

CONSTRUCTIVISM IN TEACHER PREPARATION IN KENYA

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Abstract

This article summarizes the traditional methods of teacher preparation, in which teachers are trained to efficiently transfer the information from the instructor to the learner and its shortcomings. Tella et al (2010) noted that such instructors-centred methods make the learners not to enjoy their lessons and therefore miss the benefits of intellectual discovery. The author then proposes some principles of Constructivist teacher preparation procedures which could be incorporated so that the instructors encourage the learners to reflect on their experiences and integrate such experiences with the new information in the process of constructing knowledge. Such a learner-centred method has been noted (Chika, 2012) to be powerful in enhancing learning achievement than instructor-centred. The incorporation of the constructivist teacher preparation into Kenya's Education system would reflex the current global curriculum trends where various international countries, including Africas such as Ghana, Nigeria, Namibia, Zimbabwe and South Africa are equally trying the system for better quality Education.

Key words: Constructivism, Traditional Teaching Methods, Teacher Education, Instructor- centred, Learner- centred, Prio Knowledge, Incorporation.

Introduction

Teacher education is a driver for sustainable development because its products, teachers, perform the activating optimal functioning of social, economic and political facts and again literally every knowledgeable and skilled individuals have been shaped by the contributions of teachers. (Namunga & Otunga, 2012). The preparation of teachers in the Kenyan context refers to the concept of Teacher Education. Teacher Education involves the range of activities that constitute the preparation for and improvement of the teaching profession (Namunga & Otunga, 2012). Kafu (2003) equally refers to it as ostensibly designed, developed and ministered to produce school teachers for established system of Education. To many Kenya educators it is understood as the pre-service, in-service Education and training all those involved in the dissemination of knowledge at all levels of education with the aim of exposing them to new ideas and practices which continuously improve their ability to educate (Namunga & Otunga, 2012).

Teacher Education in Kenya (Lukas, 1968) is realized to be the main pillar of any system of Education and custodian of society's culture. The Kenya government echoed the same view in the Sessional paper No. 6 of 1988 and indicated that "There is an

urgent need to develop and promote teacher Education program if the administration of Education in the country is to succeed and the national development is to be accelerated" (Republic of Kenya, 1988).

There are various types of teacher Education programs being practiced in Kenya. These include the following:

i) Early Childhood Development teacher Education (ECDE)

This is the training of instructors that is done in two levels: Certificate and Diploma and it is done by different agencies such as the county governments. For the Certificate training for ECDE, the basic requirements include grade D+ (plus) in KCSE or pass in KCPE and must have taught in the ECDE institution for a minimum of three years. The curriculum at this level covers institutional methods of assessment, types of assessment at this level and the institutional materials needed for assessment. The program takes one year for pre-service which includes three residential school terms and one term of teaching practice in an ECDE institution.

For the Diploma training for ECDE the requirements include recommendations from DICECE, Kindergarten headmistress association, Montessori certificate, P1, C (plain) in KCSE or its equivalent. The curriculum is a little bit broad and includes



preparation of schemes of work, classroom management, control and record keeping. The program takes two years and the teacher trainees go through both pre-service and in-service programs. The pre-service program includes three residential academic school terms with one term for teaching practice in an ECDE institution. In service program involves six residential sessions during school vacations. The teacher trainee is attached to ECDE centre for at least three months to interact with children, teachers, parents and community. The products of ECDE trainees are expected to teach in nursery schools, most of which are attached to primary schools in Kenya.

ii) **Primary Teacher Education (PTE)**

There are both national government (Public) and Private Primary Teachers Colleges. The entry requirement for PTE is a minimum of C (plain) in KCSE, D (plain) in Mathematics and C- (minus) in English or its equivalent.

The curriculum is broad-based and was last revised in 2004. The trainees take ten subjects in the first year and in second year they are allowed to do either Science or Arts which consists of five core subjects and four elective subjects. The course takes two years with mandatory teaching practice sessions, one in first year and two in second year. The products are expected to teach in primary schools.

iii) **Diploma Teacher Education:**

The requirements for admission is a minimum of C+ (plus) in KCSE; C+ in subjects of specialization; C (plain) in Mathematics for those taking Science and D+ (plus) in Mathematics for those taking Humanities and C(plain) in English.

The program takes three years. The trainees are offered a broad based curriculum which comprises of two teaching subjects and professional and support subjects such as Education, Environmental Education, Physical Education, Communication Skills, Entrepreneurship, ICT, General Workshop Practices, Library and Information Studies and Guidance and Counseling.

There are also Kenya Technical Teachers College (KTTC) offering technical Education and Kenya Institute of Special Education (KISE) offering special education which have their own admission requirements.

iv) **Bachelor of Education (B. Ed):**

The Trainees are prepared in various universities in the country. The basic requirements include a minimum of C+ in KCSE and mean grade of C+ in the two teaching subjects. The program takes four years.

The trainees are offered broad based curriculum which comprises of two teaching subjects. Further one can either choose Arts or Science and then graduate with B. Ed. (Arts) or B. Ed (Science).

The paper tries to propose certain principles of Constructivism which should be incorporated into the current teacher Education in Kenya for the better quality Education among the learners. It is basically divided into three areas: Characteristics of traditional teacher preparation with some challenges; basic principles of Constructivist teacher preparation with relevant advantages to the learners and the Kenyan context of curriculum trends and the traces of constructivist teacher preparation activities in the global context with special reference to African countries research activities on the same.

Characteristics of Traditional Methods of Teacher preparation in Kenya:

The teacher-centred teaching approach involves careful and meticulous planning of the curriculum and purposeful instructional procedures by the teacher, in which the learners have a definite and fixed perception of their role as listeners while the teachers are expected to be talkers and custodian of knowledge (Odundo & Gunga, 2013). The preparation of teachers through the traditional methods of teaching involves the training of teachers who are expected to efficiently transfer information from the instructors to the learners who are viewed and perceived as passive with minimal integration. Such instructor- centred instructional set of teaching, the learners get into the institution with an expectation of “ a mug and jug” approach to education. Where the learners represent empty mugs which should be filled with knowledge from the instructor’s jug (Ye Zhao, 2013). Such method of teacher preparation is further described (Zvavahu, 2010) as “old fashioned and routine teaching.” The instructor-centred or traditional teacher preparation method is equally referred to as “Instructivist” (Odundo & Gunga, 2013), which is the opposite of “Constructivist” approach.

Some of the characteristics of traditional methods of teacher preparation in Kenya include the following:

- a) The designers of the curriculum have a lot of control in that they first prepare the content and its pre-requisites, and then generate teaching plans or methodology which

the instructor must follow. Such teaching methodologies are expected to expose the learners to the information based on the content.

- b) The traditional methods of instructions in the system promote lecture, especially in universities as one of the best teaching method, where the instructor distributes information to as many as four hundred learners at ago. According to Ayot and Patel (1992) lecture teaching method is a process by which facts are transmitted from the note book of the instructor to the notebook of the learner without passing the minds of either, further lecture is understood as the earliest form of transmission of information from a scholar to the learner. This teaching method (lecture) seems to the minds of traditional educators as efficient because once the instructor chooses a curriculum, he/she does not need any extra work.
- c) The learning environment in a traditional teacher preparation system poses a challenge because it becomes difficult for one lecturer to build relationship with each of four hundred learners. Further a learner is only expected to talk to the instructor if he/she has a question on the presented information. A learner, in such an environment, causes an interruption when he/she talks with the instructor, which in most cases is avoided.
- d) The traditional method of instruction which is also described (Pagan, 2014) as “subject material reproduction” emphasizes examination scores and final answers rather than the way the learners arrive at the answer. The success of this requires the instructors to be trained and prepared to monitor learners responding to the questions the exact way they are taught.
- e) Equally traditional teacher preparation system encourages “learning method like rote memorization” in which learners commit blocks of information to memory. Such blocks of information may include a question and its answer.
- f) The system further allows for use of high level of automatable assessment methods such as multiple-choice testing as currently being practiced in Primary Education Examination

systems in Kenya. The learners have little choice in response unlike the instructor’s curriculum.

There are some challenges that are experienced in traditional teacher preparation in Kenya. The system is instructor-centred which has been found (Tella, Indoshi, & Thuon, 2010) to prepare the teacher trainees who do not enjoy their lessons and directly pass the same to their learners who therefore miss the benefits of intellectual discovery in that they are basically passive and expect knowledge to come from the instructors.

The common teaching method in traditional teacher preparation is lecture, which has been noted, (Adeyemi, 2008) does not stimulate the teacher trainees’ innovation inquiry and scientific thinking and once more they transfer this to their learners, who are encouraged to cram facts which are always forgotten. Further, lecture teaching method has equally been noted (McDowell, 2001) to encourage memorization and reproduction of facts with short notion of knowledge which cannot be used to solve problems in new situations of learning.

The Principles of Constructivist Method of Teacher preparation:

The most important single factor influencing learning is what the learner already knows. Ascertain this and guide him/her accordingly (Ansuel, 1968). The concept of Constructivism refers to the idea that learners construct knowledge for themselves. The construction of knowledge, (Hein, 1991) is based on the learners’ prior knowledge, which in most cases comes from their past experiences such as contents in previous classes, culture and environment. The process of construction of knowledge takes place through the interaction between “prior knowledge” and the presented “new knowledge”. This takes place through the reconciliation between prior knowledge and new knowledge:

- If the learner finds the new knowledge to be better than the prior knowledge, the prior knowledge is ignored and new knowledge is accepted.
- If the new knowledge is not accepted then it would be ignored and the learner continues with the prior knowledge.
- If both the prior knowledge and new knowledge are all accepted then the two would

be combined to create a product, and the product becomes the “new understanding.”

From this perspective it is not possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. This further implies that (Grennon, 2004) any effort to teach should be connected to the state of the learner. The process of teaching should provide a path into the subject for the learner based on the learners' previous knowledge.

The principles of constructivism emphasizes (Bencze, 2005) the building or constructing that occurs in the learners' minds when they learn. In everyday life what each person sees or observes depends more on what is already stored in the person's brain than on what is being emitted from the image. This therefore suggests that learning is an active rather than passive process. In other words learners construct a unique mental image by combining information, in their heads with the information they receive in classrooms or from their sense organs. As far as instruction is concerned the instructor and the learners should engage in active dialogue, such that the presented information to the learner should match the learners' current state of understanding so that the learners continually build upon what they have already learnt. The instructor should acknowledge that learners do not learn in the same way, and so they should implement a variety of teaching styles throughout a course for this would give different learners a chance to learn.

The process of instruction should allow the learners to construct their own knowledge, for the following percentages represent amount of information retained through the indicated teaching methods (Bencze, 2005):

- Lecture.....5%
- Reading.....10%
- Audiovisual.....20%
- Demonstration.....30%
- Discussion group.....50%
- Practice by doing.....75%
- Teach others/immediate use of learnin.....90%

The constructivist approach is a high learner emphasis in which the instructor encourages the learners to actively seek their own knowledge sources to deepen and enrich their comprehension of the course material. The mode of instruction is learner-centred in which they are encouraged to display elements of Scientific reasoning such as recognition of the problem, formulation of hypothesis, construction of mental

models, testing the hypothesis and reaching possible conclusions.

The constructivist approach to teacher preparation involves the learners being engaged in a process of constructing knowledge based on integrating what they already know with new information and the experiences they encounter (Ciminelli, 2009). These principles of constructivism have the following advantages to the teacher trainees:-

i) **The instructors encourage and accept the autonomy and initiates of the learners.**

This is very important because in many schools in Kenya are mission statements that purport the learners to be thinking, exploring, generating hypothesis and testing them out. Such mission statements may include “To provide services in a learner friendly environment where the learners achieve their potential” for a boy's school and “ To provide quality Education that empowers the Girl Child with positive attitudes, values and knowledge” for a girl's school. Despite such mission statements, the management structures in such schools militate against such goals, so if autonomy, initiatives and leadership are to be nurtured, it must be done in individual classrooms where the learners are encouraged to contribute to their learning process.

ii) **The instructors enquire about the learners' understanding of the concepts (Prior knowledge of the concepts) before sharing their ideas with the learners.**

Education research (Bencze, 2005) advises that learners begin their study of topics with pre-conceived notions about concepts that instructors want them to learn. The Constructivist teacher is expected to understand the concept map of his/her learners' course contents. This would reflect the order of topics or concepts and indeed it would help him/her to understand the relevant prior knowledge of the courses that the learners are expected to study before he/she shares with them the concerned concepts in the classroom. The learner's notions of possible concepts should be encouraged in the classrooms.

iii) **The instructors allow the learners' responses to drive the classroom lessons.**

In the classroom situation, a learner out of interest or motivation may pose a question that may not be close to the content of discussion, for example in the current Kenya, due to cases of insecurity a learner may pose a question on “Al Shabaab”. It would be important for the instructor to integrate such ques-

tions into classroom lesson discussion. This would therefore allow the learners' interests or motivation to drive the classroom lesson.

iv) **The instructors are encouraged to use raw data, primary sources along with manipulative, interactive and physical materials.**

The instructors are encouraged to use familiar data, raw data which are familiar to the learners, for example in Kenya where the cases of population growth rate are common, then the instructors may use figures in figured based courses like Mathematics or Geography, reflecting population based figures and such may allow the learners to analyze, synthesize and evaluate the effects of the figures to the social and economic conditions of the country.

v) **The classroom situation encourages the instructors to engage in dialogue with the learners and equally the instructors encourage the learners to have a serious classroom dialogue.**

This is sometimes referred to as academic discord which takes place when the learners get the opportunity to express their own ideas and also express and reflect on the ideas of other learners in the classroom; such a process facilitates the meaning making or construction of knowledge. Further learner – learner dialogue encourages cooperative learning (Slavin, 1990) which in turn has promoted interpersonal attraction which is important in interethnic interactions in either multiethnic or multiracial cases in Kenya such as urban institutions or universities.

vi) **The instructors are encouraged to frame tasks or ask questions by using cognitive terminologies such as “classify”, “analyze”, “predict”, and “create”.**

When instructors use cognitive terminologies such as analyze, classify, predict; such terms reflect mental activities which therefore give the learners the orientation that any question may have more than one answer. Such questions further relate to perception and reasoning so then the learners develop the analytic skills and diverse mode of inquiry. Further such terms require the learners to make connection especially between prior knowledge and new knowledge therefore fostering the learners to construct new understanding.

vii) **In assessment the instructors should be involved with the usage of open ended questions and essays.**

Such assessment would provide learners chances of communicating their thoughts to the instructors in a better way and again this would challenge them to

look beyond the apparent and explore events broadly and allow them to form their own understanding of such events.

Curriculum Trends and Teacher Preparation in the Context of Globalization

With the experience of Kenya, one may understand the concept of curriculum trends in different perspectives: it could be based on the transformation of Education systems or different curriculum designs. The transformation of Education systems in Kenya ranges from pre to post colonial Education systems. During the pre-colonial time, Education was based on colonial or British system of 7-4-2-3/5, where there were seven years of primary education, four years of secondary education, two years of high school and three to five years of university education.

From 1967 the East African Community was founded which included Kenya, Uganda and Tanzania. The three countries adopted a single education system where they maintained the colonial system of 7-4-2-3/5 format. With the collapse of East African Community in 1977, Kenya continued with the same system of Education but changed the names of final examinations, for example the East African Certificate of Primary Education (EACPE) became Certificate of Primary Education (CPE); the East African Certificate of Education (EACE) became Kenya Certificate of Education (KCE); and the East African Advanced Certificate of Education (EAACE) became Kenya Advanced Certificate of Education (KACE).

In 1985 the Kenya government changed the Education format to 8-4-4 where there were eight years of primary education, four years of secondary education and four years of university education. Currently the education system format in Kenya is still 8-4-4, but a task force of the Ministry of Education (MEST, 2013) has proposed a new format of 2-6-6-3, where there will be two years of pre-primary education, six years of primary education, six years of secondary education, and three years of university education. The task force restructured the education system for the provision of quality education for the training of citizens for both the Vision 2030, which plans to drive Kenya into becoming a middle-income economy and new constitution of Kenya (2010).

On the other hand, the curriculum experts also



understand curriculum trends on the various curriculum designs that have passed with time. This started with objective or rational model by Ralph Tyler which was produced in 1949. In this case the curriculum developers raised four basic questions that related to objectives, learning experiences, organization of the learning experiences and evaluation; the second model was Bloom's Taxonomy where the levels of learning passed from Knowledge, Comprehension, Application, Analysis, Synthesis to Evaluation; the third model was Lovin Anderson who in 1990s revised the Bloom's taxonomy and changed the levels of learning to pass from Remembering, Understanding, Applying, Analyzing, Evaluating and Creating; the fourth model was Directed instruction method where the instructor controls the instructional goals and chooses materials that are appropriate to the learners; and the fifth model was the Constructivism where the learners actively construct their own knowledge based on their prior knowledge.

The Constructivism as a curriculum model, especially on teacher preparation in the context of globalization appears to have been done through projects and in various centres in some universities in United States of America, Europe and Australia. Some such centres include Centre for Studies in Science and Mathematics Education, University of Leeds in United Kingdom; Centre for International Education, University of Sussex in United States of America and Institute for Learning Centred Education, Niagara University, United States of America. With regard to Africa, traces of constructivism have been through research activities by either the international experts or post-graduate learners in various countries. Such countries include South Africa (Baxen, 2000), Namibia (Pomuti, 2000), Kenya (Otewa, 2005; Odundo & Gunga, 2013), Nigeria (Okeke & Robinson, 1980), and Ghana (Khamiller & Obeng-Asamoah, 1979).

Conclusion

You cannot teach humanity anything. You can only help him/her find it within him/herself (Galileo). Teacher preparation or Teacher Education in Kenya implies the training of instructors (teachers) which perform a noble job of "teaching". Teaching is an interactive process through which knowledge and skills are shared between the instructors and the learners, so that the learners develop the relevant attitudes with a view to improving the learners' understanding and ability to manipulate the social, economic, political and

physical environment to enhance their survival (Ayot & Patel, 1992). In terms of instruction, instructors prefer methods that make their work easier based on their beliefs, personal preferences and norms of their discipline (Watson, 2003). Again in the traditional methods of teaching, instructors have the discretion to choose methods for delivering lessons to their learners and much has been instructor-centred.

In the current teacher education in Kenya, most of the pre-service instructional practices have preferred instructor-centred approach because the learners find it easy to pass the important examinations, most of the instructors or lecturers in the colleges and universities have gone through the same approach and the instructors prefer to maintain the control power of the instructor-centred approach since they are more concerned with behavior management than the learners' learning (Brooks and Brooks, 1999). On the other hand, the constructivist approach emphasizes the learner-centred, which engages learners actively in the learning process for effective mastery of the subject matter and promotion of a positive attitudes towards the subject (Odundo & Gunga, 2013).

The learner-centred approach was also highlighted by the Kenyan Ministry of Education in its letter presented at the International Conference on Education in 2001, in which it promoted the teaching approach that would adopt learning to be more learner-centred in order to promote imaginative, critical and creative skills in the learners, therefore resulting in better achievement on instructional objectives (MEST, 2001). Froyd (2007) further indicated that the standard features of learner-centred pedagogy would include collaborative learning, connecting new information to previous knowledge and critical thinking. These are the advantages enlisted under constructivist teacher preparation which the author promotes to be added to the current system of Teacher Education in Kenya, so as to make the teacher – trainees to perceive teaching profession as learner-centred for better collaboration in the service.

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