

Teacher Education Preparation program for the 21st Century. Which way forward for Kenya?

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Abstract

Teacher quality is always cited as the most significant efficiency of teacher preparation programs. This paper discusses the aspects of Teacher education factor that influences student achievement. There has always been increase interest in examining the preparation program for the 21st century in Kenya and recommending the way forward for our teacher education preparation program in the primary teachers colleges. This paper gives the background of the teacher preparation program in Kenya and how we need to prepare teachers for the 21st century. The paper will also focus on whether the practising teachers are empowered to deal with the learner and practising teachers in schools.

Keywords: Teacher preparation, Pedagogical content knowledge, Content knowledge, ICT integration, Collaborative learning, Special needs.

We are encouraging the development of meaningful career ladders and stronger efforts to retain the great teachers we have ... From newly hired teachers to tenured teachers to master teachers, mentors, department heads and principals. We need to rebuild education as a profession with real opportunities for growth that sustain a teacher's craft over a career, not just a couple of years" (Duncan, 2010).

Introduction

The changing world of the student, the impact of new technologies and the changing demands of world of work have implication for the kind of teaching and learning that will go on in our schools. For the best students achievements/performance to be achieved and realized there should be proper teacher preparation to face the exigencies of the 21st century. In addition, teacher education preparation program has always been a crucial and symbolically significant field of education development in every country. A country's nation building lies in the hands of its teachers. No matter how good the curriculum, infrastructure or teaching aids are, at the end of the day it is the teachers who make a difference in preparation of the learners.

Teachers are valuable human resources that a nation can count upon to mould and nurture its young minds (Syed Azizi Wafa, Ramayah, & Tan, 2003). Further, Teachers are at the heart of the educational process. Additionally, A teacher, according to shiundu and Omulando (1992), is the most important person in teaching who sees that educational program are successfully implemented by organizing and managing the learning experiences and environments. To educate others therefore, one needs to be educated and have a broad background of general cultural training that provides a broad liberal education. Working as an expert requires the acquisition of knowledge and practical abilities to work in complex situations. Teachers need the self confidence to carry out their duties in demanding unique situations and need to implement their expertise in such a way that their customers, stakeholders and colleagues trust them (Isopahkala Brunet, 2004). They need research –based, research informed knowledge and be open to acquiring and assessing local evidence (Scardamalia and Bereiter, 2003). Teacher education is an important component of education. Through it, school teachers who are considered mentors of society are prepared and produced (Lucas, 1972). Kafu (2003) says that teacher education is ostensibly designed, developed and administered to produce school teachers for the established system of education. Loughran (2006) looks at teacher education as the pre-service and in-service teacher preparation where students of teaching seek to develop knowledge and skills of teaching and to learn how to competently apply these in practice. These views summarize the importance and the role of teacher education in the life of a given society. Education in this respect is regarded as the driving force for social development. Teacher education in this paper is seen as the pre-service and in-service education and training of all those involved in the dissemination of knowledge at all levels of education aimed at exposing them to new ideas and practices which continuously improve their ability to educate. The improved ability to educate is an important ingredient for sustainable development.

The greater the importance attached to education as a whole-whether for cultural transmission, for social cohesion and justice, or for human resource development so critical in modern, technology-based economies, the higher is the priority that must be accorded to the teachers responsible for that education (OECD, 1989).It is imperative to note that Preparing quality teachers is fundamental to ensuring students' success (Darling-Hammond, 1999; National Commission on Teaching and America's Future, 1996). Recognizing the importance of quality teaching, reformers are suggesting that preparation and continuing education programs for teachers need rethinking (Hinds, 2002; National Research Council, 2000). Am in total agreement as several

reforms on education such as introduction of the ICT in the teacher preparation program syllabus and specialization in primary school teaching subjects have been made in Kenya since independence. If teacher educators are to develop more coherent and ongoing experiences and programs, they will need a better understanding of how teachers' knowledge of teaching grows and is connected from one set of experiences to the next. To have such teachers we must start by cultivating on the appropriate activities in the teacher education program (Arnistine, 1990). Furthermore, the demands on teachers are increasing. Teachers need not only to be able to keep order and provide useful information to students but also to be increasingly effective in enabling a diverse group of students to learn ever more complex material. This paper is urging for a better and an effective teacher education program that is suitable for preparation of teachers for the twenty first century.

Historical Development of Teacher Education Preparation Program in Kenya

According to Kafu (2011), Formal teacher education preparation program was introduced in Kenya in the mid-nineteenth century by European Christian Missionaries (Karanja, 1995). This program of education was patterned on the Western European and Canadian established teacher education models of the early nineteenth century. The urge to establish teacher education program at the time was necessitated by the unplanned, rapid expansion of the "mission" and "bush" schools (Sifuna and Indire, 1974). This development called for an equally sharp increase in the supply of teachers to work in the newly established schools. In addition, there was need to produce school teachers to relieve missionaries who were required to concentrate on missionary/evangelization work. Further, the established mission and "bush" schools according to (Sifuna and Indire, 1974) were Primary (Classes B and A, and Standards I–IV) schools and intermediate (Standards V – VIII) schools. These institutions needed Primary school teachers. Therefore, the designed teacher education preparation program catered mainly for Primary School leavers from the level of Standard Three to Eight (Standard III – VIII). This shows that most of the teacher-trainees were of low academic qualifications although for that period in time, they were the most well educated individuals.

However, after the First World War (1914–1919), there was increased demand for African education especially higher education which was referred to as secondary school education. This demand led to establishment of secondary schools which needed teachers of higher caliber. Consequently, Makerere College in Uganda was established to train teachers of Diploma in Education qualification in the early 1940's (Beecher Education Commission, 1943; Karanja, 1995). This was followed by the introduction of Kenyatta College in 1965 and Kenya Science Teachers College in 1966 to train S1 teachers, and then Kenya Technical Teachers College in 1977 to train teachers in technical subjects at Diploma level (Otiende, 1992). However, much earlier and to compliment the effort of Makerere University College, University of Nairobi College had started training graduate secondary teachers with Bachelor of Arts /Bachelor of Science (Education option) qualification in 1966. But this was later to be transformed into the Bachelor of Education (B.Ed.) professional degree qualification in 1970. This was expanded with the establishment of Kenyatta University College in 1972. Today there are more than twenty public and private universities in the country conducting teacher education preparation programs in Early Childhood Development Education (ECDE), Primary school Education and Secondary School Education.

From the colonial period up to the mid-seventies (1847-1970's) teacher education preparation was a respected component of education. It was an education program one would be proud of and reserved for the selected few. This was reflected in the administration of the program. Only privileged individuals in terms of qualifications, experience and competence were associated with this program of education. The society saw and felt that the future of Kenya lay in this program of education. The society expected the program and its products who are the school teachers to develop and provide leadership in its development (Kafu, 2011). But with time, this high esteem has steadily waned. The society no longer regards teacher education highly when compared to other sectors of education. This attitude is seen in the manner the government is managing this program of teacher education preparation program both in primary teachers training colleges and the university level. The program has been marginalized. No Great emphasis is being placed on the development of teachers in preparation for the task ahead. This treatment of teacher education has promoted the observed poor image of this program, teaching profession and school teachers respectively in the society.

Current Teacher education preparation program in Kenya

The teacher education preparation programs in Kenya have been to prepare teachers to meet the challenge of the shortage of teachers in the country both in the primary and the secondary. On attaining independence in 1963, Kenya set out to expand primary teacher training. Currently, Kenya has twenty-one public primary school teachers' training colleges, regionally distributed and admitting between 8400 and 8600 trainees each year. Over 90 percent of the students /are within the 18 and 30 year age range. However, Effective student learning and achievement is hampered by weaknesses in teachers' pedagogical content knowledge (PCK) and classroom practice (Pontefract & Hardman 2005; Akyeamong, Pryor & Ampiah 2006, Moon et al. 2005; Byamugisha &

Ssenabulya, 2005) both of which are developed through effective initial teacher education and continuing professional development (CPD) program for teachers. Currently there are five teacher education programs in Kenya which includes:

- (i) The Early Childhood Development and Education (ECDE) teacher education program in which teachers are trained through in-service courses in District Centres for Early Childhood Education (DICECEs). The National Centre for Early Childhood Education (NACECE) develops the curriculum, trains trainers and supervisors, and conducts monitoring and evaluation
- (ii) Secondary teacher education which is provided at the diploma and degree levels in diploma teacher training colleges and universities respectively
- (iii) Technical teacher education is offered at the Kenya Technical Teachers College in Nairobi which trains diploma level teachers for secondary schools, technical training institutes, primary teachers' colleges, institutes of technology and vocational polytechnics
- (iv) Special needs education teacher education is provided to professionally qualified practicing teachers through a two-year diploma program at the Kenya Institute of Special Education (KISE)
- (v) Primary teacher education (PTE) which is provided in 21 public certificate level colleges through a two-year, residential program.

The 2004 PTE syllabus constitutes the current PTE curriculum. The syllabus provides for:

- (i) Five core subjects that are compulsory for all students – English, Kiswahili, professional studies, physical education and information communication and technology (ICT).
- (ii) Two options each with four subjects for the student teachers to choose one of the options. Option A comprises science, home science, agriculture and mathematics while Option B comprises music, art and craft, social studies and religious education. In the first year, students study 10 subjects, mathematics, English, Kiswahili, science, social studies and religious education, professional studies, creative arts, physical education and ICT. In the second year, students take the five core subjects (English, Kiswahili, education, physical education and ICT) and the four subjects in either Option A or Option B.
- (iii) Professional studies which includes the education disciplines such as foundations of education (philosophy, history, sociology and comparative education), curriculum studies, education psychology including educational measurement and evaluation, and educational administration as well as Special Needs Education (SNE), guidance and counseling and legal issues in education.

The teachers' preparation in the primary level teacher colleges takes a period of two years while for secondary school teachers it takes four years for those training at the university while those in diploma colleges takes three years. The teaching practice for the primary school teachers are in three sessions, the first session is during the second term of the 6 terms in the program, the second in the fourth term, and the third in the sixth term of three weeks or two depending on the institution, while for secondary school it takes three months. Additionally, the teaching practice period for primary school is very short taking into consideration that the teachers need to learn their students. By contrast, the most powerful programs require student's teachers to spend extensive time in the field throughout the entire program, examining and applying the concepts and strategies they are simultaneously learning about in their courses alongside teachers who can show them how to teach in ways that are responsive to learners. The current teacher education program in Kenya needs to be reform to include enough time for the trainee teacher to practice in an attached school. This is because it currently forces the trainee teachers to go through a lot of course work and little real teaching which is the core of the preparation. Examinations are common in the teachers' preparation colleges to determine candidates' readiness and capacity for teacher education programs. In countries where there are no national exams, teacher preparation institutions set their own criteria for admission, such as in France, New Zealand, Canada, and Japan. In the U.S., an increasing number of states require some form of testing before entry into a teacher education program. In addition, 15 states and over 70 percent of colleges have set minimum grade-point averages for entry into teacher education in such countries (Darling-Hammond & Cobb, 1995). Qualifications for entry into a teacher education program vary considerably, and most countries have multiple entry points into the field of teaching. Entry varies by type of preparing institution and by the school level for which candidates plan to teach either in primary or secondary. With the exception of the People's Republic of China, most countries now require the completion of secondary education for entry into preparation programs. In the People's Republic of China, preprimary and primary school teachers typically have completed junior high school plus a 3- to 4-year teacher training program (State Education Commission, 1995). While the entry criteria for primary teacher education for a candidate to qualify for primary teacher education course (PTE) in Kenya, one must have acquired a minimum grade of C (plain) in the Kenya Certificate of Secondary Education (KCSE). In addition, one must have obtained a minimum grade of D in Mathematics and C- in English. Candidates' academic achievement is assessed through grades and test scores (MOE, 2010).

Further, the Evaluation of the curriculum in Primary Teachers Examination (PTE) is both internal and external and it takes three forms continuous assessment, a final examination and assessment through Teaching

Practice. Continuous assessment contributes 30 per cent of the total marks while the other 70 per cent comes from the final examination administered by the Kenya National Examination Council (KNEC). To qualify for the award of a PTE certificate, the student must pass in eight subjects out of nine in the PTE examination and must pass in the practical teaching practice. The final assessment of teaching practice is conducted during the third teaching practice by a panel of external assessors made up of Quality Assurance and Standards Officers (QASOs), college tutors and officers from KIE on behalf of KNEC. Supervision of the first and second sessions' teaching practice is conducted by the relevant college tutors. The final grade distinction, credit, passes and fail is determined by passes in the six best performed subjects. Some countries also assess language and communication skills, conduct interviews, and consider aptitude for leading co curricular activities. Further, in countries like Kenya, student intake in teacher education is determined by government through the ministry of education. In addition, in Kenya the candidate admitted to the public teachers preparation colleges is determined by the availability of accommodation space. This is different with the U.S., Canada, and Japan, where there are no set processes in place to determine the number of students admitted into teacher education. Program size typically depends on the number of candidates meeting entry requirements and the admission policies of the institution. In some Canadian provinces, intake quotas are fixed for specific content areas. While in both the U.S. and Canada, the cost of teacher education is borne by the candidate in the form of tuition payments (Cobb, Darling-Hammond, & Murangi, 1995). Such is the case in Germany, France, and Japan. Usually, the government underwrites some or all of the costs of education for candidates. For example, in France candidates are given government stipends and receive a salary in their final year of studies, which serves as their residency under the supervision of an experienced teacher (Holyoake, 1993).

How do we prepare our teachers for the Twenty first century?

First, the teacher preparation education program needs to include content knowledge which is about the actual subject matter to be learned or taught. Teachers need to understand and know the subjects that they teach including the knowledge of central facts, concepts, theories and even procedures within a given field, knowledge of explanatory frameworks that organize and connect ideas, and knowledge of the rules of evidence and proof (Shulman, 1986). Additionally, teachers trainee also need to understand the nature of knowledge and inquiry in different fields. For example, how is a proof in mathematics different from an explanation in history or geography? This is because if they lack the understanding they might misrepresent those subjects to their learners (Ball & McDiarmid, 1990). Currently teacher trainees when posted to their primary schools for teaching, some are given subjects to teach of which they did not do well in their form four. Most of them tend to decline to teach the allocated subjects but due to lack of enough staff, they tend to teach but the CK is lacking.

Further, the twenty first century teachers need to understand the person, the spirit, of every child and find a way to nurture that spirit. And they need the skills to construct and manage classroom activities efficiently, communicate well, use technology, and reflect on their practice to learn from and improve it continually. Thus, schools of education must design programs that help prospective teachers to understand deeply a wide array of things about learning, social and cultural contexts, and teaching and be able to enact these understandings in complex classrooms serving increasingly diverse students; in addition, if prospective teachers are to succeed at this task, schools of education must design programs that transform the kinds of settings in which novices learn to teach and later become teachers.

An educational program for both prospective and practicing teachers needs to develop their pedagogical content knowledge (PCK) which is how particular topics, problems or issues are organized, presented and adapted to the diverse interests and abilities of learners and it helps teachers understand how to transfer the knowledge of content to the learners. (Geddis, 1993, Darling-Hammond, 2006). Moreover, the PCK includes how a teacher transforms the content knowledge which he/she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by learners, as this will hold teachers accountable for the quality and effectiveness of their teaching (Shulman, 1987, Sawchuck, 2008). Consequently, teachers need to integrate and use knowledge in skillful ways in the classroom and not only worry about what to teach but how to teach, teachers also need to figure out what students know and believe about a topic and how the learners are likely to get new ideas from it through interacting with them and also involving them in the discussion.

In Kenyan teachers training colleges, emphasis is on child centered and interactive pedagogic methodologies. However, these methodologies are unduly influenced by the nature and purpose of examinations administered at the end of the program. These examinations and the general assessment tools are mainly used as final judgment instruments and they often incidentally test low levels of achievement and factual cognitive domain traits. Since the pedagogics and methodologies are heavily influenced by examinations, Teachers preparation colleges should give a greater weight to the trainees' ability to organize educational assessment.

Consequently, Teacher preparation colleges need to change from traditional models of teacher education is the importance of extensive and intensely supervised clinical work tightly integrated with course

work that allows candidates to learn from expert practice in schools that serve diverse students. All of the adjectives in the previous sentence matter: *Extensive* clinical work, *intensive* supervision, *expert* modeling of practice, and *diverse* students are critical to allowing candidates to learn to practice *in* practice with students who call for serious teaching skills (Ball & Cohen, 1999). Securing these features will take radical overhaul of the status quo. Furthermore, to be most powerful, this work needs to incorporate newly emerging pedagogies such as close analyses of learning and teaching, case methods, performance assessments, and action research that link theory and practice in ways that theorize practice and make formal learning practical. Teacher preparation for the twenty first century needs to include the issue of clinical schools. This clinical school helps teachers transform knowledge gained through course work into skilled practice, and it expose teachers to real teaching for a long time before posted to various schools. In addition, (Darling-Hammond, 1996) states that teachers' preparations need to encourage the teaching of skills in using array of teaching strategies like the cooperative learning and even classroom management, and technologies as this will increase effectiveness in working with students from diverse backgrounds. In clinical school the prospective teachers will learn through observation of the learners, learn to assess learners authentically and get to understand how children learn, through this they will be able to strengthen their practice. At the clinical schools beginning teachers gets the opportunity to work with senior teachers who will work as mentors, co-researchers and teacher leaders (Darling-Hummond,1994). Moreover, the prospective teachers are engage in studying research and conducting their own inquiries through action research, cases and even structured reflections. In Kenya teachers are taken out for teaching practice by their respective institutions for a period of three weeks. This is a short period and that teachers would not have interacted with the learners' very well and that at the end of the three weeks nothing much would have been covered by the teacher.

The twenty first century teacher preparation should include the teaching of the special need learners in the regular classroom. Stayton & McCollum,(2002) states it is imperative that teachers are trained to handle inclusive classrooms. In a research carried out Reed and Monda-Amaya (1995) found out that prospective teachers are not well prepared for working with students with exceptional needs, this is true as in my Kenyan context the prospective teachers curriculum has very little to offer on handling these learners and that those who need to specialized in that field have to take a special course. Shippen, Crites, Houchins, Ramsey and Simon, (2005) states that dual training in general and special education may produce educators who are more willing and capable to deal with students with diverse learning needs in the same regular classes, a point supported by Darling Hammond (2006) who asserts that teachers need much deeper knowledge to based on the teaching of diverse learners. Additionally the current content on teachers preparation may be revised to include skills in the handling of the special learners. (Strawderman&Lindsay, 1995)

Consequently, the twenty first century teachers need to be familiar with the new technology and incorporate it in classroom teaching. This use of technology in learning helps the students interacts with the contents, programmed interface, the instructor, and other learners both individually and in groups (Geer, 2000).The use of technology in teaching in classroom requires the prospective teachers to have used the facilities and are familiar with the use of ICT in their classes. Indeed the teachers need to have skills on the operating particular technologies, which includes knowledge of operating systems and computers hardware and also use standards sets of software tools such as word processors, spreadsheets, browsers and e-mails. Further to this, Teachers need to understand in addition to the subject matter the manner in which can be changed through application of technology. It is of great importance also for the prospective and the practicing teachers to understand about curriculum resources and technologies to connect their students with sources of information and knowledge that allows them to explore ideas acquire and synthesize information. For example, learners can play with the computers and construct shapes and forms which change the nature of learning geometry. (Darling-Hammond, 2005). In order for this to happen, teachers need to be trained to use technology. In my context teachers are not trained on the integration of the technology and computers and hence are not able to use to integrate with their classroom teaching. For example donors donated computers to my school and they were kept in the store as there was no teacher with computer skills.

Technology can and should be used to support new social arrangements in teacher education. It may be useful for teacher preparation institutions to think of one of their responsibilities as the need to produce technically literate teaching professionals (Dexter & Riedel, 2003). At the core of all communities are their literacies. According to Pellegrino et al., (2006); Topp, Mortensen, & Grandgenett, (1995), schools will have to develop specific use of technology. However, the tasks of teacher preparation should be first to recognize and include these literacies and second to deepen and articulate these emerging literacies. Teachers in the early 21st century will need to be fluent in the school-centered uses of general productivity tools. Second, teachers will need to be fluent in the distinctive technologies that are in use in their specialized communities of practice (e.g., mathematics). We now turn to these general and distinctive technical literacies.

Further the prospective and practicing teachers need to understand what individual learners believe

about themselves, what they care about, and what tasks are likely to give them enough success to encourage them to work hard to learn (Grimmett and Mackinnon 1992). The theory underpinning this concept is Vygotsky theory of social constructivism which states that learners are capable of constructing their own knowledge. Additionally, the theory of social learning states that people learn from one another. Though the theory states that people learn from each other, the education offered currently in our teacher preparation colleges, prepare people who assume they know everything and hence have no need to learn from their learners. The theory is contrary to Plato's view that knowledge is out there and people have to be taught to gain it. The teacher who is conversant with the learners will use student centered method to allow them participate in their own learning. Dewey, (1930) suggests that learners need to actively engage with the world to learn from it.

Teachers are supposed to learn to work collaboratively. This will enable them work, acquire and continue to share knowledge on behalf of their students. Through this teachers will be able to learn and understand how students learn and what various need if they are to learn effectively and they will incorporate into their teaching and curriculum construction. Additionally, the teachers have to understand how to structure interactions among learners such it enable learning to occur and the prospective teachers need to collaborate with other teachers in their training as this will help them understand how to work with parents to learn more about their children and hence reshape supportive experiences at school and home. Although teachers are suppose to learn how to work with others and even the education stakeholders to understand their students, currently every teacher is working as an individual to attain the required mean score.

The prospective and the practicing teachers in the field need to be able to analyze and reflect on their practice to assess the effects of their teachings and see how to improve it for the benefit of the learners. In addition, teachers should continuously evaluate what students are thinking and understanding and see how to reshape their plans to take account of what they have discovered (Darling-Hammond, 1998) From my experience having undergone through the initial teachers training, I had not been taught on reflection and the only way I was to asses my learners was through the lesson objectives. Currently, the practicing teachers are not reflective teachers in the sense that for them to understand their learners, they gauge them through the many continuous assessment tests they give them. This could be possible when teachers are prepared to be using action research as a way of solving the classroom problems. This is because action research is a reflective process that allows for inquiry and discussion as components of the "research." Often, action research is a collaborative activity among colleagues searching for solutions to everyday, real problems experienced in schools, or looking for ways to improve instruction and increase student achievement. Further, the teacher education programme need to prepare teachers as classroom researchers and expert collaborators who can learn from one another is essential when the range of knowledge for teaching has grown so expansive that it cannot be mastered by any individual and when students' infinitely diverse ways of learning are recognized as requiring continual adaptations in teaching.

Conclusion

Teachers are, thus an important component of education whose services are important in the realization of educational goals the world over. Due to their central role in the enterprise of education, teachers require effective and sufficient preparation to be able to adequately carry out their roles and responsibilities. Otiende et al (1992) acknowledge that trained teachers are vital for quality education. Teaching according to Hough and Duncan (1997) is an activity, a unique professional, rational and human activity in which one creatively and imaginatively uses himself/herself and his/her knowledge to promote the learning and welfare of others hence need proper preparation. It is imperative to note that teachers are in charge of the education programs at all levels of education and their influence permeates all spheres of life. It is for this reason that they are regarded as the drivers of social, economic and political development of society. Consequently, it is suggested that teacher education preparation program should be carefully managed to incorporate all socio-cultural, economic and political aspects of life for the teachers to effectively serve their roles as instructional leaders in their spheres of influence. The best approach to realizing this is for teacher education program to be based on relevant research findings focused on enhancement of teacher education program. An effective education program therefore will prepare teachers for the enormous tasks of the twenty first century. Education Educators need to preparer teachers to have enough exposure through the clinical school and use of the technology. This will prepare them to handle both the large classes and the diverse learners.

Further the twenty first century teachers need to be able to use technology to integrate into their classroom teaching. The teachers also need to be prepared to use action research as a way of solving problems in their classroom. This is done through reflecting on what is being taught and how it can be change for the benefit of the learners.

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