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The role of training philosophy in the training of quality technical teachers and instructors in Uganda

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ABSTRACT

Competent Technical and Vocational Education Teachers are critical in the training of a skilled workforce that is globally competitive and can effectively contribute to sustainable economic growth and development. For technical teachers to be globally competitive, their training has to be based on a comprehensive training philosophy. This paper explores the current technical teacher training philosophy in Uganda and its implication to the quality of technical teachers. Data was collected from technical teachers, instructors (24) and administrators (12) from 6 Technical teacher training institutions in Uganda. A total of 36 respondents participated in the study and were selected using purposive and convenience sampling. A structured interview guide was used. Findings show technical teacher and instructor training in Uganda still lacks a specific training philosophy. Policy, curricula, and practices do not clearly show the type of trainee needed and how to produce that person. Training activities still remain in their infancy and relatively little has been done to develop a modern, effective and specific training philosophy based on relevant learning theories. The mode of training does not promote specific values and beliefs among trainees. Learning theories that are known to promote relevant values have had little application because are not perceived as very relevant to technical teacher education. Adopting relevant values from cognitivism and behaviorism can ensure the development of the needed values among trainees. We need a training philosophy that will produce active participants who can explore, manipulate, experiment, question, and search for answers by themselves. The MOES and NCDC should develop a pedagogical philosophy for technical teacher and instructor training in Uganda that will create a sphere which stimulates curiosity for exploration and change in actions through an explorative process.

Keywords— *Technical teacher, Instructor training, Training philosophy, Behaviourism, Cognitivism*

1. INTRODUCTION

The government of Uganda is currently promoting technical and vocational education as a major avenue for modernisation (MOES, 2015). The skilling Uganda program is based on Technical and Vocational Education (TVE) that can prepare learners to do practical jobs, develops their expertise in technology and enable them to acquire skills that result into immediate employment (Ministry Of Education and Sports, 2016). However, a critical aspect to the success of this program in the quality of technical teachers and instructors. To have technologically competent and skilled workforce, we need to first have competent Technical and Vocational education Teachers (Akim, 1998). It is only effectively trained technical teachers who can develop and implement strategies and interventions that will increase the usefulness of TVE to the country's economy (Rwendeire, 1993).

Altinyelkien (2004) argues that a training philosophy relevant to the country's development goals is needed to produce competent technical and vocational education teachers. Uganda's key development plans include poverty eradication and employment creation (Egau, 2014). This implies that we need technical teachers who can produce graduates who can use technological skills to create their own jobs, use appropriate technology to eradicate poverty and at the same time cope with the current global challenges (Egau, 2001).

The first national TVE teacher training programme was started in 1957 at Kampala Technical Institute-KTI (Okello, 2005). This Certificate in technical teacher education (CTTE) was awarded by Makerere University. Technicians and craftsmen who had certificates in their trades were trained for one year in education pedagogy. The training philosophy for this program was to have Trainers who are both technically and pedagogically competent. This training philosophy continued when KTI become Uganda Technical College Kyambogo in 1963. In 1994, Uganda Technical College Kyambogo, become Uganda Polytechnic Kyambogo (UPK) and it introduced a diploma in technical teacher education (DTTE) in addition to CTTE. DTTE provides two-year training pedagogical training to students who have advanced crafts certificates. In 2001, Uganda Polytechnic becomes part of Kyambogo University and Bachelor of technical teacher education (BTTE), was introduced. BTTE provides 4 years training to A' level, DTTE,

and CTTE holders; 3 years to Ordinary diploma holders and 2 years to Higher National Diploma holders. Unfortunately, both programs were shelved, BTTE of Kyambogo in 2009, and of Makerere in 2012.

Currently, it's only Kyambogo University offering a degree program code-named bachelor of vocational studies (B.VOC) with education and bachelor of education (B.ed) in technological studies that provides training to teachers of technical subjects in secondary schools. National teachers colleges affiliated to Kyambogo university offer diploma programmes in technological studies (Okello, 2005). The entry requirements are; A-level science combinations, and advanced crafts or technician's certificate. Diploma students receive two years training while degree students receive three years training in educational pedagogy and technology education. Graduates teach technical subjects such as woodwork/carpentry, metal work, agriculture, technical drawing and power and energy to O-level and A-level students. In 2016, Kyambogo University has introduced a bachelor's degree for technical teacher training called instructor and technical teacher education (BITTE) to replace BTTE, which had been shelved. This program will be rolled out soon.

A big question that looms in the air is whether, in the many transitions of technical teachers training Uganda, the emphasis is still being placed on training philosophy and having competent Technical teachers and instructors. Studies show that in most countries in Africa, limited attention is being placed on training effective TVET teachers. A recent MOES revealed that a large proportion of technical teachers and instructors have challenges in effectively developing relevant technical skills in their learners (Egau, 2014). This could be attributed to the lack of a clear training philosophy. Also, the current curriculum for training technical teachers and instructors in Uganda is not based on a specific training philosophy. However, limited empirical information was available on the extent to which a particular training philosophy is being followed in training technical teachers and instructors in Uganda.

2. THE PROBLEM

Studies show that relevant technical teacher training philosophy can significantly contribute to competent technical teachers and instructors (Geert, 2008). The government of Uganda, with the support of international NGOs like GTZ and JICA, have made initiatives to improve the training of technical teachers and instructors. However, there is still discontent on the quality of technical teachers and instructors in the country. Some institutions that employ these technical teachers and instructors still complain of their being theoretical and unable to demonstrate creativity and innovativeness while performing their teaching roles (Egau, 2014). It was not clear whether training institutions had a relevant training philology that guides their training methods and how this influenced the quality of technical teachers and instructors. This study explored whether TVET teacher training institutions follow a training philosophy and the influence it has had on the quality of trainers produced.

3. PURPOSE

This paper examines how a training philosophy can contribute to the training of quality technical teachers and instructors in Uganda. The paper provides important information and policy thrusts on improving the training of technical teachers and instructors in Uganda.

4. OBJECTIVES

The objectives of the study were to:

- Ascertain the training philosophy currently being used in producing technical teachers and instructors in Uganda
- Determine the role of training philosophy in producing quality technical teachers and instructors.

5. LITERATURE REVIEW

There is overwhelming evidence that effective technical teacher and instructor training is based on training philosophy (Pearson, 1989). A popular learning training philosophy is the Parallel Technical Teacher Training philosophy. This 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 to be good technicians and technical teachers. 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 industry 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.

Countries in Europe and Asia that have used this training approach have produced very competent TVET men and women who can work as technicians and at the same time teach technical subjects. China has used this approach, and it has brought it into the first world (China Vocational Education, 1999). TVE teachers in China are able to effectively use technical machines and run regular technology investigation projects with their students. This has given Chinese technicians the motivation to be innovative and this is why China is now more competitive in the global economy. Germany also has a very good TVET system as a result of implementing Parallel technical and teacher training**.** Schneider (2010) indicates that to be a TVET teacher in Germany, one should have acquired University studies of at least three years in a vocational major (e.g. electrical engineering) and a non-vocational minor subject, as well as in pedagogy. The individual should also have obligatory 12-months' work experience in a technical industry. In addition, the person is supposed to acquire a two-year pre-service teacher training programme at a vocational education teacher training institute (VETTI) combining work as a vocational school teacher with seminars in the major and minor areas of specialization. This

kind of training emphasizes reflective learning**,** project work, work- and business-process related learning, and development of occupational competencies (Bünning and Shilela, 2006).

Learning theories and TVET Training Philosophy

Vernon and Reynold (2011) argue that good vocational training philosophies are based on relevant learning theories. Behaviorism and Cognitivism are some of the key learning theories on which most training philosophies are based.

Behaviorism and TVET teacher training

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 the 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 behavioral objectives, competency-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 and TVET Teacher training

This is a learning theory where humans generate knowledge and meaning through the 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 (Schmeck, 1988). 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. The contribution of the learning theories is given shown below.

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

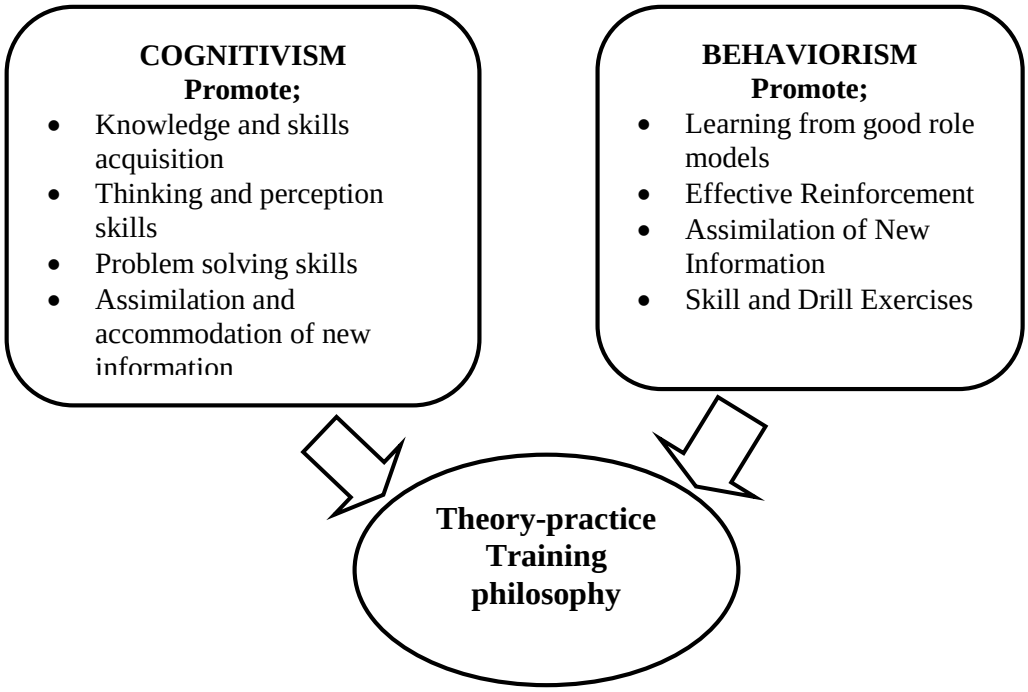

Fig. 1: A summary of the contribution of Behaviorism and Cognitivism to Technical teacher training philosophy; Adapted from Kadocsa and Koppony (2004)

The above figure shows that learning theories encourage technical teacher training to promote new knowledge and skills acquisition, assimilation, and accommodation through the effective use of individual mental processes and effective reinforcement. Behaviorism encourages learners to learn by observing good role models and effective reinforcement. Students are viewed as thinkers with emerging theories about the world and are encouraged to use their mental abilities to create new knowledge and skills. Teachers generally behave in an interactive manner, mediating the environment for students. This would be difficult to achieve using traditional training methods. This is because Vernon and Reynold (2011) say that in traditional classrooms, the student primarily works 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. A training philosophy based on learning

theories produces TVET teachers who are able to support learners to construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. Learners are helped to reconcile new ideas with previous ideas and experience.

6. RESEARCH METHODOLOGY

The study used a survey design that was rooted in the qualitative paradigm. The qualitative paradigm was adopted for this study because of the need to clarify, elaborate and enhance understanding of the key issues that were involved (Ary & Razavieh, 2002). Respondents in this study were selected from relevant tutors and instructors (24- 67%) and administrators (12- 33%). These key informants were selected from Nakawa Vocational Training Institute, Jinja Vocational Training Institute, National Instructor College Abilonino (NICA), KAL institute of technical teacher education (KALiotte), African College of Commerce, and Technology Kabale (ACCT-Kabale) and Kyambogo University.

Purposive sampling was used in order to collect in-depth responses from respondents who were well informed about the research problem. In-depth, semi-structured, key informant interviews were used to collect data from key informants. This method was preferred because it enables the collection of reliable, in-depth information. Using appropriate probing, the researcher sought detailed information that was relevant to the research questions.

Data were analyzed using a thematic content analysis approach. Themes were developed in accordance with the objectives of the study and the expected outcomes. Data were then grouped according to these themes, as the first step for subsequent interpretations. Pragmatic Content Analysis (PCA) techniques were adopted from Denzin and Lincolin (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). Key issues in the research problem were identified and then key points in the interviews and written records were coded and summarized. The general view of respondents on each theme was taken as the actual representation of views on the issues that were under investigation. Using Sekeran's (2009) methods, evidence was treated fairly, compelling conclusions were generated, and alternative interpretations were ruled out.The findings were presented in narrative form.

7. RESULTS AND DISCUSSION

The results and discussion are presented under the themes; Training philosophy being used in technical teacher and instructor Training in Uganda, its role in producing quality technical teachers and instructors and a philosophy that is more relevant to Uganda.

7.1 Training philosophy used in technical teacher and instructor training in Uganda

It was first examined whether technical teacher and instructor Training in Uganda follows any particular philosophy. It was anticipated that in curricula documents and practice, institutions have a specific way they do things to produce a particular technical teacher or instructor. The finds revealed that this was not the case in all the selected institutions. Respondents did not perceive a training philosophy as being important in their work.

A veteran instructor from TTT_1 intimated that "institutions are focusing less on training philosophy that promotes, high quality and effective teaching and learning in technical education" He added that" it is the application of learning theories that could ensure high quality and effective teaching and learning in technical and vocational education". A respondent from TTT_2 added that there is a tendency for institutions to think that since technical education is more "competence than knowledge-based" it does not need following a training philosophy.

So institutions mainly place emphasis on knowledge areas that directly support competencies. Another informant from TTT4 said that a training philosophy is in most cases based on "learning theories" which 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 of training that places little emphasis on pedagogical philosophy. Little emphasis is placed on planned and systematic ways of doing things which may require a training philosophy. Though some trainers admitted using their own skills and experience to reinforce and assess learning, some of which were borrowed from learning theories, it was not done as a policy. The nature of training TVET teachers used in Ugandan institutions does not support the use of a specific training philosophy and learning theory. Delannoy (2000) argues that Learning Theories embedded in a pedagogical philosophy are more relevant if institutions have a mission, such as training technically or pedagogically competent instructors or both. It is also likely that institutions did not place emphasis on the kind of trainer they want to produce. Radin (2009) says that for training philosophy to be relevant in the training of instructors, institutions have to place emphasis on either giving learners opportunity to construct knowledge in their own understanding, by reflecting on own experiences, effective reinforcement or encouraging using individual mental processes to assimilate and accommodate new knowledge.

7.2 Training philosophy relevant to the technical teacher and instructor training in Uganda

The findings show that respondents agreed that having a Training philosophy can enhance technical teacher and Instructor Training. An instructor from TTT_1 informed that a Training philosophy enables trainers to "shape the aptitude and motivation of individual students and their own approaches to learning". He added that it also enables institutions to "amplify their visions, missions and the calibre and strategies of the trainers". The administrator from TTT_3 said that "technical education in Uganda is mainly characterized by learning by doing'. Hands-on training is taken to be more important than pedagogical engagement**.** So, learning theories that clearly articulate and bring out this fact were more relevant and should be promoted. An instructor from TTT_6 affirmed that "vocational teaching and learning in Uganda is underpinned by experiential learning and learning styles theories, and these are most relevant to this field".

Hence, findings reveal that a training philosophy that encourages problem-solving and application of procedures are more relevant. In his case cognitivism coupled with behaviorism could be more applicable. An administrator from TTT_5 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 a training philosophy based on relevant learning theories". These findings are in agreement with Vygotsky (1986) who advises the 'core' of TVE teacher training should be a relevant pedagogical philosophy, but not only having subject knowledge. But evidence showed that this had been put at the 'periphery' by the Ugandan technical teacher and instructor training system.

8. CONCLUSION

Basing on the findings of this study, we state that the current technical teacher and instructor Training lacks a specific training philosophy. Policy, curricula, and practices do not clearly show the type of trainee needed and how to produce that person. Training is more superficial and uninspiring. Training activities still remain in their infancy and relatively little has been done to develop a modern, effective and specific training philosophy based on relevant learning theories. The key to the delivery of excellent teaching and learning in technical teacher training is knowledge and understanding about the role of training philosophy in both pedagogy and training of technical teachers and instructors. Modern technical teacher education is an interrelation between three foundational dimensions: Formal subject or technical knowledge, pedagogic expertise and practical work experience. There is a need to replace educational knowledge as 'generic' with a stronger understanding of the relation between a particular form of knowledge and its pedagogy. There is a need to move away from ways that separate knowledge from practice in training technical teachers and instructors and adopt a philosophy that integrates the two. This is due to the fact that different forms of knowledge have a strong effect on what counts as practice. Only then will we be able to have technical teacher education that will meet the current knowledge demands of innovation and creativity in Uganda.

We need a training philosophy that will produce active participants who can explore, manipulate, experiment, question, and search for answers by themselves. We need a pedagogical philosophy that will create a sphere which stimulates curiosity for exploration and change in actions through an explorative process.

9. RECOMMENDATIONS

The study suggests the following policy changes to enhance technical teacher and instructor training In Uganda

9.1 MOES

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

9.2 TVE Teacher Training Institutions

TVE teacher trainers in Uganda should develop own teaching and learning philosophies to guide their teaching. Training institutions should infuse cognitivism and behaviorism into TVE teacher and instructor training to promote experiential learning. This will subsequently improve the quality of TVE teachers in Uganda.

9.3 NCDC

The National Curriculum Development Centre (NCDC) should fund a study to establish the technical teacher and instructor Training philosophy relevant to Uganda and how it can be effectively implemented.

The findings of this research point to the need for further research to establish the extent to which the National Curriculum Development Centre (NCDC) includes the relevant training philosophy in the technical and vocational teacher training curricula.

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APPENDIX

Codes of Technical Teacher and Instructor Training Institutions that participated in the study

Nakawa Vocational Training Institute- TTT_1
Jinja Vocational Training Institute – TTT_2
National Instructor College Abilonino (NICA) – TTT_3
KAL institute of technical teacher education (KALiotte) – TTT_4
African College of Commerce and Technology Kabale (ACCT-Kabale) – TTT_5
Kyambogo University- TTT_6

