



The Role of Heads of Department in the implementation of Computer Integrated Education in Secondary schools in Nyanza Province, Kenya.

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ABSTRACT

This article describes the results of a study undertaken to investigate the role played by Heads of departments (HODs) in the implementation of computer- integrated education (CIE) in teaching and learning by the departmental staff. A total of 89 HODs drawn from rural, urban and suburban areas participated in this research. A questionnaire was designed and used to collect data on: the role of HODs, use of computers by departments, departmental computer policy, training of HODs in the use of computers, availability of computers and support materials, access, attitudes and views of HODs about the value of computer as a tool for instruction. Data analysis combined qualitative and quantitative methods. The findings indicated that HODs played various roles to ensure that computer integrated education was introduced and included in departmental teaching program. This included planning, organization and management of the computer-learning environment. Further results revealed that 23% of HODs had a departmental policy for the use of computers but 77% had not formulated computer policy. 51% had departmental funds for computer education, while 43% had no funds allocated to them, but 6% did not respond. Other results indicated that 53% HODs were trained in the use of computers, but 47% had no training. The findings also showed lack of suitable software packages and 54% of the respondents agreed that computer was a very valuable tool for instruction.

Keywords: *Role, computer, integration, Heads of Department, implementation, policy, secondary schools*

1. INTRODUCTION

According to Eshiwani (1993) Heads of departments are responsible for organization of their subjects throughout the school. They are required to assist teachers, advise them on teaching of departmental subjects, setting and marking examination, keeping students' records and directing them to useful reference materials. Eshiwani (1993) noted that heads of departments are academic leaders and leadership is associated with responsibility for a task. In the school different responsibilities are widely dispersed among staff with different functions. Leadership is concerned with power and heads of departments in secondary schools are given the power to ensure that departmental subjects are taught effectively Eshiwani (1993). This includes also formulation of departmental academic policies, use of various resources such as computers, availability of teaching and learning resources departmental financial and budgeting, retraining of teachers and evaluation of departmental subjects contents. Therefore, Heads of department need to be well versed in all academic matters in education and have a vision for any curriculum innovation, in order to guide and advice teachers to introduce and use new changes in curriculum and technological devices.

Research findings from previous studies reported by Yee (2000) and Danson (2000) pointed out the vital roles of Heads of departments in the implementation and use of computers in teaching and learning. Yee (2000) studies found out that heads of departments were the provider of resources for teaching and learning. They also suggested to the Principles relevant textbooks and technology for use by departmental staff. And to ensure

that the equipment are available for the staff to use. Danson (2000) found that heads of departments formulated departmental policy to guide the staff for the use of technology. Millar (1997) found that some of the responsibility of HODs included preparing departmental timetable and re-training their staff on new curriculum changes and methodology. Pearson (2000) also reported various government technology policies regarding the use of computers in teaching and learning. He noted that most HODs in his study reported using computers for teaching and learning mathematics, science, and writing skills. Other scholars like Bass (1990 and Leadhood (1994) studies supported the use of computers by departmental heads. Issues such as leadership role, departmental policies, provision of computers for use by departmental staff and students, timetabling, technical staff and training were also some of the responsibilities of Heads of department cited by Millar (1997). Pearson 2001) also reported various government policies for the use of computers by departmental staff. Other scholars like (Bass 1990, Leadhood 1994) supported the finding of (Yee 2000).

2. THEORETICAL FRAMEWORK

This study was based on (Bates 2005) technology computers in education. Availability and classroom use of computers requires academic leadership responsibility. Bates believes that every head or a leader needs to be concerned with what takes place in departmental curriculum innovation and implementation of the new technologies computers used in teaching. Bates noted that as a leader, the head of department needs to formulate rules and policy to guide the implementation of computers



in teaching/learning. Ellington, Race and Percival (1995) believe that the success in establishing the innovation as part of the overall educational framework depends on wide variety of factors such as the quality of the innovation, the nature of the potential users, political factors, and administrative arrangement. Effective management and implementation has recently been of increasing concern in educational technologies that needs investigation.

3. RESEARCH QUESTIONS

This study was guided by the following questions:

- 1) What are the roles played by heads of departments in the implementation of computers in departmental teaching/learning?
- 2) Do teachers in the department use computers in subjects teaching?
- 3) Are computers available in the departments for teachers to use in teaching and learning?

4. METHODOLOGY

Research design

The study adopted survey research design that involved qualitative and quantitative methods of data collection and analysis. The survey design was used because it enables a researcher to collect a great amount of data in a short period of time. It is simple and easy to administer and can be inferred.

Area of Study

This study was carried out in public secondary schools in the old Nyanza province which has since been divided into six counties. Nyanza Province bordered Western province and Rift Valley and Lake Victoria. The province had over 500 secondary schools. But the study was carried out in 30 secondary schools that had computers mixed school drawn from rural, urban and suburban areas. The approach adopted to collect data was questionnaires consisting of both open and closed questions, to elicit qualitative and quantitative data.

5. DATA COLLECTION PROCEDURES

The collection of data was carried out in two phases. The first phase concentrated on a selective review of previous relevant literature on the roles of heads of department on the implementation of computer education. This was a key activity in the effective management of this research. The second phase was concerned with a survey using the questionnaires distributed by the researcher to heads of department to obtain information on 9 items consisting of various questions. The researcher collected

data from HODs personally. This was important so that I could cross check misinterpretation of the questionnaires.

6. DATA ANALYSIS

All of the information collected from heads of department using questionnaires method were sorted out and arranged first before the analysis was done. However, for the open-ended and closed questions contained in questionnaire analysis was done by statistics package; SAS Version 8 “that involved grouping of data into 9 sections of different research questionnaires topics. Descriptive statistics was used for data presentation that combined qualitative and quantitative methods. Qualitative data analysis was used to analyze responses to open-ended questions, and quantitative data analysis was used to present the information obtained from closed questions. The findings were as shown

7. FINDINGS

Background information

Responses from heads of departments (Hods) in schools that participate in the investigation showed that there were 53 schools from rural, 22 schools from urban and 14 schools from suburban areas. Out of these institutions there were 65 male and 24 female heads of departments.

Experience with use of computers

The prior computing experience reported by Heads of department was varied. Most of the Heads of department 63% had experience with the use of computers but 36% had no experience and only 1% reported having a lot of experience in the use of computers.

Heads of departments’ years of service in computer education in the school

The findings from Heads of department indicated that 34% had used the computer in their teaching for up to one year, and 7% for 2 years while another 2% had used computer for 3 years. There were also 5% of Heads of department with 4 years of working in computer education and one of them had used computers for 5 years. 51% had not used computers in their teaching. This shows that most of the Head of department started to use computers at the time when computers were introduced in their schools.

The role of HODs in the use of computers by departmental staff

The findings on this question revealed that HODS played different roles that were summarized and indicated that 20 of them took active part in planning for the introduction of computer integrated education, 10 of them said they were managing the use of computers to ensure it was properly integrated into the curriculum, but



14 of them played the role of a facilitator, while another 30 provided training and guidance to teachers in the use of computers. The other results showed that 15 of the HODs were also participants in the teaching and learning in their classrooms as they worked with students helping them to achieve their goals.

Departmental policy for the use of computers

The results showed that 23% of the Heads of department had a policy for the use of computers, but 77% had not formulated computer policy. Those who had a policy reported using computer in teaching and learning according to government policy; and all students were to be computer literate by the time they complete secondary education, and all teachers were to attend computer courses. However, many Heads of department did not have a computer policy and gave various reasons such as: *lack of access to computers; we have not yet decided; installation system not done; and the computers were recently purchased.*

Priority given to the use of computers

49% of the heads of department had a high regard for the introduction and use of computers; and rated the computer policy very high, but 51% did not respond to this question. However, those who rated the policy high reported that teachers implemented departmental computer policy in order to teach computer literacy skills and to integrate computers into teaching and learning traditional subjects. Some of them reported using computer in administrative work.

Financial and resources allocation for the use of computers

51% of the heads of department reported that they did not have any departmental funds for computer education because the school purchased equipment and other resources for department. But 43% heads of department reported that the school allocated to them funds that was not adequate for purchasing computers. In most cases the amount allocated was very little and was not sufficient to purchase any computer. In one department. In one department for example, the findings showed that a department was allocated 10% of the school budget to purchase computer materials".

Availability of computers and support materials

The results showed that 52% of the Heads of department had a computer syllabus but 48% of them did not have the syllabus. Further analysis indicated that 35% of heads of department had four software packages, and 30% had only 2, while 20% had 6 packages. Most of the heads of department 58% reported having computers

available to them, while technology 42% did not have computers. Only 33% of heads of department had teachers had teachers guide notes, but 77% did not have guide notes. However, the problem of support materials was experienced in all schools investigated.

Conditions of the computers available in study schools

The results indicated that most of the computers available for use by the departments in schools were in good conditions. But a few were not being used because some parts had missing components such as the mouse. However, about 80% of the computers were used for administrative work, but 20% of them did not have computers especially for teaching learning.

Access to computers for teachers to use in teaching

The issue of access to technology and software is vital in the effective utilization of computers in teaching and learning. Heads of departments were asked to state how accessible was the computers to staff members in the department. In response, 50% of the heads of department reported that their teachers had some problems of access to computers. This was a barrier to effective integration of computers in schools investigated, and gave various reasons such as: crowded timetable, lack of sufficient computers and lack of programs to integrate into their subjects

Experience with the use of computers

Experience on the job can help teachers to relate to new situations, to solve classroom problems such as students' discipline during computer classes and to help them find practical approaches to leaning. Experience enables a teacher to draw upon professional insights and skills that includes sensitivity to the specific interest, needs and abilities of students. The participants were asked to state the experience in using computers as by departmental staff. This was important information because lack of experience in technology application could be a problem in departmental implementation of computers in teaching different subjects.

Use of computers in teaching and learning by departmental staff

In response 37% of the heads of department said that their teachers used computers, but 63% did not use computers in teaching and learning. At the same time, 42% of them reported that their teachers started using computers in 2001, but 44% of them said they started using computers in 2000 while 13% started to use computers in 1999. However, the overall finding showed that most of the departments started to use computers in



the year 2000. Further analysis indicated that most of the heads of departments used software such as Ms word; Ms Excel, Spreadsheet, Ms Doss, Database, Power Point, Publisher and Computer Aided Design.

Useful Computer Software

The results indicated that the majority 84% of heads department believed that word processing was very useful to the students to learn first before learning other computer applications, while 47 were of the opinion that spreadsheet was useful, and 40% noted that database was also very good. At the same time 31% of them agreed that programming was useful to learn and only 28% reported that games was good for the students.

Availability of computer education timetable in the schools investigated

The findings on this question indicated that 55% of the heads of department had a departmental computer timetable while 45% did not have a computer timetable. This findings illustrated that heads of department can greatly influence the adoption of computers into subjects teaching by having the subjects included timetable, or could block the information through inaction or resistance to change. In addition most of the heads of department had a computer lessons twice a week in the timetable.

HODs views about the value of computers as a tool for instruction

The results were summarized and showed that 54% of them agreed that computer was very valuable as a tool for instruction while 39% of them rated it valuable and only 7% did not value the use of computers as a tool for teaching and learning.

HODs' evaluation of computer-integrated education

The results were analyzed and showed that very few, 31% of HODs rated computer integration good but the majority 69% did not understand the usefulness of integrating computers into teaching and learning various subjects. This was probably due to the fact that the respondents had not used computers in teaching and learning.

Training of Heads of department in the use of computers

The findings showed that 53% were trained in the use of computers but 47% had no training. The training lasted for three months while others took six months. They were given skills in computer literacy skills, and general

use of computer in office administration and secretarial work.

The importance of the training to HODs

The results showed varied responses. 50% of those who received training in computers rated the training very useful. Only a few rated the training useful while a small number did not appreciate the computer training they received.

Heads of department competency with use of computers in teaching and learning

Just more than half 52% of the heads of department felt competent enough to use computers in teaching and learning while 23% expressed the need for more training but 25% had no interest and did not respond to the question.

Factors affecting implementation of computer education by departments

The responses on this question suggested that successful utilization of computer integrated education is more likely to take place if computers are available and teachers are trained in their use. The analysis indicated that 73% of the participants regarded lack of training as one the most factor that affect use of computer in teaching and learning. But 60% noted lack of relevant computer materials and only 26% cited lack of time to implement computer integrated education in their school.

Heads of department attitude towards computer-integrated education

The responses were and showed that the majority of heads of department 85% had a positive attitude about the integration and use of computers in teaching and learning in their department. Only one percent of them expressed negative attitude, but a few of them were not sure about it.

8. CONCLUSION

This paper presented the research findings on the role of HODs and the particular academic leadership adopted within the department that were important in the implementation and use of computers by teachers in their departments. It was established that some HODs played the role of a planner, manager, facilitator, trainer, a guide and to advice teachers in the use of computers as well as participating in teaching and learning with computers. Further results indicated that some HODs had formulated policy for the use of computers, and created a workable environment with which teachers could integrate and use computers in teaching departmental subjects.



However, computers were only available in 25 schools and were mainly used to teach computer literacy skills. HODs reported many barriers to effective use of computers integrated education such as lack of enough computers and support materials, lack of time for planning, lack of trained staff, access to computers, inadequate physical facilities and technical support were all observed as major impediment to computer integration.

Moreover, most of the respondents were not adequately trained in the use of computers. 53% had limited computer skills while 47% were not trained hence 17% expressed fear concerning the use of computer applications in teaching and learning.

Finally, most of HODs expressed positive views and attitude towards computer-integrated education in their departments. It would therefore, be useful to provide more training for them so that they can become efficient and competent leaders in order to influence and increase the implementation of computer integrated education into departmental teaching. It is hoped however, that the above research findings in relevant sections will contribute towards the formulation of computer integrated education policy by all departments in secondary schools in Nyanza Province, Kenya.

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