

THE RELATIONSHIP BETWEEN HEADTEACHERS' LEVEL OF INTEGRATION OF COMPUTERS IN THE MANAGEMENT OF CURRICULUM IN SECONDARY SCHOOLS AND THEIR PERSONAL CHARACTERISTICS

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Abstract

The purpose of this study was to establish the relationship between headteachers' level of integration of computers in the management of curriculum in secondary schools and their personal characteristics in Nandi and Uasin Gishu counties of Kenya. The study employed the descriptive survey research design. A total of 63 headteachers' from 63 schools with functional ICTs were purposively selected. The data was collected by use of a questionnaire. Data was analysed by the use of Pearson Correlation and Multiple Regression Analysis. A significant relationship was found between the age of the headteacher, administrative experience and ICT training, and the level of integration of computers. Gender and academic qualification were found not to be significantly related to level of ICT intergration. It is hoped that the study will benefit education policy makers and headteachers in adopting effective ICT integration strategies in secondary schools

Key Words: Curriculum, ICT Integration, Personal Characteristics

1.0 Introduction

In the context of this study, Information Communication Technology (ICT) are considered as those tools, which allow digitalized information to be accessed, stored, manipulated and exchanged in order to enhance management, teaching and learning in schools. These include computer software and hardware, internet, landline and cellular telephones, wireless technologies, Digital Versatile Disks (DVDs) as well as older technologies such as radio, television, overhead projectors and Videotape Recorders (VCRs). This is well illustrated by Aduda and Ohaga (2004) who define ICTs as "all hardware, software and services that relate to information processing and handling, communication as well as all school practices that depend substantially on the above." The Government of Kenya is committed in incorporating ICT as a means of enhancing curriculum management in Kenyan Schools. The question that guides the study is whether ICTs sourced by the government and the other stakeholders are being used to enhance curriculum management in

schools. Muriithi (2005) observes that in the current secondary school curriculum, Computer Studies is a separate learning subject. Learners are being taught how to be computer literate and not how to use computers to enhance learning. Likewise the ICT training for teachers is focused on learning about computers rather than how to use the machines as tools for managing curriculum. This observation shows therefore that there is need for models that serve as examples of how ICTs can be used to promote learner-centred education, and the approach used should reflect a general movement away from “teaching computers” towards using ICTs as educational tools. It is for this reason that this study was conducted in order to establish the relationship between headteachers’ level of integration of computers in the management of curriculum in secondary schools and their personal characteristics in Nandi and Uasin Gishu counties of Kenya. The headteachers’ personal characteristics identified were age, gender, academic qualification, administrative experience, and computer training.

1.1 Objectives of the Study

The main objective of the objective of the study was:

To determine the relationship between headteachers’ level of integration of computers in the management of curriculum in secondary schools and their personal characteristics such as age, gender, academic qualification, administrative experience and mode of ICT training.

From the above main objective, the following hypotheses were generated:

HO₁: There is no significant relationship between the age of the headteachers and their frequency of use of computers to manage curriculum in secondary schools.

HO₂: There is no significant relationship between the gender of the headteachers and their frequency of use of computers to manage curriculum.

HO₃: There is no significant relationship between the academic qualifications of the headteachers and their frequency of use of computers to manage curriculum.

HO₄: There is no significant relationship between the administrative experience of the headteachers and their frequency of use of computers to manage curriculum.

HO₅: There is no significant relationship between the mode of ICT training of the headteachers and their frequency of use of computers to manage curriculum.

The alpha level at which the hypotheses were tested was 0.05.

2.0 Research Methodology

This study utilised the descriptive survey research design. This study targeted head teachers and teachers in secondary schools in Nandi and Uasin Gishu Counties of Rift Valley Province. These counties are composed of eight (8) districts. Using Education Management Information System (EMIS) data obtained at the Ministry of Education (MOE) headquarters, 63 schools with the most functional Information and Communication Technology (ICTs) systems in the two counties were purposively selected for the study. The target population was therefore the 63 headteachers of the schools with the most functional Information and Communication Technology (ICTs) systems. The study targeted only schools which had ICTs that were being used for curriculum management. All

the 63 headteachers were purposively sampled. The data collection instruments included a questionnaire and an interview schedule for the head teachers. The data was analysed by the use of inferential statistics (Pearson Product Moment Correlation and Multiple Regression Analysis) was then used to test whether relationships between respondents were statistically significant.

3.0 Results

The objective of this study was to determine the relationship between the level of integration of ICTs and certain personal characteristics. These characteristics included headteachers' age, gender, academic qualification, administrative experience and their ICT training. To establish the effect of these variables on the level of ICT integration, Pearson Product Moment Correlation and Multiple Regression was used to test whether relationships between variables was significant. The results of the study hypotheses are discussed below.

3.1 Hypothesis Testing

HO₁: There is no significant relationship between the age of the headteachers and their frequency of use of computers to manage curriculum in secondary schools.

The results of this test indicate that there is a significant relationship between the age of the headteachers and their frequency of use of computers to manage curriculum in their schools (Table 1.0). The Pearson Correlation was found to be .453 indicating a moderate correlation with a highly significant *p* value of value of 0.000. The researcher therefore rejected the hypothesis and concluded that there was sufficient evidence at 0.01 level of significance to suggest that there existed a positive correlation between age of the headteachers' and the level of integration of ICT in their schools. The positive correlation implies that as the age of the headteachers increased, the frequency of use of computers also increased. This finding is supported by Baylor (1985), who found that the increase in access and use of internet had been greater among respondents of 50-64 years. Perhaps the older headteachers have had a longer exposure to the use of computers in managing curriculum and therefore reflect a higher frequency of use than their younger counterparts.

HO₂: There is no significant relationship between the gender of the headteachers and their frequency of use of computers to manage curriculum.

The study as shown in Table 2.0 found that there is no significant relationship between the gender of the headteachers and their frequency of use of computers to manage curriculum ($r=.217;p=.105$). The null hypothesis that no relationship existed between the gender of users and their frequency of use of computers to manage curriculum was therefore rejected. The underlying assumption is that due to historical and cultural practice that put opportunities of the boy above those of the girl, it is always assumed that gender plays a role in opportunities offered by ICT. Contrary to this, however, this study suggests that female headteachers do not differ much in their level of their usage from their male counterparts. But even then, engendering ICT policy is an area of great importance in scoring the benefits of technology for female headteachers. Isaacs (2000)

asserts that if gender issues are not inculcated in ICT policy, it is unlikely that women will reap the benefits of the information age.

HO₃: There is no significant relationship between the academic qualifications of the headteachers and their frequency of use of computers to manage curriculum.

The results indicated a slight correlation between the headteachers' academic qualifications and their frequency of use of computers to manage curriculum (Table 3.0). The findings however indicate that there is no statistically significant relationship ($r=-.037$; $p=.784$) between the academic qualifications of the headteachers and their frequency of use of ICTs. The null hypothesis that there is no relationship between the academic qualifications of the headteachers and their frequency of use of computers was therefore not rejected. It is widely assumed that the more one advances academically, the higher their level of use of ICTs. It however emerges that high academic qualification among users does not always translate to a rise in the level of use of computers. Perhaps it's the specialised training in ICT that is required in order to elicit a heightened use of computers among users. This view is supported by Demetriadis & Barbas (2003) who found that academic qualification per se did not significantly influence the frequency of use of ICTs. Rather it is the training in the area of ICT integration that matters.

HO₄: There is no significant relationship between the administrative experience of the headteachers and their frequency of use of computers to manage curriculum.

The correlation results presented in Table 4.0 indicates that there is a significant relationship ($r=-.272$; $p=0.04$) between the length of service of the headteachers and their frequency of use of computers to manage curriculum in their school. The researcher therefore rejected the null hypothesis and concluded that there is sufficient evidence at 0.05 level of significance to suggest that a statistically significant relationship between the experience of the headteacher and the level of integration of ICT in their schools. This negative correlation implies that as the experience of the headteachers increased their frequency of use of computers decreased. The assumption was that more experienced headteachers used computers more frequently than those who are less experienced. This could point at the possibility of the fact that with time the users become complacent and end up losing interest in the use of ICTs. This observation is supported by Woodrow (1992) who found that lose of interest among users happens due to lack of exposure to constant training, a factor that shapes the attitude towards the use of ICTs by users. He asserts that any sustainable transformation in technological integration requires constant inculcation of positive attitude towards new technology. He adds that the development of ICT users' positive attitude towards ICT is a very significant factor not only for increasing and sustaining interest in computer integration but also avoiding users' resistance to ICT use.

HO₅: There is no significant relationship between the mode of ICT training of the headteachers and their frequency of use of computers to manage curriculum.

The results of this test as shown in Table 5.0 indicates that there is a significant relationship between the mode of the headteachers acquisition of ICT skills and their frequency of use of computers to manage curriculum in their schools. The Pearson Correlation was found to be .447 indicating a moderate correlation with a highly significant p value of 0.000. The researcher therefore rejected the null hypothesis and concluded that there is sufficient evidence at 0.01 level of significance to suggest that there exists a positive correlation between the mode of ICT training and the level of integration of ICT in their schools. The assumption of this hypothesis was that if users were exposed to the proper mode of training, they are likely to have competence and confidence in using computers for managing curriculum in their schools. This finding is supported by Al-Bataineh & Brooks (2003) who observed that headteachers must receive adequate ongoing ICT training in order to keep abreast with emerging technology. Pelgrum and Plomp(1993) also found a relationship between the type of ICT training and the extent of ICT use, that is, the amount of training received, correlated with the extent to which users integrated ICT into their curriculum management practices. Okebukola (1997) reiterates that “in the use ICT in secondary schools, the need for locally trained personnel to install, maintain and support these systems cannot be overemphasized”. In a survey carried out in Nigerian schools, he found that the low level of ICT integration in secondary schools was due to the acute shortage of trained teachers in application software, operating systems, network administration and maintenance of computer facilities. He says that those who are designated to use computers should receive adequate training.

3.2 Regression of headteachers characteristics and their Level of ICT Integration.

There were five independent variables in this objective-age, gender, academic qualification, administrative experience and ICT training. To determine the extent to which these variables could predict the headteachers’ level of computer integration in the management of curriculum; a multiple regression analysis was conducted against the dependent variable (level of use of computers). The analysis in Table 6.0 shows the results of the multiple regression analysis of the headteachers’ characteristics and frequency of use of computers. Findings show that out of five independent variables, two were found to significantly predict the headteachers’ frequency of use of computers with a moderate model fit of $R^2=.362$ implying that these variables predict 36.2% of the frequency of headteachers’ integration of computers. The significant predictors were age and mode of ICT training. This reinforces the previous finding that a significant relationship exists between age and mode of training of the respondents, and their frequency of use of computer to manage curriculum.

4.0 Conclusion

The study was conducted in order to establish the relationship between the headteachers’ level of integration of computers in the management of curriculum in secondary schools and their personal characteristics. It was established that characteristics of the headteachers such as age plays a role in the users’ interest in the use of ICTs. Length of service of headteachers in the teaching profession plays an important role in influencing the use of ICTs in schools. The number of years in a station affected the frequency of use computers by headteachers. Gender was not a significant factor that affected ICT integration as both sexes have equal capacity of using ICTs in Managing curriculum. The academic qualifications of users should not be used solely as an indicator for the level of users’

capacity for ICT integration into the curriculum as it easy not found to significantly influence integration. It was also concluded that if headteachers were exposed to the proper mode of training, they are likely to have competence and confidence in using computers for managing curriculum in their schools.

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Tables

Table 1.0: Age and use of Computers

Correlations

| | | Age of Headteacher | Use of Computer |
|-----|---------------------|--------------------|-----------------|
| Age | Pearson Correlation | 1 | .453** |
| | Sig. (2-tailed) | | .000 |
| | N | 57 | 57 |

Table 2.0: Gender of Headteachers and use of Computers

Correlations

| | | Gender of the H/T | Use of Computer |
|-------------------|---------------------|-------------------|-----------------|
| Gender of the H/T | Pearson Correlation | 1 | .217 |
| | Sig. (2-tailed) | | .105 |
| | N | 57 | 57 |

Table 3.0: Academic Qualifications and the Integration of Computers

Correlations

| | | Academic Qualification of H/T | Use of Computer |
|------------------------|---------------------|-------------------------------|-----------------|
| Academic Qualification | Pearson Correlation | 1 | -.037 |
| | Sig. (2-tailed) | | .784 |
| | N | 57 | 57 |

Table 4.0: Administrative Experience of Headteachers and Integration of Computers

| | | Use of Computer | Experience |
|------------|---------------------|-----------------|------------|
| Experience | Pearson Correlation | -.272* | 1 |
| | Sig. (2-tailed) | .040 | |
| | N | 57 | 57 |

Table 5.0: Mode of ICT Training and Integration of Computers

| Headteachers Characteristics | | Use of Computer | Mode of Training |
|------------------------------|---------------------|-----------------|------------------|
| Use of Computer | Pearson Correlation | 1 | .447** |
| | Sig. (2-tailed) | | .000 |
| | N | 57 | 57 |

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6.0: Headteachers characteristics and level of ICT integration

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .602 ^a | .362 | .300 | .66147 |

a. Predictors: (Constant), Age, Gender, Academic Qualifications, Experience, Mode of ICT Training,

Coefficients^a

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|------------------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -.083 | .604 | | -.138 | .891 |
| | Age | .544 | .175 | .374 | 3.098 | .003 |
| | Gender | .102 | .192 | .064 | .533 | .596 |
| | Academic Qualification | -.053 | .166 | -.044 | -.318 | .752 |
| | Experience | -.185 | .148 | -.174 | -1.256 | .215 |
| | Mode of ICT Training | .152 | .064 | .290 | 2.370 | .022 |

a. Dependent Variable: Frequency of Use of Computer to Manage curriculum