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The Adequacy of Instructional Materials and Physical Facilities and their Effects on Quality of Teacher Preparation in Emerging Private Primary Teacher Training Colleges in Bungoma County, Kenya

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Abstract: *The research was carried out in eight private teacher training colleges in Western Province in Kenya. The study sample was selected through simple random and purposive sampling techniques. The sample comprised of eight college principals, 43 tutors and 416 second year teacher trainees. Pilot testing of the research instruments to establish how the sampled population would respond to the question items contained in the research instrument was very useful. Data was collected through questionnaires and observation checklists. The SPSS computer package was utilized in the analysis of descriptive statistics such as frequencies and percentages. The research findings were presented the results in form of frequency tables and pie-charts. The research established that the rapid emergence of private primary teacher training colleges had a negative impact on quality of teacher preparation. These institutions were faced with challenges such as; lack of adequate facilities like libraries and inadequate instructional materials. These factors continue to have negative effect on the quality of graduates produced.*

Key Words: Instructional Materials, Physical Facilities, Teacher Preparation, Quality Education

1. Introduction

Education, according to Coombs (1970) consists of two components. He classified these two components into inputs and outputs. According to him, inputs consist of human and material resources and outputs are the goals and outcomes of the educational process. Both the inputs and outputs form a dynamic organic whole and if one wants to investigate and assess the educational system in order to improve its performance, effects of one component on the other must be examined.

Instructional resources which are educational inputs are of vital importance to the teaching of any subject in the school curriculum. Wales (1975) was of the opinion that the use of instructional resources would make discovered facts glued firmly to the memory of students. Savoury (1958) also added that, a well planned and imaginative use of visual aids in lessons should do much to banish apathy, supplement inadequacy of books as well as arouse students' interest by giving them something practical to see and do, and at the same time helping to train them to think things out themselves. Scarcity of textbooks, libraries and physical facilities according to Coombs (1970), will constraint

educational system from responding more fully to new demands. In order to raise the quality of education, its efficiency and productivity, better learning materials and resources are needed. Knezewich (1975) also stressed the importance of having appropriate personnel plan and adequate instructional materials and physical facilities to support educational effort.

1.1 Literature Review

Material resources include textbooks, charts, maps, audio-visual and electronic instructional materials such as radio, tape recorder, television and video tape recorder. Other category of material resources consist of paper supplies and writing materials such as pens, eraser, exercise books, crayon, chalk, drawing books, notebooks, pencil, ruler, slate, workbooks and so on (Atkinson 2000). Newton (1997) professed that the magnitude of instruction are more scientific base; make instruction more powerful; make learning more immediate and finally make access to education more equal.

Adeogun (2001) discovered a very strong positive significant relationship between instructional resources and academic performance. According to Adeogun, schools endowed with

more resources performed better than schools that are less endowed. This corroborated the study by Babayomi (1999) that private schools performed better than public schools because of the availability and adequacy of teaching and learning resources. Adeogun (2001) discovered a low level of instructional resources available in public schools and stated that our public schools are starved of both teaching and learning resources. He expresses that effective teaching cannot take place within the classroom if basic instructional resources are not present.

Fuller (1986) suggested that the quality of instructional processes experienced by a learner determines quality of education. Mwiria (1985) also supports that students performance is affected by the quality and quantity of teaching and learning resources. The author noted that institutions with adequate facilities such as textbooks stand a better chance of performing well in examination than poorly equipped ones.

A study conducted by Gogo (2002) on the input of cost sharing on access, equity and quality of secondary education in Rachuonyo district found that the quality of education had remained average for the entire period 1996 to 1999. The author concluded that performance could be attributed to inadequate teaching and learning materials and equipment. In addition, Gogo recommended that in order to provide quality education the availability of relevant teaching /learning materials and facilities is crucial. Ayot (1984) suggested that all that heard and seen, only about 10 percent through the sense of hearing is retained and 80 percent or more through seeing. In this consideration, it would appear likely that the inadequacy of learning facilities affects the quality of education and subsequently learner's performance (Ayot and Olemba, 1984).

Maundu (1987) concurs with the above findings that, good performance demanded that every learning institution be equipped with relevant and adequate text books. Mbiti (1974) strongly feels that when equipment and supplies are delayed, the policy implementers cannot work properly. According to Muthamia (2009), teachers can only be effective and productive in their work if they have adequate and relevant facilities. In addition, Makau (1986) stated that instructional materials such as textbook and science equipment for both teachers and students are key variable in student's learning and performance at all school levels. Furthermore, Maundu (1987) states that instructional resources play an important role in explaining the wide variation in academic performance among the students.

For effective teaching and learning, textbook and resource materials are basic tools, in absence or inadequacy makes teachers handle subjects in an abstract manner, portraying it a dry and non exciting (Eshiwani 1984). In addition, Ayot and Briggs (1992) point out that poor results in education relates to the amount of resources and instructional materials allocated to it. This study dwelt more on textbooks and integration of ICT in education as they are critical instructional materials.

1.2 Physical Facilities

The development and maintenance of physical facilities in educational institutions by communities, parents, and

sponsors should continue to be encouraged. This is because lack of such facilities interferes with learning process (Republic of Kenya, 1988a). The evidence from research in other parts of the world points to the great importance of school facilities in relation to quality education. Difference in school facilities would be seen to account for difference in achievement. Physical resources include classrooms, lecture theatres, auditoriums, administrative block, libraries, laboratories, workshops, play grounds, assembly halls, and special rooms like clinics, staff quarters, students' hostels, kitchen, cafeteria, and toilet.

Lorton and Walley (1979) and Hallack (1990) discovered that learning experiences are fruitful when there are adequate quantity and quality of physical resources; and that unattractive school buildings, crowded classrooms, non-availability of playing ground and surroundings that have no aesthetic beauty can contribute to poor academic performance. To emphasize further the issue of physical facilities, Cameron (1970) underscores the importance of developing adequate and appropriate physical facilities for quality education to be realized.

Mbiti (1974) concurs with Cameroon's views on the relationship between physical facilities and effective implementation of policy guidelines. In addition, Sallis (2002) and Harris (1980) also indicated that an educational programme cannot be effectively implemented using only policy guidelines even if the teachers are trained and committed without adequate and appropriate physical facilities such as classrooms, toilets and playgrounds. MOEST (2005) explains the importance of ensuring that there are adequate and appropriate facilities for teaching-learning so that educational programmes could be implemented effectively.

According to FAWE (2001) schools that lack adequate classrooms for instance, hold their lessons outside or under trees. During bad weather such lessons are postponed or are never held altogether. This interferes with syllabus coverage and students from such schools do not perform well in examination. Republic of Kenya (1988a) identified that Kenya's schools are characterized by variety in the size and quality of buildings. Some schools share classrooms and science laboratories, which are too small for current classes of forty and above students. On the other hand new schools have teaching rooms which are too small because they were not built to specifications. Moreover, most school buildings and other facilities are poorly maintained. Such facilities hamper the teaching and learning process and eventually affect student's performance in examination. Olele (2000) looked at optimal utilization of educational resources in schools in Kisumu district. The study revealed that only a few schools in the district had above five laboratory rooms (19.35%). Since no school can provide adequate teaching services without the use of laboratories, she concluded that lack of laboratory facilities was a major contribution to poor performance of some schools in KCSE, because candidates could not answer questions in practical science subjects. The generalization of an education innovation is accompanied by the need for new resources which should be available for a sufficiently long time in order that the innovation becomes part of the daily life of educational establishment.

Malpica and Rassekh (1983) reported that sufficient coherence should be made between the supply and distribution of resources, buildings and equipment. Their findings revealed that lack of rooms, equipment, financial and material resources, delay in procurement and late delivery may act as a hindrance to innovation and subsequent performance. Musau (2004) found out that lack of library facilities was one of the most serious problems standing in the way of achieving high education standards in learning institutions whereas Ayoo (2002) carried out a study on the effects of school physical facilities on academic performance and established that availability of facilities had a direct link with the performance of learners in examination.

Raju (1973) in "education in Kenya" observed that schools were poorly equipped in the rural areas. There was lack of suitable teaching aids and poor teaching facilities and this negatively relates to performance. Sifuna (1986) also dwelt on this aspect and found a positive correlation between school facilities and performance of learners. In a study "problems of implementing Education Reforms in Nigeria", Tawari (1987) noted that the new educational system stipulated various activities, materials and requirements that would be provided at all levels of the system in order to meet the objectives of the new programme. The nature of the new curriculum pre supposed that infrastructure, laboratories, workshops, classrooms, equipment, physical facilities and teaching aid would be provided to implement the scheme successfully and this success is determined by student performance in examination at the end of his designed course.

A study carried out in Kisumu municipality by Ouma (1987) found that schools that were doing well in national examinations had adequate learning facilities. Heron (1979) in his studies in Kenya found out that a teacher who has to work with fifty learners under a shelter with almost no equipment would find it impossible to implement the kind of activities she or he has been taught during his/her training. Kassam (1978) and Leslie (1992) reported that insufficient learning facilities discourage learners.

According to a Presidential Working Party on Education and Manpower Training for the Next Decade and beyond (Kamunge report, 1988), school learning resources should be planned for properly and utilized in an effective manner to bring about efficient provision of quality and relevant education. Mworira (1993) found out that some schools lacked enough classrooms, desks and chairs leading to overcrowding such conditions frustrated students during learning.

Ayoo (2002) concurs with Mutua (2002) on the importance of learning facilities. On physical facilities, Mutua noted that most schools in Mtito-Andei Division were poorly equipped and they lack the essential physical facilities, which are necessary for learning. Kathuri (1986) notes that better facilities in a school lead to better performance in examinations. This study therefore focused on evaluating adequacy of physical facilities in emerging private teacher training colleges, and its implication on preparation of teachers in Western province.

2. Methodology

2.1. Research Design

The study was carried out using a descriptive research survey design. Orodho (2005) notes that a descriptive research survey design is an appropriate way of evaluating educational programmes as educational activities operate in a social context.

2.2. Target Population

Borg and Gall (1996) define the target population as all the members of a real or hypothetical set of people events and objects to which a researcher wishes to generalize the results of study. The target population in this study was 416 out of 1261 second year teacher trainees in 8 colleges (30% of second-years in each college), 43 out of 85 tutors (50% of the tutors in each of the 8 colleges) and 8 principals out of 11 principals from colleges with second year-teacher trainees.

2.3. Sample and Sampling Procedures

The table below indicates the sample size and sampling techniques employed in this study.

Table 1. Sample Size

Target Population	N	Sample Size(n)	%
Principals	11	08	73
Tutors	85	43	50
Teacher-trainees (2 nd yrs)	1261	416	30

Source: PDE's office – Western province.

Bailey (1978) expressed the opinion that studying the entire population in research gives more weight to the findings. However, a sample was chosen because time and cost did not allow for every member of target population to participate.

A sample is a small portion of the population selected using systematic procedures as representative of that population. The sample was drawn from all the groups of the target population. Mugenda and Mugenda (1999) suggested that where time and resources allow, a researcher should take as big sample as possible. They emphasized that dangers of a small sample were its inability to reproduce the salient characteristics of the target population to an acceptable level.

2.4. Instruments for Data Collection

Information was gathered from the teacher-trainees tutors and principals through the questionnaires. An observational schedule was also used to collect information. Asembo (2003) underscores the importance of using several appropriate instruments for the collection of the relevant information. A variety of research instruments help in getting a holistic view of the research situation. Thus the instruments helped to clarify issues by making it clearer and eliminating any discrepancy in their responses.

2.5. Data Analysis

All the data received was edited, coded, analyzed and finally tabulated using descriptive statistics including frequencies and percentages. The study used frequencies and percentages because they easily communicate the research findings to majority of readers (Gay, 2003). The information was presented in form of tables and pie charts organized according to the objectives.

3. Results and Discussion

3.1 Availability of Instructional Materials and Equipment in Emerging Private Primary Teacher Training Colleges.

Teachers-trainees were asked to indicate whether instructional materials and equipment were adequate. Table 2. Summarizes their responses:

Table 2. Adequacy of Instructional Materials and Equipment

Facility	Inadequate	Adequate	Not available
Textbooks	66.5%	21.1%	12.4%
Stationery	21.6%	78.4%	0.0%
Teaching Aids	31.2%	57.1%	11.7%
Computers	72.8%	23.6%	3.6%
Furniture	38.1%	61.9%	0.0%

Source: Researchers Analysis from Data

The findings in table 2, indicates basic instructional resources as follows, teaching aids (57.1% adequate), stationery (78.4% adequate), and textbooks (66.5% inadequate). Furthermore, when the researcher analyzed the college inventories it was noticed that in some of the colleges the basic instructional resources were inadequate especially textbooks. These results are similar to findings of Yadar (2007) and UNESCO (2008) which detailed that teaching/learning materials such as textbooks, teaching aids (chalk, boards) and stationery affect academic performance of the learners. The findings were also similar to those of Mutai (2006) who asserted that learning is strengthened when there are enough reference materials such as textbooks, stationery and teaching aids. Loxley (1984) indicated that shortage of textbooks and materials had harmful effect on satisfactory teaching. Adeogun (2001) discovered a strong positive significant relationship between instructional resources and academic performance. Schools endowed with more resources performed better than schools that are less endowed. This corroborated the study of Babayomi (1999) that schools with adequate teaching and learning resources performed better in national examinations. Adeogun (2001) further indicated that effective teaching cannot take place within the classroom if basic instructional resources are not adequate.

The findings similarly indicated that facilities such as computers were inadequate at 72.8%. From observation the few computers in place were not in good working condition. Haddad (2003) noted that ICT can change the way teachers teach and that it is especially useful in supporting more student-centred approaches to instruction and in developing the higher order skills and promoting quality education. Given that teachers act as a change agent for technology in education, is essential that in-service and pre-service teachers have basic ICT skills and competencies (UNESCO, 2002). In recognition of ICT importance in teaching and learning, teachers must be given training that enables them to integrate ICTs into their teaching programs.

The findings further indicate that quite a number of the colleges 61.9% had enough furniture. However, (38.1%) lacked enough furniture. From observation, it was noted that boarding facilities especially beds were not enough in some colleges hence warranting students to sleep on the floor or share the available bedding. The findings were in line with Kassam (1978) who also made a similar observation that lack of adequate learning facilities discourages learners. Leslie (1992) supports Kassam's argument by saying that policy implementation requires that resources be adequate and that they be provided at the right time. He further argues that insufficient resources will hinder effective implementation of quality education policy. Gogo (2002) recommended that in order to provide quality education, availability of teaching /learning material and facilities is crucial. The implication of this result is that provision of adequate teaching/learning resources can positively change teachers' attitude to the teaching making teaching and learning interesting not only meaningful but also exciting to the students and hence realization of quality education.

3.2. Availability of Physical Facilities in Emerging Private Primary Teacher Training Colleges.

Teacher-trainees were asked to indicate whether physical facilities were adequate. Table 3 summarizes their responses:

Table 3. Adequacy of infrastructure and physical facilities

Facility	Inadequate	Adequate	Not available
Classroom	56.1%	43.9%	0.0%
Laboratories	38.3%	18.5%	43.1%
Library	13.5%	12.2%	74.4%
Staffroom	23.6%	67.8%	8.6%
Offices	39.6%	7.9%	52.5%
Hostels	34.9%	35.1%	30.0%
Playground	23.4%	31.4%	45.2%

Source: Researcher's Analysis from the Data

Findings in table 3 reveal that some colleges had inadequate facilities like classrooms (56.1% inadequate), hostels (34.9% inadequate), laboratories (43.1% not available), offices (52.5% not available), libraries (74.4% not available) and

playground (45.2% not available). It also emerged that most of the institutions were located in what would be considered uncondusive learning environments such as next to littered backstreets, overcrowded market centres and dilapidated buildings. Others were lying on a less than have an acre piece of land leaving no room for playgrounds. From interviews with principals, they reported that they lacked adequate finances to improve the facilities and the available facilities were still overstretched for instance some students were forced to seek alternative accommodation. The findings agree with those of Vos (2004) who indicated that inadequate facilities could have harmful effect on the quality of education. In addition, Hallack (1990) noted that learning experiences are fruitful when there are adequate quantity and quality of physical resources; and that unattractive school buildings, crowded classrooms, non availability of playing ground and surroundings that have no aesthetic beauty can contribute to poor academic performance. This was also in line with the views of Eshiwani (1984) who observed that availability of classrooms, laboratories and libraries were symbols of high education quality. Yeya (2002) agreed with the above studies that schools with adequate facilities perform better in examination. FAWE (2001), Republic of Kenya (1988), Tawari (1987), Ouma (1987) Sifuna (1986), Malpica and Rassekh (1983) and Heron (1979), all indicated that lack of such facilities interferes with the learning process. This in turn compromise provision of quality education.

4. Conclusion

It is clearly evident that emerging private primary teacher training colleges lacked adequate facilities and learning resources. The status of instructional materials, equipment and facilities are inadequate, obsolete, dilapidated and unsuitable for preparing competent teachers. This state of affairs raises concern about the quality of teachers from emerging private primary teacher training colleges serving in the school system. The proliferations of training institutions in such conditions are a manifestation of the ineffectiveness or near to total collapse of the systems of monitoring and regulation of teacher training institutions. Although the situation might improve, inadequate instructional materials and resources in teaching and learning prevent these institutions from contributing to the production of up-to date and specialized knowledge for their trainees.

5. Recommendation

Teacher quality has long been and will continue to be an important issue to parents, educators and policymakers and to that extent therefore, there will be need for a legislation framework to be enacted to act as a watch dog over the teacher preparation programmes across the nation. In the light of the findings and conclusions of this research it's recommended that, the Principals and the management of emerging private primary teacher training colleges should provide adequate instructional materials and learning facilities to their institutions of learning for effective teaching and learning. More so the Ministry of Education should enhance and enforce regular inspection of private primary teacher training colleges to ensure conformity to standard guidelines.

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