

THE ROLE OF ICT IN RETRAINING AGRICULTURE TEACHERS IN TEACHER TRAINING INSTITUTIONS OF ESWATINI

By: Dr Lungile B.Tsabedze

Dept of Agricultural Education

Faculty of Applied sciences

Ngwane teacher's college

Eswatini,

Corresponding Author - tsabedzelungile73@gmail.com

SUB THEME: ICT IN AGRICULTURE

In recent years teaching and learning of any subject is encouraging the use of ICT and adoption of improved technologies within the classroom and online both developed and developing countries. The evolution and development of ICTs has resulted in a paradigm shift in the educational system more especially in developing countries like Eswatini. ICTs are changing the way students learn, offering new alternatives to the traditional classroom. In this world of technology, it is essential for learners to have access to education anytime and anywhere. It is unrealistic and unaffordable to continue to ask learners to come to a designated place every time they have to engage in learning. The purpose of the study is to determine the role of ICTs in the retraining of agriculture teachers. A Sequential Exploratory Mixed Method employing both qualitative and quantitative data collection techniques were employed. The target population for the study were teacher educators teaching agriculture in three teacher training colleges primary schools (N= 15) Data were collected using a semi-structured interview guide analysis for qualitative data. Focus Group discussion was used to generate items for the survey questionnaire. The findings revealed that Learning becomes permanent in students because ICT enhances the presentation of information to learners. Learners learn at their own pace; They can learn according to their abilities in terms of time and rate of assimilation. Learner have different best time for learning; Individual learner like slow or fast learner with their learning style is taken care of by differentiation of learning afforded by multimedia. Lack of learning resources and large class sizes pose a challenge in the use ICTs in agriculture. The study concluded that most teachers lacked competence in the use of different tools of ICTs. Inadequate Infrastructure – Inadequate infrastructure such as unstable power supply, pose a great hindrance to effective use of ICT- facilities

The study recommended that empowering agriculture teachers with pertinent ICT skills and knowledge should be considered as an important issue, engaging various stake holders such as policy makers, researchers and practitioners in the field of teaching and learning.

Key words; *agriculture, competence ICTs,*

INTRODUCTION

ICTs allow the delivery of education to adapt to an individual needs as opposed to having the individual adapt to how the education is delivered. Education will not be confined to the four walls of a classroom but to wherever and whenever the learner deems appropriate.

“Education will not be a location anymore, but an activity: a teaching/learning activity” (Haddad and Draxler, 2012). ICTs have the capability of providing “personalized, just-in-time, up-to-date, and user-centred education activities” (Haddad and Draxler, 2012,) With the world moving rapidly into digital media and information the role of ICT in education is becoming more and more important. Information and Communication Technologies (ICTs) can play a number of roles in education such as developing the kind of graduates and citizens required in an information society. Improving educational outcomes enhancing and improving the quality of teaching and learners (Wagner, 2001; Mc Cormick and Scrim Shaw, 2001; Flecknoe, 2002).

The objectives and the purpose of the study

ICT in form of multimedia technology affords teacher educators and students a lot of opportunities for effective teaching-learning outcomes. These device if use in agricultural education instruction in teaching learning process is expected to boost the teaching and learning of agriculture in schools and teacher training institutions. The purpose of this study was to presents several roles of ICT in the teaching and learning of agriculture in teacher training institutions.

The objectives of the study

Determine the benefits of using ICTs in the teaching of agriculture in teacher training institutions

Determine challenges of using ICTs in the teaching of agriculture in teacher training institutions

Methodology

A sequential exploratory mixed method design guided the study. A sequential convergent mixed-methods design is an approach to inquiry that combines both qualitative and quantitative methods concurrently, prioritising both methods almost equally (Creswell & Clark, 2011), and Creswell, 2014). This means that the quantitative and qualitative methods complement each other, and provide for the triangulation of findings, hence greater validity of the emerging inferences. In quantitative research, researcher used Cross Sectional Survey Design to collect data at one point in time (Creswell, 2014). This study used semi-structured interview to collect data from teacher educators. The interview guide was appropriate for this study since it made the teacher educators to open up and provide adequate data for the study (Easwaramoorthy et al, 2006). The use of interview guide enabled the researcher to elicit detailed information on the role of ICTs in the teaching of agriculture in teacher training institutions in Eswatini. The interview was face to face and focused on the modes used by teachers, resources available for ICTs.

Data Analysis Procedures

The data collected were systematically categorized, quantitative data from questionnaires was analysed using the Statistical Package for Social Science (SPSS) version 21/23. Descriptive statistic generated in form of frequencies and percentages summarized quantitative data that was presented in tables. Qualitative data from interviews and document analysis guide were analysed using content analysis and organized into themes. Content analysis involved grouping topics into meaningful segments, coding and analysing them into categories. The researcher simultaneously combined categories into themes and presented narration of the benefits of ICT in the teaching of agriculture. The first research question was to determine the benefits of ICT in the teaching of agriculture in teacher training institutions.

The importance of ICT in education cannot be stressed enough. The introduction of technology in the educational field has made the process of learning and knowledge sharing a more interactive and pleasurable experience. (Manali Oak 2012). Current researches establish possible benefits of ICT in the advancement of agriculture. Learning becomes permanent in students; This is because ICT enhances the presentation of information to learners. Learners learn at their own pace; They can learn according to their abilities in terms of time and rate of assimilation. (Mcfarlane and Sakellariou, 2010) Learner have different best time for learning; Individual learner like slow or fast learner with their learning style is taken care of by differentiation of learning afforded by multimedia. Learner's specific needs are met; Thereby desisting from the "one size fits all" approach. (Leach, 2009). Learners are free from impatient teachers; This is because they have access to other forms of learning acquired via ICT. Learners can undertake learning actively and receive desired feedback. This is in agreement with the findings of Slaouti and Barton (2008) which reported that ICT can motivate students in their learning by bringing variety into the lessons and at the same time, sustaining teacher's own interest in teaching.

In general, ICT-Facilities make teaching and learning of agriculture effective. This is because ICT facilities help to arouse the interest of students in learning agriculture. Knowledge of computer technology improves teacher's methodology toward his/her dissemination of information.

The Challenges of Using ICT in Teaching And Learning Agricultural Education

Studies indicate that even though computers have come into post primary schools, the teachers and learners have not really been affected by their presence. (Yusuf 2005, Umeani 2006). It is discovered that the presence of these ICT gadgets like the computers are only seen in the computer pool where they are protected with dust infested covers. Otagburuagu and Eze(2006). Observed the high rate of computer illiteracy among teachers and learners as well as limited computer awareness. This and other constraints are summarized below as the challenges on the use of ICT-Facilities in teaching and learning of agriculture. Teachers lack skills of operating the computer. They in addition do not know what the computer technology provides to the world.

Inadequate ICT facilities and personnel. The problem is due to inadequate funding to procure and repair broken down computer and other ICT facilities (Agbulu and Ademu, 2015). Most teachers also lack skill of operating most of these ICT facilities. According to Watsons (2001) the success of education innovations depends largely in skills and knowledge of teachers.

Inadequate Infrastructure such as unstable power supply, pose a great hindrance to effective use of ICT- facilities (Kale et al., 2015. Include inadequate computers and the supporting technological infrastructure, low coordination of agricultural stakeholders. These finding were supported by Singh et al., (2014). The research conducted by Barackabitze et al (2015) has addressed a generally held view that in most developing countries, power and internet are epileptic and are parts of the major problem in using ICT.

Conclusion

In conclusion the roles of ICT in teaching and learning of agriculture in recent times has become an indispensable tool in educational development especially in the teaching and learning of agricultural. Although lack adequate ICT infrastructure couple with poor competence of teachers in the utilization of ICT facilities in the teaching and learning enterprise is not adequate. The success of these facilities among teachers and students are still inadequate.

Recommendations

The Ministry of Education and Training should establish ICT centres for accessibility all learners in all schools in the country and should make provision for the supply of ICT in teacher training institutions. Government and stakeholders should create a conducive environment in the rural areas where students in the rural areas can have access to ICT for learning. Teacher educators in our institutions should be trained and retraining in the use of ICT. Adequate infrastructure should be provided. The problem of power supply should be solved by government.

Reference

- Agu. M. N. (2013). Application of ICT in agricultural sector: Women's perspective. *International Journal of Soft Computing and Engineering*, 2(6), 58-60.
- Barakbitze. A.A.. Kitindi. E.J.. Sanga. C.. Shabani. A.. Philipu. .1. and Kibirigc. G., 2015. New technologies for disseminating and communicating agriculture knowledge and information (AKi): Challenges for Agricultural Research Institutes (ARI) in Tanzania. *the Electronic Journal of Information Systems in Developing Countries*. 70.
- Egunjobi, A. (2015). Teachers' and Learners' ICT-Readiness Assessment for Agricultural Science Instruction in Oyo State, Nigeria. *Research on Humanities and Social Science*, 5 (14), 121-129
- Giwa, A. A. (2011). Professionalism in Teaching Profession in Nigeria. Paper Delivered at the TRCN meeting Abuja October. 2011 .
- Kale. R.B., Rohilla, P.P.. Meena, M.S. and Wadkar. S.K.. 2015. Information and Communication Technologies for Agricultural Knowledge Management in India. *Journal of Global*
- Leach, J. (2009), Do New Information and Communication Technologies have a Role to Play in the Achievement of Education for all?
- McFarlane., A and Sakellarios, S. (2010). The Role of ICT in Science Education. *Cambridge Journal of Education*. 33(3) 30-45.
- Otagburuagu, E. J. & Eze, V.O. (2006). English language teaching in Nigerian Universities and the ICT revolution. In Ezech D. N. & Onyegebu N. (eds). *Information Communication Technology in the Science of education*. Enugu: Timex Singh. K. M.
- Kumar, A.. & Singh. R. K. P., 2015a. Role of Information and Communication Technologies in Indian Agriculture: An Overview. Available at SSRN2570710.