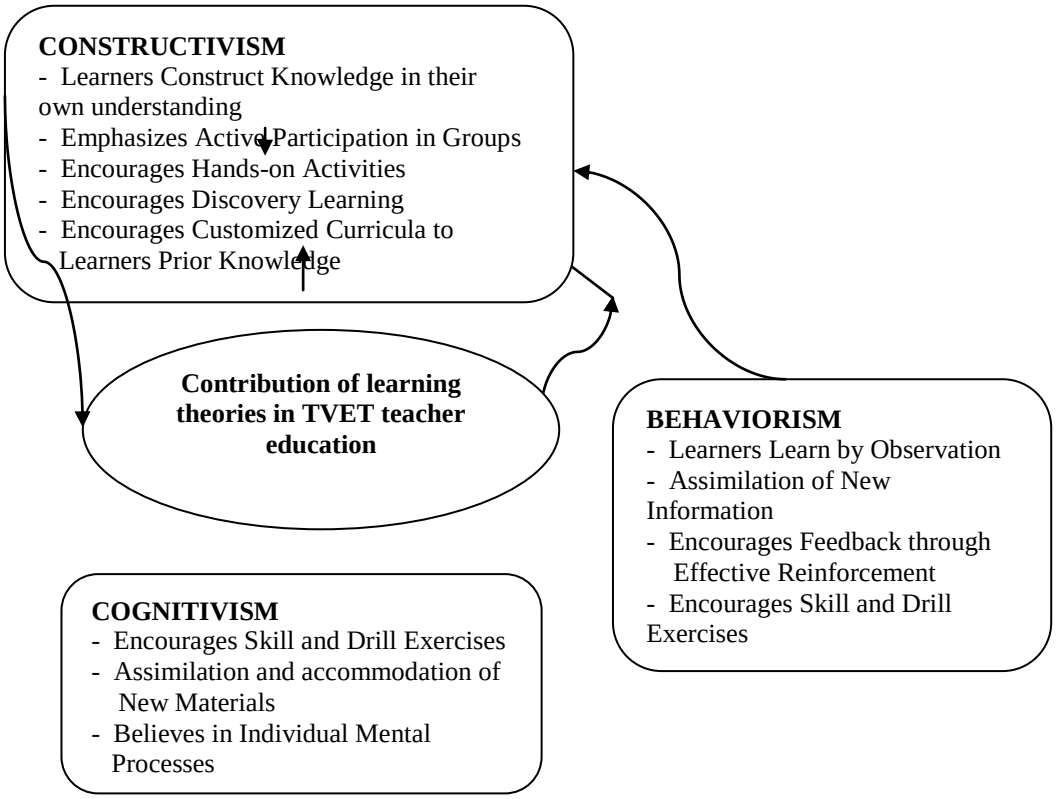

Figure 1: A summary of the relevance of Constructivism, Behaviorism and Cognitivism in Technical teacher education; Adapted from Kadocsa and Koppony (2004).

The figure shows that, Constructivism gives learners opportunity to construct knowledge in their own understanding. This is done through active group participation, hands-on activities, discovery learning, and learning by doing and customizing curricula to learner's prior knowledge (Akinsanmi, 2008). On the other hand Cognitivism encourages use of individual mental processes, skills and drill exercises, assimilation and accommodation of new knowledge. Behaviorism encourages learners to learn by observation, effective reinforcement and assimilation of new information. It encourages feedback, skills and drill exercises as well. Students are viewed as thinkers with emerging theories about the world. Teachers generally behave in an interactive manner, mediating the environment for students. Pursuit of student questions is highly valued. This would be difficult to achieve using traditional training methods. This is because Vernon and Reynold (2011) says that in traditional classrooms, the student primarily work alone, also there is strict adherence to fixed curriculum, teachers rely so much on textbooks and they behave in a didactic manner disseminating information to students, thinking that students are blank slates. Whereas, in the constructivism classroom, students primarily work in groups, curricula activities rely on primary sources and students taken as thinkers, where the teacher is a facilitator.

In order for Uganda to be able to "Skill Ugandans" and to fully implement the Competence Based Education and Training (CBET) in totality, technical teachers and instructors should be well trained to come out as highly competent teachers and instructors. They should be able to support learners to construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. Learners should be helped to reconcile new ideas with previous ideas and experience. Application of learning theories can significantly help TVE teachers to effectively support experiential learning among their students. There was, therefore, need to explore extent of inclusion of the relevant learning theories in the curriculum and instructional methods of technical teachers and instructors in Uganda and its implication of "Skilling Uganda" and development of learners' ability to solve pertinent technological problems.

METHODOLOGY

The study used both qualitative and quantitative research approaches for the purpose of triangulation (Amin, 2005). Respondents in this study were selected from across the country ,from 70 technical teachers and instructors 11 administrators, 145 technical teacher education students (111 male 34 female), 8 administrators of technical and vocational institutions and 4 Government officials from the Ministry of Education and Sports (see tables 1 & 2). Structured questionnaires were used to collect data from students and instructors. In the questionnaire, respondents indicated whether they disagreed or agreed to statements that measured issues that were being investigated. Responses were made on a Likert Scale for which 1 represented strongly disagree, 2 disagree, 3 not sure, 4 agree and 5 strongly agree. The questionnaire had three sections and each section contained six (6) items. A scheduled interview guide with 10 structured questions was used to collect data from ministry officials. A structured observation guide was used to collect information on actual use of learning theories in the training of technical teachers and instructors. As for sampling, both probability and non-probability techniques were used to select a representative sample. Given the fact that the target population was large, purposive and convenience sampling techniques were employed (Sekeran, 2009).

A variety of analyses were conducted to explore the questions that had been postulated. The analysis of quantitative data was performed using the Statistical Package for Social Scientists (SPSS) version 17. First, descriptive analyses were carried out on all the variables. Mean responses and standard deviation were calculated to establish predominant views of respondents on the research questions (Zikmund, 2000). Interviews and lesson observations were used to substantiate descriptive statics results. Qualitative data from key respondents were analyzed using a thematic content analysis approach. Themes were developed in accordance with the objectives of the study and expected outcomes. Data were then grouped according to these themes, as a first step for subsequent interpretations. Pragmatic Content Analysis (PCA) techniques were adopted from Denzin and Lincoln (2000). Concepts were classified according to their probable causes and effects (Creswell, 1998). The intensity with which certain words are used was ascertained. This enabled the researcher to establish why something was said, which subsequently led to understanding respondents' perceptions of issues (Amin, 2005). The general view of respondents on each theme was used to confirm or indicate divergence with quantitative findings.

Table 1: Demographic information of students (N=145)

	Aspect	Frequency	Percent
	Male	111	76.6
Gender	Female	34	23.4
	Total	**145**	**100.0**
Students'	DITTE	137	94.5
	TVET	5	3.4
Courses	DTTE	2	1.4
	CTTE	1	0.7
	Total	**145**	**100.0**

Source: Primary data from the field (2015)

Table1 shows that among the 145 students who participated in the study, 76.6% were male and only 23.4% were female. These students were doing a variety of Technical Education Course, with the majority (94.5%) pursuing a Diploma in Instructor Technical Teacher education, 3.4 % were doing TVET, 1.4% , were doing a Diploma in Technical Teacher education and 0.7 % a certificate in technical teacher education. So the majority of students were pursuing technical teacher education and so had firsthand knowledge about the issues that were being studied.

Table 2: Demographic information of technical teachers and instructors (N = 81)

	Aspect	Frequency	Percent
Responsibility	Teaching	70	86.4
	Administrator	11	13.6
	Total	**81**	**100.0**
	1-5 years	20	24.7
Tenure of Service	6-10 years	26	32.1
	11-15 years	10	12.3
	16 years and above	25	30.9
	Total	**81**	**100.0**

The findings in table 2 above show that, technical teachers and instructors who participated in the study had sufficient experience in the field. The majority (32.1%), had served in the profession for 6- 10 years, followed by 30.9% who had served for 16 years and above and then by 24.7% who had served for 1-5 years and finally by 12.3% who had served for 11-15 years. With regard to responsibility many (86.4%) had served teachers and 13.6% as administrators.

RESULTS AND DISCUSSION

The Extent to which learning theories are applied in the training of technical teachers and instructors

Students and instructors indicated their level of agreement and disagreement to statements that indicated application of learning theories in the training. Observations of some lessons of technical teachers and instructors by the researcher were made and interviews were done with officials responsible for ensuring quality standards in the training of technical teachers and instructors in Uganda.

Instructors' responses on application of learning theories

Instructors indicated the extent to which they apply learning theories by indicating whether they agree or disagree with 6 statements on use of learning theories in the training of technical teachers and instructors. The findings are indicated in the table below.

Table 3: Instructors' Mean responses, SD and Ratings on application of learning theories (N = 81)

Aspect	Mean response	Sd	Rating
Learning theories only applied in Pedagogy course units	4.5	2.1	A
Instructors use learning theories in all aspects of training	1.4	2.2	SD
Behaviourism is used in training students	3.1	1.1	UD
Cognitivism is used in training students	2.1	1.4	D
Constructivism used in training students	1.1	1.2	SD
Whatever instructors do with students is based on a specific learning theory	2.1	1.3	D

Source: Primary data from the field (2015)
Key: SD = strongly disagree, D = disagree, UD = undecided, A = agree, SA = strongly agree

The findings in the table above show that learning theories are only partly applied. With regard to learning theories being applied in Pedagogy course units, instructors agreed (mean response = 4.5, sd = 2.1). As far as instructors using learning theories in all aspects of training, respondents strongly disagreed (mean response = 1.4, sd = 2.2). In relation to using Behaviourism in training students respondents were undecided (mean response = 3.1, sd = 1.1). As far as instructors using Cognitivism in training students, respondents disagreed (mean response = 2.1, sd = 1.4). With regard to Constructivism being used in training students, respondents strongly disagreed (mean response = 1.1, sd = 1.2). In relation to instructors basing on what they do with students on a specific learning theory respondents disagreed (mean response = 2.1, sd = 1.3). This finding shows that institutions do not have deliberate efforts in using learning theories in training technical teachers and instructors. Learning theories are only used to train teachers in pedagogy. This scenario has resulted from lack of a specific TVET teacher training philosophy. Wadi (2000) shows that learning theories are important in highlighting the training philosophy of institutions. But it was evident that institutions followed no specific teacher training philosophy and so, did not see the use of learning theories. The curriculum currently being followed did not emphasize use of learning theories. The theories were only viewed as just a desirable subject instead of being an essential subject. This finding agrees with Kadocsa and Koppony (2004) who said that the use of learning theories in technology education is very much dependent on the teaching philosophy and the way the curriculum is organized. If the curriculum is organized in such a way that learning theories are the skeleton on which training is built, they will be emphasized.

Students' responses on application of learning theories

Students indicated whether learning theories are being applied by their instructors during their training. The findings are presented in the table below.

Table 4: Students' Mean responses, SD and ratings on application of learning theories (N = 145)

Aspect	Mean response	sd	Rating
Learning theories are applied in Pedagogy course units	4.2	1.1	A
Learning theories are used in all that we do at the institution	1.1	2.1	SD
Some of our learning is based on Behaviourism learning	3.1	1.5	UD
Our training is also based on Cognitivism	3.0	1.4	UD
Instructors use Constructivism when training us	2.1	1.2	D
Instructors always base our activities on a specific learning theory	3.1	1.3	UD

Source: Primary data from the field (2015)
Key: SD = strongly disagree, D = disagree, UD = undecided, A = agree, SA = strongly agree

Table 4 above shows that students agreed (mean response = 4.2, sd = 1.1) that learning theories are applied in Pedagogy course units. With regard to learning theories being used in all that students do at the institution, respondents strongly disagreed (mean response = 1.1, sd = 2.1). As far as some of the learning being based on Behaviourism learning theory, respondents were undecided (mean response = 3.1, sd = 1.5). With regard to their training being based on Cognitivism respondents were undecided (mean response = 3.0, sd = 1.4). In relation to instructors using constructivism when training them, students disagreed (mean response = 2.1, sd = 1.2.). Finally in relation to instructors always basing students learning activities on a specific learning theory, students were undecided (mean response = 3.1, sd = 1.3), on this issue. These findings further confirm the findings from instructors that learning theories are not actively applied in the training of technical teachers and instructors.

Lesson observations on application of learning theories

Technical teachers and instructors' lessons and lesson plans were again observed in six government and two private institutions, to assess the extent to which learning theories were applied in the training of technicians, craftsmen, technical teachers and instructors. Two lessons, one in pedagogy and another in practical work were observed, making a total of 16 observations. The findings are shown in the table below.

Table 5: Researcher's observations on use of learning theories in lessons and lesson plans

Aspect observed	Times aspect was seen out 16
Learning theory indicated in lesson plan	2
Learning theory mentioned to students	1
Teaching based on learning theory	0
Learning activities based on learning theory	0
Assessment based on learning theory	0

Source: Primary data from the field (2015)

The findings in table 5 above show that learning theories were mainly used in pedagogy lessons (2/16) and they were mentioned once to students (1/16). Observations further indicated that teaching was not based on learning theories (0/16), learning activities were not based on learning theories (0/16), and neither was student assessment based on learning theories (0/16). Hence it is clear that learning theories are not actively applied in the training of technical education teachers. This is most likely due to the fact that institutions do not believe that learning theories are relevant in the training of technicians, technical teachers, and instructors. It is likely the reason why institutions are placing little emphasis on vocational pedagogy. This was evident from the little focus that was placed on high quality and effective teaching and learning in most of the lessons that were observed.

Interview responses on application of learning theories

The KI01 from BTVET intimated that "institutions are focusing less on vocational pedagogy, high quality and effective teaching and learning in technical education" He added that" it is application of learning theories that can ensure high quality and effective teaching and learning in technical and vocational education". A KI06 from KYU added that technical education is "more competence than knowledge based". So it is only knowledge areas that directly support competencies which are emphasized. Another KI05 from UTC Kicwamba said that "learning theories are "pure theory" yet technical education is based on applied theory". Hence, knowledge cannot, in this approach, be the starting point; the 'essential embedded knowledge' is the starting point. This implies that the training of technical teachers and instructors in Uganda has taken a master-artisan trainer mode instead of a combination of a technical teacher in institution-based workshop. So, learning theories ought to regularly to be used to guide teaching in these institutions.

Learning theories that should be used to produce a quality technical teacher and Instructor in Uganda

Instructors' views on the relevance of learning theories were examined. Instructors responded to six (6) items that indicated whether they agreed or disagreed to the relevance of learning theories in the training of technical teachers and instructors.

Table 6: Instructors' Mean responses, SD and Ratings on application of learning theories (N = 81)

Aspect	Mean response	sd	Rating
All learning theories should be applied in training technical teachers and instructors	1.1	1.3	SD
Learning theories should only be applied in pedagogy lessons	4.4	2.1	A
Behaviourism is useful in training technical teachers and instructors	2.1	1.4	UD
Cognitivism is relevant to training of technical teachers and instructors	4.2	1.5	A
Constructivism is useful in training technical teachers and instructors	4.5	1.2	A
Whatever instructors do with students should be based on a specific learning theory	3.1	1.1	UD

Source: Primary data from the field (2015)

Key: SD = strongly disagree, D = disagree, UD = undecided, A = agree, SA = strongly agree

The findings in the table 6 show that respondents strongly disagreed (mean response= 1.1, sd = 1.3), that all learning theories should be applied in training technical teachers and instructors. However, respondents agreed that learning theories should only be applied in pedagogy lessons (mean response = 4.4, sd = 2.1). They were undecided on whether Behaviourism is useful in training technical teachers and instructors (mean response =2.1, sd = 1.4), and agreed that Cognitivism is relevant to the training of technical teachers and instructors (mean response = 4.2, sd = 1.5) and also agreed that Constructivism is useful in training technical teachers and instructors (mean response = 4.5, sd = 1.2). They were also undecided whether, whatever instructors do with students should be based on a specific learning theory (mean response = 3.1, sd = 1.1). These findings imply that instructors believe that learning theories can be relevant in the training of technical education teachers and instructors. They agreed that both cognitivism and constructivism are the most relevant theories in the training of technical teachers and instructors.

These findings agree with Radin (2009) who said that constructivism is relevant in technology education training because it explains how knowledge is constructed when new information comes into contact with existing knowledge. Using this theory students are able to generate own "rules" and mental models, which they use to make sense of own experiences. Also Wells (2007) adds that, constructivism enables students to acquire practical skills. The findings also agree with Akinsanmi (2008) who says that, individuals through constructivism are able to actively construct knowledge by comparing new ideas or concepts with their current knowledge.

Interview responses on learning theories that should be used in producing a Quality technical teacher or instructor in Uganda

The KI02 in charge of technical teacher education in BTVET said that "technical education is mainly characterized by learning by doing' so hands-on training is more important than pedagogical engagement**.**" So, learning theories that could bring out this fact were more relevant. The KI09 in the teacher education department in KYU affirmed that "vocational teaching and learning is underpinned by experiential learning and learning styles theories, and these are most relevant to this field". Hence, interviews reveal that, learning theories that encourage problem-solving and application of procedures are more relevant. A KI12 from Nakawa VTI added that "while it is true that scientifically grounded knowledge base is needed by technical education instructors in order to engage in the kind of problem-solving required by more advanced levels of technology, it has to be combined with tacit knowledge and competence that could only be acquired through use of learning theories". These findings are in agreement with Vygotsky (1986) who advises that TVET teachers need not to have only subject knowledge, but they need to know how to teach that subject and how to construct a curriculum. This has to be the 'core' of TVET and not the 'periphery'.

CONCLUSION

Basing on the findings of this study, we can state that while learning theories are mentioned in the curricula documents of the institutions and students receive course outlines that mention some learning theories, learning theories were not included in all the course units that were done by students. Learning theories were only highlighted in the Psychology course unit. This implies that leaning theories were not taken as learning and teaching philosophy for technical teacher training. They were taught as standalone course. Hence cognitivism, behaviorism, and constructivism are not infused into the course outlines and curriculum as a result; they do not significantly influence the training of technical teachers and instructors. So, trainees do not learn how to use them in their teaching activities and subsequently may not be able to use them. While trainers taught theories, but did not base their activities on them. This was partly due to the fact that little emphasis is placed on planned and systematic ways of doing things which may require principles from learning theories**.** Trainers used their own skills and experience to reinforce and assess learning, few of which were borrowed from learning theories. Institutions focused less on vocational pedagogy, quality and effective training of technical teachers and instructors. Learning theories were perceived as pure theory that had little application to technical teacher education perceived as applied theory. The trainers also felt that TVET was fundamentally different from any other type of teaching and learning, so learning theories were not very crucial in this context. Instructors viewed learning theories as mere pedagogical engagement and yet perceived hands-on -training as being more important than pedagogical engagement. They felt that it was difficult to use learning theories in vocational teaching and learning as experiential learning that encourages problem-solving and application.

RECOMMENDATIONS

The study suggests the following policy changes to improve the overall efficiency technical teacher and instructor training institutions in Uganda.

MOES

First of all, government through BTVET should completely re-think the design and implementation of TVE teacher training in Uganda. Relevant learning theories should be infused in all activities of training institutions and this should be taken as priority. The government should open TVET teacher training in Uganda to open up to new and effective teaching and learning approaches that are based on the principles of learning theories.

TVE Teacher Training Institutions

TVE teacher trainers in Uganda should develop extensive knowledge in the use of learning theories in teaching. Training institutions should infuse constructivism and cognivitism into TVE teacher and instructor training to promote experiential learning. This will subsequently improve the quality of TVE teachers in Uganda. Training institutions should also include learning theories in all the course units more so in the core course units like General and Special Methods. Also the technical teachers and instructors should be encouraged to use the three relevant learning theories; constructivism, behaviorism, and cognitivism in the training of technical teachers, instructors, technicians and craftsmen in TVET institutions.

NCDC

The National Curriculum Development Centre (NCDC) should fund a study to establish the extent to which includes the relevant learning theories in technical and vocational education curricula.

Replication of the study on a national sample of TVET institutions would also be helpful in understanding the issues of the relevance of learning theories in the training of TVE teachers and instructors at all level.

REFERENCES

Akinsanmi, B. (2008). The optimal learning environment: Learning theories. Retrieved 1 August 2011, from: *http://www.designshare.com/index.php/articles*.

Amin, M. E. (2005). *Social Science Research: Conception, Methodology and Analysis.* Kampala: Makerere University Printery.

Ary and Razavieh (2002). *Research design and methodology*. New York, Harcourt: Brace College Publishers.

Altinyelkien K, H. (2004). Technical and Vocational Training in Developing Countries.

Boyle, T. (1994). Designing for usability and effectiveness in a resource rich learning system. *East-West Journal of Computers in Education*, 1

Creswell,J.W.(1998). Qualitative Inquiry and research design; Choosing among five traditions Thousand Oaks London: sage

Denzin, N.K & Lincoln,Y.S.(2000). *Handbook of Qualitative Research*. Thousand Oaks London: Sage.

Egau O, J. (2014). *Meeting the Challenges of Technical/Vocational Education: The Ugandan Experience*. New York: Penn State University Press.

Gagne, R.M. (1984). Learning outcomes and their effects: Useful categories of human performance. *American Psychologist*, 39, 377-385.

Geert, P. (2008). Evaluation of the TVET Policy and Practice of ICCO, Woord En Daad and Edukans. New York: Plenum Press

Harzem, P. (2004). Behaviourism for new psychology: what was wrong with behaviourism and what is wrong with it now. *Behaviour and Philosophy*, 32, 5-12.

Kadocsa, L and Koppony, I.(2004). Quality-Based Cooperative Technical Teacher Training. The *Journal of Technology Studies*

Kessels, J. (1999). Linking Theory and Practice: Changing the Pedagogy of Teacher Education. *Educational Researcher*, 28(4), 4-17.

Radin, J.P. (Fall. 2009). *Brain-Compatible Teaching and Learning: Implications for Teacher Education*. *EducHoriz*, 88 (1).

Saunders, M., Lewis, P. and Thornhil, A. (2003). *Research methods for business students.* 2nd edition. Harlow: Financial Times Prentice Hall.

Sekaran, U. (2009). *Research Methods for Business: A Skill Building Approach,* 5th (ed), New York: Wiley.

Skinner, B.F. (1953). *Science and human behavior.* New York: Macmillan.

UNESCO (2005).Learning for work, Citizenship and sustainability Final Report. Bonn: UNESCO-UNEVOC

UNESCO-UNEVOC (2006).*Orienting technical and vocational; education and training* (TVET) for sustainable development. Bonn*:* UNESCO-UNEVOC.

Vernon, A. C and Reynold, J. (2011).*Technical Vocational Instructor/Teacher Training (TVITT) Challenges*. , London: Routledge

Vygotsky, L (1986). *Thought and language*. Cambridge, Ma: MIT Press

Wells, G. (2007). *Semiotic Mediation, Dialogue and the Construction of Knowledge*. *Human Development* **50** (5): 244–74.

Wadi. H. (2000). Teacher Training and Technology. *TechKnowLogia,* November/December 2000. Cambridge, MA: Harvard University Press.

Zikmund, W.G. (2000). *Business research methods*. 6th (ed). FL, USA: The Dryden Press.