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Chronicling Factors Affecting Technology Integration in Accounting Classrooms: A Case of Secondary Schools in the Eastern Cape

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ABSTRACT There is general outcry about the lack of technology integration in Accounting classrooms. Accounting teachers lack appropriate knowledge, skills and expertise in technology. A qualitative approach was used to conduct the study. Sample of six Accounting educators was purposively selected in the study. Interviews were used to collect data from Accounting teachers. This study reveals that technology integration is hindered by a number of challenges in Accounting classrooms. The paper further revealed that most Accounting teachers are not ready for e-learning classrooms. Another finding is that, Accounting teachers need to be workshopped for technology integration. Therefore, the article recommends that Accounting educators needs to be supported in technology use in their teaching approaches. Furthermore, the study recommends that, Eastern Cape Department of Education should address challenges facing technology integration and come up with innovative directive measures to improve integration, issues of security and infrastructure by introducing direct policies which govern the use of technology across all subjects in its schools.

INTRODUCTION

Accounting curriculum is drastically affected by the increasing interaction with technology (Chukendu and Ezeani 2014). Killen (2017) reveals that Accounting teachers continue with traditional approach, irrespective of the influence in technology as a result learners are not performing well in topics like Companies, Close Corporation and Inventory Valuation which are technologically inclined. Kock (2014) opines that when technology is integrated, individual learners' needs are addressed and so is the promotion of equal learning opportunities.

Song (2010) indicates that, the teaching of Accounting needs technology integration not only as a tool of connecting to one another, instead a tool to support educational outcome as well as systematic tool to improve the searching in the subject. Song (2010) goes further in indicating that, once technology is integrated instead of the traditional method, learners tend to own their own learning by researching further on their own. Killen (2007) opines that, when teaching certain Accounting topics with technology, learners tend to develop independence in Accounting classrooms. This is so because the continuous use of traditional approach is limiting learners' performance who belong to the community and generation of the digitally informed. For accounting teachers to integrate technology, classrooms need to be transformed to e-learning spaces. Aldhafeeri and Khan (2016) concurs that, technology learning is systematic method of organising, designing, evaluating, and adoption of technology integration where education is taking place.

Therefore, a wide range of methods falls into technology learning, which ranges from learners using email to get teaching and learning materials from the technology use while studying a particular programs offered by the institution entirely digital. Farid (2014) opines positive technology usage allows both educators and students to increase their productive results in addressing the needs of the students and making education accessible to everyone. Therefore, technology e-learning readiness depends on the accessibility of organisational assessment of attitudes towards choosing the method of e learning to be use. Frimpon (2012) states that technology use in classroom can be been fully adopted in many educational settings. On the other hand, Tubaishat and Lansari (2011) indicate, any important technology step implemented in the classroom needs systematic strategies to be

considered for the sued of it before it can be adopted for classroom purposes. According to Kiilu and Muema (2012), ICT's have been identified as important powerful tool that can be used by many educational institutions to transform their production outcomes in improving global economies of the last century. However, for countries to implement ICT use, the country needs to be provided by technology resources so that it can be e-ready to adopt it. Hence, e-learning readiness is achieved by providing the necessary infrastructure and make it a point that the population of the country have access to ICTs. Njagi (2013) indicates that state, institutional organisations and scholars are supporting the idea that incorporating ICTs in education is a vital methods of keeping the curriculum relevant and preparing learners for life.

King (2017) states technology integration in Accounting class is seen as a powerful tool for transforming learning. When learners are learning with the use of technology, they become actively involved in their learning and this will assist Accounting teachers in their classrooms since learners will end up doing some other Accounting reading by themselves without being dependent on the teacher for information. Furthermore, technology use in Accounting classroom can aid affirm and improve relationships among Accounting teachers and learners to reinvent approaches to learning and collaboration. King (2017) further states when teachers use technology in Accounting classrooms, they become collaborators of learning, provide new knowledge and continuously acquiring news alongside their learners. King further indicates, one of the powerful innovative systems of technology integration in Accounting classroom is its ability to provide equal chances for learners (2017). King further indicates that, in Africa, the integration of technology in Accounting classrooms is still far behind since there are lot of challenges that needs to be attended to before it can be integrated. Achugbe (2012) concur this notion, when revealing that Africa state countries are hindered by similar problems when trying to integrating technology towards education especially in Accounting and physical science classrooms.

Hennessy et al. (2010) argue that, South Africa gazetted a policy on e-Education in 1996, outlining broad strategies for technology integration in education. This led teachers to continue with old traditional teaching approach since the strategies are just general not specifically dealing with each and every subject offered in schools. Hennessy et al. (2010) further state that even if South African government gazetted a policy in e-Education in 1996, educators were not capacitated for technology integration in their classrooms. Ekpenyong et al. (2012) opine that Accounting teachers are confronted with problem of being faced with low level of computer skills and understanding of worldwide technology influence and this led to failure of integrating technology in Accounting classrooms. Lau and Albion (2010) concur that in other African countries, Accounting teachers do have normal technological skills but they also need professional ICT training and relevant software to integrate it in their classrooms which could be costly. Hennessy et al. (2010) argue that Accounting teachers must be afforded adequate opportunity to participate in personal development programmes aiming to improve their technological knowledge and skills.

Apart from that, South Africa is at a different stage of technology integration in Accounting with rural schools struggling to get even the basic infrastructure and basic technology resources. Mathevula and Uwizeyimana (2014) found that lack of funds from schools is a major contributing reasons why Accounting educators lack proper knowledge of technology integration in classrooms. Once technology is accessible, Accounting educators could make full utilization of the technologies for their learners. In the Eastern Cape, technology integration in the classrooms is not taking place. Many schools in the province are not provided by technology resources. The majority of schools that were fortunate to be provided with technology resources had these technological devices stolen due to poor or lack of security (Daily Dispatch 2019). Furthermore, the Daily Dispatch reports that the schools that have resources are struggling with issues of maintaining their resources and keeping them abreast with the current global trends. Daily Dispatch (2019) further reveals both educators and students in secondary schools situated in largely rural area of Mqanduli near Mtata, had to travel long distances to

access necessities such as the technology resources like printers and internet. This shows the dire situation that the Eastern Cape province and its teachers are facing.

Purpose of the Study

- To ascertain educators' problems in technology integration in Accounting classrooms.
- To establish strategies of improving technology integration in Accounting classroom
- To examine readiness of Accounting educators for e-Learning Accounting classroom

Research Questions

- What are educators' challenges in technology integration in Accounting classrooms?
- What are the strategies to improve technology use in Accounting classrooms?
- To what extent does Accounting educators' are ready for e-Learning Accounting classroom?

Statement of Problem

For modern day students, one of the ways to innovatively improve the traditional approach of teaching Accounting is the incorporation of technology in day-to-day lessons (Fulton 2012). Fulton further states that this can be achieved either by using technology as a teaching aid in Accounting classroom or giving assignments which require learners to search information around Accounting subject using technology. Tatto (2007) argues that lack of emphasis in technology use in most teacher educational programs poses huge problem for teacher development and adequate learning. One of the big questions needs to be answered by Accounting teachers are: *"Is it a lack of technology resources provided to the schools or the lack of appropriate knowledge, skills and expertise in technology that led them not to integrate technology in Accounting classrooms?"* Based to the above mentioned statement this paper sought to examine challenges hindering technology integration in Accounting classroom in the Eastern Cape schools.

Theoretical Framework

The Technological Pedagogical Content Knowledge (TPACK) framework was used as theory that underpinned the study (Koehler and Mishra 2009). The framework builds on Shulman's (1987) Pedagogical Content Knowledge (PCK) notion which describes that a teacher ought to display pedagogical expertise to transform the education concepts into basis of teachable units.

This helps in building differentiated knowledge based-content notions, learners' already know knowledge, new innovative teaching methods, and the understanding that comes from exploring new ways of dealing with the same idea or problem in a different dimension. The TPACK theory suggests that teaching with technology is an important part since it brings interactions between the teacher and the learner. Bruce and Hogan (1998) claim that TPACK serves as the primary approach for positive teaching with technology, furthermore it requires a deep understanding of the concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content and knowledge. Bruce and Hogan (1998) further indicate that integrating knowledge of technology, pedagogy and content, experienced educators bring technology in their delivery of the content.

However, Koehler and Mishra (2009) split their TPACK framework into pieces and concepts like Content Knowledge (CK), Technological Content Knowledge (TCK); Technological Pedagogical Knowledge (TPK) as well as PCK. CK refers to the content that one possesses that they can share with the minors (learners); TCK is the technological knowledge that one can uses as a resource to deliver the CK to learners (minors) whereas TPK is the methods that one use to deliver the CK to the learners. Through it all, one need to have both the three components of the TPACK for successful teaching and learning to happen (Koehler and Mishra 2009).

METHODOLOGY

For this paper, qualitative research approach was used because a researcher tackles reality from a constructivist perspectives and that gives

the research a chance to allow for two or more meaning of individuals (Denzin and Lincoln 2005). Furthermore this approach was suitable in the fact that it yields a holistic overview of behavior which provides insights into emotions and motivations of the participants. The paper employed a case study design. Babbie (2007) state case study design involving of making decisions regarding what needs to be studied, amongst what type of population to be used, with what form of methods and for what purpose. In this design, data collection analysis focuses on one phenomenon regardless of the number of sites or participant for the study (McMillan and Schumarch 2006). For sampling purposes, three senior secondary schools from one district were selected and from the selected secondary schools two Accounting teachers per secondary school were purposively and conveniently selected. The six Accounting teachers were selected on their defining characteristics of being primary sources of information needed for the article (Maree 2015; Fox and Bayat 2007). They were labelled as Participant 1, 2 etc. For the purpose of this article data neede was collected with the aid of semi-structured interviews. These interviews allows participants a chance to express themselves openly, thus leading to collection of rich information (McMillan and Schumacher 2006).

Interview schedule was used in a flexible manner to allow for a probing where necessary as well in allowing for new forms of questions to be brought up during the interview based on the interview responses. Before conducting interviews the researchers got the permission from all gate keepers to do the study. All the issues of ethical considerations were attended to by the researchers. All the interviewees were made aware of aim of the research and constantly reminded about their rights and how their identities will be kept private. Trustworthiness were consistently checked. Here the researchers ensured that throughout the process of data collection there was no bias. Data were analysed using descriptively verbatim quotes verbatim from the themes that emerged.

RESULTS

Punch (2009) confirm that, data presentation is the process of displaying, organizing and assembling data collected from research interviewees. Thus, data can be displayed by individual participants' responses to issues, which are later arranged according to theme.

The following findings were based on research question 1 that was about the problems that Accounting educators experience in integrating ICT towards classrooms:

Challenges in Integrating Technology

Most of the participants confirmed that integrating ICT in their Accounting classroom was a big challenge. This is confirmed by the following responses:

Participant 1 added: *"In my school we have technology resources, but the big problem is that they are all damaged, and no one is bothering him/herself in requesting the school principal to repair them."*

Participants 2 indicated: *"In my respective school teachers do not have any form of technology resources provided so that they can integrate it in Accounting classroom."*

Participant 3 commented: *"In order to integrate technology in my Accounting classroom firstly the classroom needs to be renovated since electricity plugs and switches are all damaged."*

Participant 4: *"The biggest challenge in the school is the stealing of computers due to lack of 24 hour security in the school."*

Participant 5 reveals: *"Accounting classroom condition does not support any technology use."*

Participant 6 said: *"One of the challenges I am facing is the low level of technology understanding itself. I cannot integrate it since I don't know how to type even a letter in the computer."*

On the other hand, when participants were responding to research question 2 that was asking on the strategies needed to improve the Accounting teaching, this is what they said:

Strategies of Improving Technology Integration

All the participants confirmed that integrating technology to Accounting classroom is not only about supplying technology to schools. This is confirmed by the following responses:

Participant 1 said: *"Accounting classrooms need to be renovated so that all the time they*

are ready to be used for technology integration purposes. Electricity installations in all classrooms not only those of Accounting needs to be attended since our classrooms are damaged especially when it comes to electricity plugs".

Participant 2 added: *"All Accounting teachers need to attend technology integration workshop on a quarterly basis for at least two or three years. In these workshops teachers need to be encouraged to reflect on their practice and also encourage to voice out their challenges for planning purposes".*

Participant 3 stated: *"Accounting curriculum across all Grades need to have topics that are taught using technology and even learners when they are writing their examinations they need to write two papers which compose of theory and practical that is, calculations."*

Participant 4 commented: *"In order for Accounting teachers to integrate technology, time allocated to teach needs to be revised or Accounting curriculum needs to have a part that is delivered through the use of technology."*

Participant 5 said: *"School principals, head of departments and teachers need to develop a proper plan for each school on how school teachers make use of technology in their respective classrooms. Circuit managers need to monitor this plan and report to the district officials on how their schools are integrating technology in every two months."*

Participant 6 opined: *"I think the first strategy is to conduct workshops which aim to capacitate Accounting teachers with knowledge on how technology works. Once they master it, it is then that Accounting teachers can be shown how to make use of it in their classroom."*

The question on teachers readiness in e-learning was responded as follows:

Readiness of Accounting Teachers for e-Learning

Participants indicated that, Accounting educators were not fully capable to support technology integration towards Accounting classroom as a result they employ continuous use of traditional approach. This was confirmed by the responses below:

Participant 1 said: *"To be honest with you I am not ready to support e-learning Accounting classroom, since I am an old Accounting teacher. I am struggling to use technology for my personal use, for that reason I can start it even in the classroom."*

Participant 2 added: *"I am ready for e-learning Accounting classroom, since my understanding of the technology use is in the higher level because I am still new in the teaching of Accounting."*

Participant 3 and 4 said: *"We are not fully ready to support e-learning Accounting classroom, we need to be taken for short course focusing on technology use in the classroom."*

Participant 5 said: *"What is e-learning Accounting classroom? If it deals with the continuous use of technology in the classroom, I am not ready at all."*

Participant 6 added: *"Look I have been given the technology by the provincial department of education, but I don't know how to use it as a result I am leaving it at home. So in answering your question on how ready I am in supporting e-learning classroom, I can say I am totally not ready."*

DISCUSSION

Discussions are presented under the following themes: Challenges in integrating technology; Strategies of improving technology integration; Readiness of Accounting teachers for e-Learning.

Challenges in Integrating Technology

The findings revealed that schools are experiencing many problems in the successful adoption of technology integration which include: lack of technology resources provided, lack of internet access, damages in both classrooms and technologies provided to schools and inadequate security in schools. This assertion is supported by the ideas of Hennessy et al. (2010) that, one of the challenges in technology integration in Accounting classrooms is inadequate technology support in hardware and software in schools. Apart from that, the paper finds out that Accounting classrooms are not in good conditions to support technology use since elec-

tricity supply within the classroom is unstable. The findings are concurring with what Tubaishat and Lansari (2011) indicate, any important technology step implemented in the classroom needs systematic strategies to be considered for the sued of it before it can be adopted for classroom purposes.

This is so because even the findings by King (2007) add that, in Africa, integration of technology in Accounting classrooms is still far behind since there are lot of challenges that need to be attended to before it can be integrated. Achugbe (2012) also supported that majority of the Africa state are hindered by similar problems when integrating technology in their education system especially in Accounting and physical science classrooms. The findings are similar to what Hew and Brush (2007) attested that accessibility of technology usage is more than supplying of devices across all schools, but it is about supplying the right number and righty forms of computers.

Strategies of Improving Technology Integration

This study found out that before Accounting teachers could be allocated with technological gadgets, they were supposed to be capacitated first in order to improve their skills and expertise on how to use technology in general. After that, they were supposed to be works- hops on the usage of technology within the classes. Finding is exactly stating what. Hennessy et al. (2010) argue, Accounting teachers must be afforded adequate opportunity to participate in personal development programmes aiming to improve their technological knowledge and skills. The findings are similar to Bruce's study (1997) indicated that, Accounting educators need to be oriented enough in understanding which specific technologies are best suited for addressing subject-matter learning.

One of major finding of the paper reveals, Accounting curriculum is congested to a point that it does not accommodate any extra learning that can happen outside or beyond the classroom. These findings agree with Hennessy et al. (2010) opine sufficient allocated resources like time always possess big challenges to make use of technology across all subjects in schools. The paper goes further in revealing that, Accounting classrooms require serious renovations so that they can enhance and support technology use in learning, and time allocated to teach calculations needs to be looked at by limiting it in away of increasing time allocated for computer technology use. Above finding confirms what the TPACK theory suggests that teaching with technology is an important part since it brings interactions between the teacher and the learner (Koehler and Mishra 2006).

This study further finds out that time allocated to teach Accounting needs to be revised since their curriculum is congested and it is limiting ICT usage throughout education. The above finding are noted by Hennessy et al. (2010) opine lack of sufficient resources like time has always possess big challenges to make use of technology across all subjects in schools. These findings are totally contradicting with Peruski and Mishra (2004) ideas that, in order to successfully integrate technology in educational setting classrooms requires to be continually creating, maintaining, and re-establishing a dynamic equilibrium among all components.

Readiness of Accounting Teachers for e-Learning

Finding of this paper further state, despite the fact that Department of Education in the Eastern Cape issued technological devices to all teachers, Accounting teachers are not ready to support e-learning Accounting classrooms. The above finding confirms what Kuhn (1977) said that integrating technology in the classroom is one of the difficult things to do. Contrary to this, according to Farid (2014) opines positive technology e-learning readiness allows educational institutions to increase their results and production by addressing the needs of the students and making education accessible to everyone. Therefore, technology e-learning readiness depends on the accessibility of organisational assessment of attitudes towards choosing the method of e learning to be use.

These findings confirmed by the ideas of Ekpenyong et al. (2012) opine that Accounting teachers are confronted with problem of being faced with low level of computer skills and understanding of worldwide technology influence and this led to failure of integrating technology

in Accounting classrooms. But totally contrary to the ideas of Bruce (1997) that, Accounting educators need to master more than the subject matter they teach; they must also have a deep understanding of the manner in which the subject matter can be changed by the application of particular technologies.

Despite the notion that Accounting educators are supposed to be vigilant towards technology usage, findings from Tubaishat and Lansari (2011) indicate, any important technology step implemented in the classroom needs systematic strategies to be considered for the sued of it before it can be adopted for classroom purposes.

Despite the fact that majority Accounting teachers confirm that they are not ready for e-learning, one participant indicated that they are ready for e-learning. This finding revealing exactly ideas of Farid (2014) opines positive technology e-learning readiness allows educational institutions to increase their results and production by addressing the needs of the students and making education accessible to everyone. Therefore, technology e-learning readiness depends on the accessibility of organisational assessment of attitudes towards choosing the method of e learning to be use. These findings are closer to Bruce and Hogan (1998) that, integrating knowledge of technology, pedagogy and content, expert educators bring technology pedagogy content knowledge into play all the time.

CONCLUSION

Technology integration by teachers provides opportunity for learners to enhance their talent and become independent throughout the class. However, the successfully adoption of technology integration needs to be improved if both education officials and teachers want to provide quality education, and this is why it is good for educational institutions to know factors affecting integrating of technology in Accounting classrooms. Pedagogical content knowledge framework showed one needs both the three components of the technological pedagogical content knowledge framework, content knowledge, technological content knowledge and technological pedagogical knowledge for successful teaching and learning to happen. This study investigated factors affecting technology integration in Accounting classrooms in the Eastern Cape South Africa. This paper focused on high school challenges in integrating technology, strategies of improving technology integration, readiness of Accounting teachers for e-Learning. This study concludes that, if Accounting teachers are to integrate fully the information communication technology into their classroom, they need more than the hardware and the software as resources but they also need to have a good content knowledge, technology pedagogy knowledge, as well as technology content knowledge.

RECOMMENDATIONS

In a globalised knowledge economy, enabled by continuous influence of technological changes in every society, where technology integration in education is being examined by various scholars so that technology education can take place anytime, this study recommends that Accounting educators should be supported continuously to integrate technology throughout their teaching approaches.

All Accounting educators in South Africa should move away from the traditional approaches into a modern mode of teaching that fit into the Fourth Industrial Revolution (4IR) which the learners that they teach are responding well to. However, in order for Accounting teachers to achieve technology integration successfully, the study recommends that, Eastern Cape Department of Education (ECDoE) should address challenges facing technology integration and come up with innovative directive measures to improve integration by introducing direct policies which governs the use of technology across all subjects in schools. When Accounting classes get refurbished and resourced accordingly, it is the prerogative of the school, municipality that it is in as well as the provincial government to come up with better security personnel to safeguard the resources.

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