ADOPTATION AND INTEGRATION OF ICT IN TEACHING AND LEARNING IN SCHOOLS EDUCATION

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ABSTRACT

A number of studies have identified the school principal as a critical and pivotal person for establishing and maintaining learning environments driven by technology. This paper examines the function of school principals as institutional managers and the role they play in the adoption and integration of Information and Communication Technologies in the process of teaching and learning. It was conceptualized that presence of ICT integration plans, maintenance and renewal plans, extent of community access to ICTs and proficiency in ICTs of school managers have an influence on extent of ICT integration in teaching and learning . To obtain a detailed and clear picture of the use of ICT, the mixed methods approach was used. Semi directed interviews, focus group discussions audiotapes of discussions, videotaped classroom observations and photographs of school environments, review of school documents on ICT and teacher and student productions were used to collect data. Out of the ten schools studied, five schools had ICT integration and maintenance and renewal plans, while only two schools shared their computers with the community and eight head teachers reported that they had the ability to use ICT skills. From the findings, it appears the development of ICT skills and knowledge among school principals is slow and may explain the low levels of ICT integration in the selected schools. It seems the success or failure of integration of ICT in teaching and learning rests largely on institutional managers and school managers need to take professional responsibility and accountability to ensure that they are well trained in ICT and that their institutions have management strategies to enable them achieve appropriate ICT integration in teaching and learning.

INTRODUCTION

It is becoming increasingly apparent that all aspects of people's lives including the way education is taught and delivered are greatly influenced by developments in Information and Communication Technologies (ICTs). In an effort to keep up with these new developments, through its key ministries of Education, Science and Technology and Information and Communication Technology, has developed several policy and strategy documents to guide the integration of ICT in education. These efforts are also out of the realization that there are many initiatives being championed by various government agencies, private sector, non-government

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organizations and even individuals, that are not well coordinated, are disjointed, lack focus and sometimes duplicate each other. The e-content being developed for schools at primary and secondary levels is expected to increase access and improve the quality of education in the country. While this is a laudable initiative, the required penetration in schools both in breadth and depth is yet to be realized.

Among the various studies carried out to establish the status of ICT integration and the variables influencing it, some have focused on the role of the School Manager, in the adoption and use of ICT in education. Many scholars and policy makers seem to agree that School Principals as institutional managers have a key role to play in the facilitation of educational change especially in this decade when Information and Communication Technologies are increasingly finding application in teaching and learning. It appears that ICTs and especially the computer, has moved from being the object of study to a learning tool in the classroom and teachers are increasingly being expected to have basic ICT skills and able to apply them in their teaching. By playing an active role in the adoption of ICT as an educational tool, principals can create an environment that will benefit their teachers and students. They are also seen as curriculum and pedagogy leaders and are considered by stakeholders as central figures in leading processes for creating the conditions to teach and learn with ICT. From these arguments, it appears school leadership plays a key role in ICT integration in education. The competence of the School Manager in the use of ICT and a broad understanding of the technical, curricular, administrative, financial, and social dimensions of ICT use in education is important to the effectiveness and sustainability of ICT integration program.

In addition, access to electricity and internet connectivity, introduction of other technologies such as the mobile phone, Acquisition of a limited number of computers initially by schools for management purposes appears, to have created the conditions necessary to introduce, albeit gradually, integration of ICT in teaching and learning. It could be argued, therefore, that once management adopts ICT in its practices, it diffuses and spreads to other institutional members and they become interested in its use. As such, even without a plan or designed way of integration, some teachers with the inclination and interest in ICT end up finding innovative ways of using it to enhance their teaching capacities. Initially it may be used for recording and analyzing marks, typing lesson plans and eventually actual teaching and learning by searching for information and displaying learning content. Learners, equally, given the opportunity and access, are able to use ICT to enhance their learning.

This article is guided by four main objectives:

a) To identify the influence of ICT integration plans on ICT integration in teaching and learning.

b) To establish the influence of ICT maintenance and renewal plans on ICT integration in teaching and learning.

c) To assess the extent to which community access to ICTs influences the integration of ICTs in teaching and learning.

d) To examine how the proficiency in ICTs of school managers influences ICT integration in teaching and learning

LITERATURE REVIEW

This literature review looks at the theoretical underpinnings of ICT adoption and empirical findings on use of ICT by school managers. Information and Communication Technology (ICT) is pervasive within organizations. It is brought into organizations by people and is put to work by people. The ways in which technology is used and the purposes for which it is used, is a result of the decisions taken by members of the organization especially its leaders. It is essential, therefore, that managers have an understanding of the nature of new technology, the organizational needs and objectives. From an organizational context, several approaches to conceptualizing technology in general have been advanced. Burnes observes that the outcomes of technological change are socially chosen and negotiated within organizations by organizational actors. Pettigrew examined organizational politics and decision-making associated with the development and structuring of computer applications and found that managers are able to influence decisions in the computerization domain through taking up a 'gatekeeper' role, which allows them to shape the information reaching key managerial decision-makers. Political behavior associated with organizational and human resource issues arising out of technological change, demonstrates a range of choices available with respect to work organization and control of jobs. It appears, therefore, that the outcomes of technological change within organizations are dependent on the way workers respond, adapt and try to influence the outcome.

Most of the existing technology acceptance theories focus on the cognitive aspects of human beings, presuming that users must discard their affective selves to work efficiently and rationally with ICTs. Thus, technology acceptance models are restricted in their specified context, resulting in lack of generic applicability, especially on non-utilitarian or work-related systems. Unlike most preceding technologies which were thrust upon the user communities, ICT technology is individually available to diverse users who can use their own systems to serve their own purposes. The impetus for the innovation frequently grows from individual users of the technology, and as their communication and influence moves laterally through their contacts, a body of support can grow and exert "pressure" on the institutional administration to commit to adoption of the technology. There is, therefore, a high potential for a "bottom-up" or "grass roots" adoption process to succeed. From this argument, the importance of participation by school leaders in the adoption of ICT in teaching and learning processes in schools is important. .

The pace of change confronting organizations today has resulted in calls for more adaptive, flexible leadership. Adaptive leaders work more effectively in rapidly changing environments by helping to make sense of the challenges confronted by both leaders and followers and then appropriately responding to those challenges. In other words, such leaders are influential in approving or disapproving new ideas. Adaptive leaders work with their followers to generate creative solutions to complex problems, while also developing them to handle a broader range of leadership responsibilities.

CONCEPTUAL FRAMEWORK

From the literature review, certain actions that must be carried out by the school manager as part of providing leadership in the adoption and use of ICT in teaching and learning include creating teams to implement use of ICT, supporting professional development of teachers and harnessing resources required to install ICT infrastructure, It has also emerged from the literature that working with an ICT integration plan, having an ICT maintenance and renewal plan, having a policy on sharing ICT facilities with the school community and school leader's proficiency in the use of ICT are important factors in the ICT integration equation. It is envisaged that all these factors will have an influence on the extent to which a school integrates ICT in teaching and learning. These relationships are illustrated in Figure.

Conceptual Framework showing integration of ICT in teaching and learning

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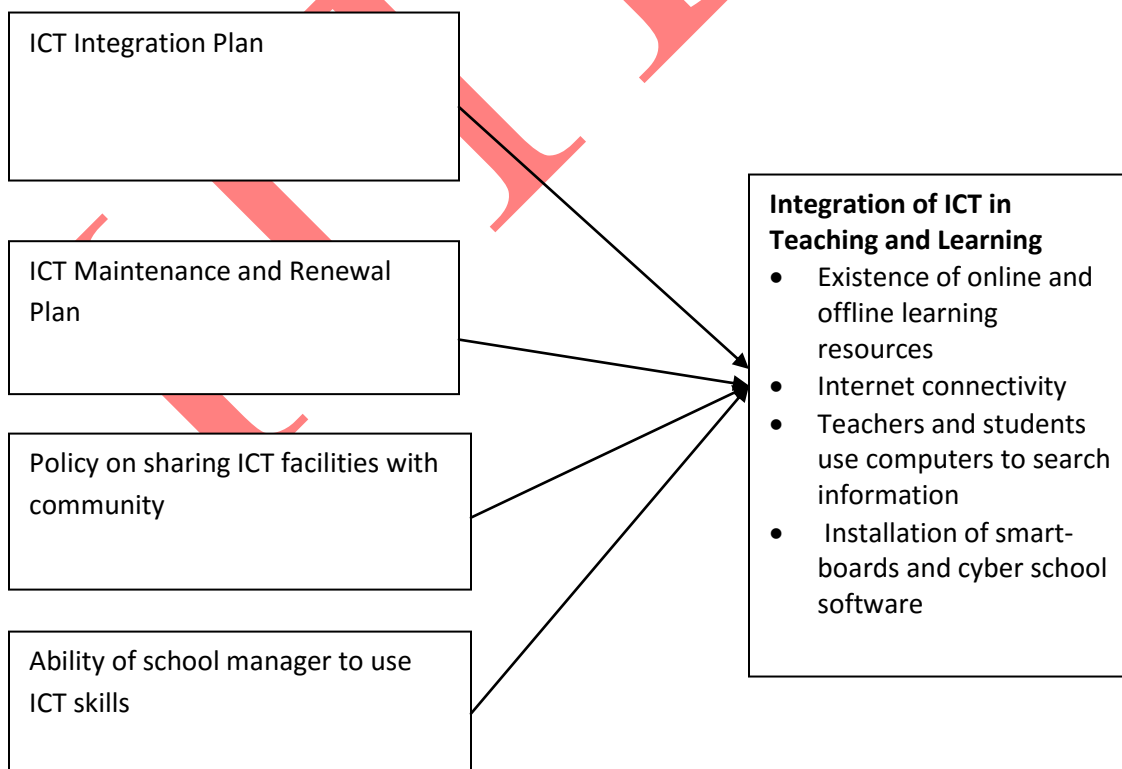
CONCLUSIONS

Although several encouraging results have been found, it is important to recognize that the current findings also have limitations. First, the sample size should be increased because using data from a larger number of respondents will permit more powerful findings. Given the self-reporting nature of this instrument, it was quite possible that principals overrated their proficiency or underrated their proficiency. These ratings may not reflect the true proficiency levels of the principals. In spite of these limitations, this study will be useful for policy makers, providers of professional development programs for principals and for system level decision makers to support mechanism and strategies to assist principals to develop their knowledge, skills and their leadership style. Thus, principals will understand the critical role that they play in facilitating the implementation of ICT in schools to improve teaching, learning and administrative processes.

It is also imperative that the Ministry of Education comes up with policies that will guide the use of ICT in schools. The government seems to be lagging behind because whereas computer studies has been introduced in secondary schools as part of the national curriculum, it has not kept up with the provision of the necessary infrastructure both physical and human resources. For example, there has been no teacher training course with computer studies as a teaching subject. ICT therefore seems to have been left to the ingenuity of the schools. This may explain the low levels of ICT integration among classroom teachers and the apparent advantage that schools with a manager who has ICT knowledge have. Private schools, however, are ahead in ICT use because they have control over their own resources. They also use ICT to maintain a competitive edge in the market because parents tend to associate the use of ICT with good academic performance. Since they operate on enterprise principles, they apply management tools such as strategic plans while public schools rarely develop such plans out of their own effort.

It appears, therefore, there is need for the Ministry of Education to develop an ICT policy to streamline this important area of learning. The ministry needs to provide ICT teachers to schools and reward those who have the skills and are offering services so as to motivate them. It might also help to include integration of ICT in teaching as part of the school manager's annual performance appraisal to encourage them to adopt ICT integration in teaching and learning. The success or failure of integration of ICT in teaching and learning rests largely on institutional managers. The managers have therefore a professional responsibility and accountability to ensure that they are well trained in ICT and that their institutions have management strategies to enable them achieves appropriate ICT integration in teaching and learning. At a time when information and communication technologies are being integrated into the classroom as learning tools, and

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when teachers are being asked to incorporate technology into their teaching practices, principals who are more competent in ICT are more likely to achieve success in their schools.

While this study focused only on the role of the school manager in ICT integration in teaching and learning, future studies need to pay attention to the impact of ICT in academic performance in situations where it has been adopted to enhance our understanding of the worthiness of technology use in education.

REFERENCES

- Anderson & Dexter, (2000). Anderson, R. E., & Dexter, S.L. (2000). School Technology Leadership: Incidence and Impact (Teaching, Learning, and Computing: 1998 National Survey Report 6). Irvine, CA: Center for Research on Information Technology and Organizations, University of California, Irvine.
- Bass, B.M. & Avolio, B. J. (2000). MLQ Multifactor Leadership Questionnaire (2 rd ed.). Redwood, CA: Mind Garden, Inc
- Bass, B.M. Avolio, B.J., Jung, D.I., & Berson, Y. (2003). Predicting Unit Performance by Assessing Transformational and Transactional Leadership. Journal of Applied Psychology, 88 (2), 207–218.
- Bennis, W. (1990). Why Leaders Can't Lead: The unconscious conspiracy continues. Francisco: Jossey-Bass.
- Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989), "User acceptance of computer Technology: A comparison of two theoretical models"
- Gronow, M. (2007) ICT Leadership in School Education , Australian Catholic University Conference , Catholic Education Leadership in the 21st Century" 29 July – 1 August 2007, the Sofitel Wentworth, Sydney. Available at: http://www.scribd.com/doc/11002583/ICT-Leadership-in-School-Education
- Keiyoro P. (2011) Relationship Between School Environment and Use of ICT in Teaching Science Curriculum in Nepad and Cyber e-Schools in Kenya, Journal of Continuing and Distance Education, Vol 1. Issue 2.