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Accounting Teachers' Voices on Factors Affecting Online Teaching during the 4th Industrial Revolution in the Face of COVID-19 in Selected High Schools in the Eastern Cape, South Africa

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Abstract

The most prominent debate in South Africa is how teachers will provide instruction online. The purposes of this article was to explore Accounting teachers' voices on factors affecting online teaching. To this end, the researchers employed a qualitative approach and a case study research design. Interviews were used as a method to collect data from 10 Accounting teachers who were purposively selected. Thematic data analysis was used. The results revealed that, Accounting teachers are lacking required knowledge and skills needed to facilitate technology learning in their classrooms. Results further reveal that, online teaching arrived at an awkward moment when teachers were faced with COVID-19 pandemic. The study concludes that teachers' voices play an important role in any proposed changes in the classroom. The Eastern Cape Province where the study was conducted should quickly roll out infrastructure at all schools aiming to support online classrooms. It is recommended in this paper that teachers need to be workshopped in online teaching in order for them to perform effectively.

Keywords: Teachers' voices; online teaching; teacher's readiness; 4th Industrial Revolution; connect policy; COVID-19

Introduction

Fourth Industrial Revolution (4IR) is centered on the application of digital technologies so that distinctions between the physical, digital and biological spaces are reduced (Mwapwele et al., 2019). Eberhard et al. (2019) asserted that among the central manifestations of the 4IR are job automation and an always-connected, converged world. Mwapwele et al. (2019) argue that for a country to achieve the benefits of the 4IR, emphasis needs to be placed on building citizens' optimism through providing access to, and the skills to operate, digital technologies, for instance, emphasis needs to be placed on building citizens' skills competencies in the use of technology. Gibson et al. (2018) confirm that, a country's technology policies guide the adoption and the use of technology by explicitly setting out what needs to be done to achieve national goals. Mwapwele et al. (2019) reveal that educational technology policy development and implementation aim to facilitate the sustainable adoption and application of technology so that it assists the country's education system through implementation by learners, teachers, parents, school managers and administrators. However, Rambe and Ngambi (2014) mention that learners and teachers in South African schools can expand their digital skills through the use of technology and social media platforms like Facebook, WhatsApp, twitter and Podcast.

Mwapwele et al. (2019) reveal that in South Africa there are policies aimed at boosting the adoption and use of technology, specifically in education. According to the Department of Communication (DoC) (2013), in South African there is a policy called "South Africa Connect" sometimes called Country's National Broadband Policy of 2013 which mandates the introduction of a broadband connection (with a download speed of at least 100Mbps) to every primary school and secondary school as part of an initiative to ensure the countrywide availability of broadband internet access by the year 2030. As for DoC (2013), the policy positions the enhancement of teachers' internet connectivity as necessary to support access to, and the use of, e-learning materials that can enhance learning in classrooms and foster the development of learners' digital skills. Botha et al. (2017) reveal that after the adoption of the South Africa Connect policy, companies have been encouraged to donate technologies in the education sector in order to assist teachers and to increase their technological knowledge and skills. Botha et al. (2017) further reveal that in provinces like Gauteng, Western Cape and some parts of the North West province in South Africa, teachers' benefited out of the policy called South Africa Connect. As a result, adoption of online teaching in the classroom is happening on a daily basis. Botha et al. (2017) went further that, in the Eastern Cape province of South Africa, schools have not benefited in the South Africa Connect policy, since online teaching has not implemented. Botha et al. further stated that education officials in the Eastern Cape made a promise that in 2013 online teaching will start across all schools. However, that promise has not been fulfilled. The researchers investigated the factors affecting online teaching in the province in order to close the gap between Eastern Cape Province and other province.

Research objectives

The article was guided by the following research objectives

- To examine strategies that were used to include accounting teachers' voices in the implementation of online teaching.

- To establish how online teaching assist the teaching of accounting to investigate why accounting teachers' voices are important in the implementation of online teaching.

Review of literature

Literature review is a critical, analytical account of the existing research on a part (Maree 2015). Online teaching can be academically successful and personally, life changing when created fostered, and sustained by all involved (Skhephe et al., 2020). In this article literature on teacher's voices on factors, affecting online teaching during the 4th Industrial Revolution has been reviewed under the separate sub-headings.

External factors affecting online teaching

Ertmer et al. (2012) reveal that external barriers must be addressed at the school level and changes are typically incremental. Ertmer et al. further reveal that the external factors affecting technology adoption and implementation are access, training and support. In addition, in countries like United States, there is growing evidence that, first-order barriers are being tackled. However, when it comes to South Africa more effort is needed to entirely overcome these challenges (Botha et al., 2017).

Access

Early accounts of technology adoption focused much on increasing the availability of computers in schools (Fisher et al., 2018). Certainly, the most basic step towards effective technology adoption is widespread access to equipment necessary to run educational computer programs. If computer-lab-time is limited to one hour per week, persistent use of educational technology is not viable. While many schools across the country are making the transition to one-to-one (1:1) computing (Warschauer et al., 2014), many teachers do not have regular and reliable access to a computer. Inconsistent computer access makes it extremely difficult for instructors to adopt technology into existing lesson plans. Routine access to hardware, that is, laptops or tablets, software for example, reading and writing software, internet browsers, and internet connection is a fundamental requirement.

Training

Ertmer et al. (2012) state that the most commonly cited reason for lack of technology implementation in the classroom is inadequate professional development and training. The National Education Association (NEA) includes expanding professional development in technology as one of their policy recommendations (NEA, 2008). According to NEA (2008) results, teachers today report increasing confidence using classroom technology, operating software, and searching the internet, but given that technology is constantly changing, it is more important than ever that teachers stay up-to-date with their technological expertise. Even if a school district were to hire only teachers who were literate in current classroom technology, countless new technologies will be developed during their teaching careers, and they will need to undergo additional training to keep their skills current. Without the necessary resources to provide continuous technological training, schools and districts will continue to cite inadequate professional development as a major barrier to technology implementation. To

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realize effective technology integration, school administrators should seek assistance to identify and provide ongoing training.

Support

Although we cannot be certain about how the future will influence professional development, it is clear that the teachers of today do not have optimal access to technological support. According to statistics reported by the U. S. Department of Education (2010), 68% of school districts reported having adequate support for educational technology. While it is encouraging to see that the majority of responding districts feel that they have access to adequate support, there is room for improvement. With additional technology support, teachers can worry less about technological barriers and instead focus on teaching their students. Adopting a new educational technology can be a time-consuming process. If a technology is adopted school-wide, teachers should have access to extended support from trained professionals, as opposed to a single hour-long meeting before the school day begins. Of course, this will most likely require additional funding for schools, but creators of educational technologies should also place increased emphasis on user support. With high quality support from both creators of educational technologies and school employees, teachers will have access to the resources they deserve.

Internal factors affecting online teaching

Teachers' attitudes and beliefs are crucial factors in determining the role and effectiveness of technology in classrooms. Attitudes and beliefs about both educational technology and pedagogy in general will ultimately influence how teachers implement technology. Now that technology is being widely used in schools, perhaps the most important question is how to best implement technology, rather than whether technology will be used (Ertmer et al., 2012). Given the abundance of available educational technology, it is essential that teachers feel comfortable and confident about their ability to use them effectively. Many current teachers grew up without access to technologies like the personal computer and the internet, but students today are raised in an environment saturated by computer technology. These "digital natives" can intimidate teachers, especially those with little technological experience. If teachers feel that they do not have the necessary competencies when using technology, they may feel less in control of the class, use less technology, and be unlikely to explore new possibilities that utilize technology when designing their classes (Hughes, 2005). By sticking to traditional teaching methods, teachers who are less fluent with technology maintain a feeling of control in the classroom and will not have to be prepared to face the challenges of instructing digital natives in a digital environment.

Benefits of online teaching

Since the world of 4IR is characterized by the rapid processing of information, the domain of education has no choice but to embark on it (Sangrà et al., 2012). Sangrà et al (2012) further observe that, advantages associated with technology use include the ability to quickly deliver learning, anywhere and at any time. Smythe (2012) argue that, when technology is used optimally, it can facilitate blended learning, that is, the use of multiple platforms to convey information. Alajmi (2013) opine that, worldwide, all societies are working towards changing to

become e-learning communities. Alajma (2013) further reveal that through technology uses, learners may develop the potential skills, knowledge and expertise to unlock the ever-changing world and become game-changers in society. Kiilu and Muema (2012) confirmed that through the use of a technology, talent may be developed which will allow learners to access the global economy and improve their lives. Kiilu and Muema (2012) observe that, once learners learn by means of technology they become more creative, motivated and eager to test their boundaries. Kiilu and Muema (2012) further reveal that, many learners can even go on to become designers of technology, which allows them to contribute to the production and productivity of their country. Keramati et al. (2011) argue that, in many developed countries, many technological gains and advances are associated with the innovative technologies being used and these gains are the result of implementation of e-learning in the education system at an early stage.

South Africa Connect Policy and its implication in education

The South Africa connect policy was published in 2013 by the Department of Communications (DoC) and is currently driven by the newly created in mid-2019 (DoC, 2013). The Department of Communications and Digital Technologies (DCDT) advocates for a digital society characterized by widespread ICT knowledge and use for individuals, communities, organizations, and the society as a whole (DoC, 2013). Digital education modalities, through innovations such as the internet, tablets, digital academic content embedded in applications on tablets, and mobile services, are positioned as offering hope to the nation towards attaining improved economic and social development though digital education (DoC, 2013). Operationalizing the policy must include the assessment of both innovations that are currently in use and those that are intended for diffusion and adoption.

Theoretical framework

Several models have emerged out of research pertaining to user acceptance and intention to use new technology (Liebenberg et al., 2018). This study is guided by Unified theory of acceptance and use of technology (UTAUT) which was propounded by Lai in 2017. Venkatesh et al. (2003) reveal that UTAUT has four core constructs which are performance expectancy, effort expectancy, social influence and facilitating conditions. These four are direct determinants of behavioral intention and ultimately behavior, and that these constructs are in turn moderated by gender, age, experience, and voluntariness of use. As for UTAUT, performance expectancy is when an individual believes that using the system will help him or her to attain gains in job performance. Social Influence is the degree to which an individual perceives he or she should use the new system. Facilitating conditions is when an individual believes that an organizational and technical infrastructure exists to support use of the system. As for effort expectancy, gender and age are expected to moderate the relationship between effort expectancy and Intention to Use. Lai (2017) argues that in order to adopt the use of technology, self-belief and confidence play an important part. Lai further argue that when it comes to the use of technology, confidence and positive attitudes lead to informed decisions, and ultimately generate good behavior. With advanced and dynamic growth of technologies, the manner in which the consumers are accepting these technologies depends on factors that include convenience, consumers' need, security and the like.

Data and Method

Research Approach

In this article, a qualitative research approach was used to define, recognize, and understand the human phenomenon, relationship, and discourse. Creswell (2014) contends that qualitative research is most useful in answering questions regarding what, why and how certain events occur. This approach was chosen since it enables deeper understanding of experiences, phenomena, and context and it allows the researcher to ask questions that cannot be easily put into numbers to understand human experience.

Research Design

A case study design was applied. According to Creswell (2014), exploring the qualitative design in which the in-depth of program, process, activity, and individuals is referred to as a case study. A case study is an in-depth examination of one example of a set phenomenon. It is designed to illustrate a general principle using a specific instance

Sample

The sample consisted of 10 accounting teachers. Participants were purposively selected based on being accounting teachers who are expected to make use of online teaching in Eastern Cape Province, South Africa.

Data Collection Instrument

Interviews were used as the instrument for collecting data from the participants, and semi structured interviews were preferred to other types of interviews. The participants were interviewed on their opinions about the factors affecting online teaching in the 4IR

Data Analysis

The interviews were analyzed using themes drawn from the research questions. As already indicated that the interviews were recorded, the first step in data analysis was to transcribe the data from the recorder. This helped the authors to have a deep connection with the data. Written transcriptions were compiled and first-hand information from the participants helped the researcher to interpret the data.

Data Trustworthiness

Trustworthiness refers to how qualitative data is stable, predictable, dependable, consistent, and reliable, thus producing the same results or out-comes in the future as they had in the past. Trust-worthiness refers to findings that are worth paying attention to and the study adhered to the four characteristics of qualitative research which Creswell (2013) stated as dependability, confirmability, verification, and transferability.

Ethical procedures

The researchers observed all ethical procedures before and during the study. Ethical clearance was received from the researcher's' institution. The researchers were permitted by the Eastern Cape Education District to assess schools and interview participants. The gatekeepers were

employed to gain access to the research sites and the participants. The selected participants were assured that the information was only for research purposes. The issues of informed consent and confidentiality were adhered to.

Results

One of the question that was asked to accounting teachers was "What strategies were used to include Accounting teachers' voices in the implementation of online teaching?" When responding to this question, it was clear that no proper consultation was done to bring in teachers' voices. The sub-theme/category below has been identified in this question

Accounting teachers' voices were not considered in the implementation of online teaching

The results indicated that despite technologies given to Accounting teachers to implement online teaching, lack of consultation has affected online teaching. The following were the responses from the participants.

> T1: To be honest with you, teacher's voices were not considered before the implementation of online teaching as result in my case I am still using the old method, despite having a laptop and the learners have tablet provided by the [*Eastern Cape Department of*] education. I think it was going to be better if there was a workshop first, on how we can make use of the technologies in teaching and learning.
>
> T2: As far as I know, there is absolutely nothing was done to include teachers' voices on how online teaching can be implemented. [*Due to that extent*] the internet that is being loaded into our laptops and even to the tablets that are given to the learners is not being used on educational issues as it is expected. All these things are the results of not being trained on how to use these technologies by the managers.
>
> T4: There was absolutely nothing, maybe it is the fact that we are all new in the use of online teaching, at the same time, there is this issue of pandemic that is making things to be very difficult to everyone.
>
> T6: There was nothing done to make us voice our own opinions as far as this initiative is concerned and also nothing was done to make us ready for the online teaching even if were are expected to implement online teaching. I am talking about the support structure given to us so that we can be successful in the use of online teaching since it is something new to us.
>
> T10: Who are we to be consulted when there are changes to be implemented? My friend in the rural province like Eastern Cape. We always hear about the consultation of teachers in provinces like Gauteng and Western Cape and we get to know through watching news in the television.

Another question that was asked to accounting teachers was "how can online teaching assist the teaching of Accounting?" They indicated that online teaching can assist in various ways, namely but not limited to, independent classroom, enjoyable classroom, self-discovery learning and learner participation can improve. In this question, the following sub-theme/category has been identified.

Online teaching changes accounting classroom

> T1: I am of the view that it can bring changes in the classroom since accounting learners will be motivated to learn without being forced to learn as it is the case at the moment.
>
> T3: Online teaching takes place anytime anywhere, lesson can be recorded and recording can be shared to the learners in order to listen into the recording later, which means learning can haven even after the classroom.
>
> T5: Lesson can be videotaped and the video be played in the classroom and questions can be asked into the video.
>
> T6: If online teaching is implemented across all schools, teachers can share their lessons so that underperforming school in the subject can be in a position to learn how performing schools in the subject doing.
>
> T9: Through online teaching teachers can develop teams where they prepare together for their classrooms while they are at their homes or schools, so that learners can learn one lesson across all schools. Apart from that learners' discussion forums can be formed so that learners are able to interact with one another and discuss all issues related to their studies with the use of data and tablets provided to them by the education.
>
> T10: I believe that online teaching can assist different ways. E.g. it can promote a self-discovery learning approach and completion in the classroom. Remember you cannot separate teaching of accounting with technology since current information about accounting is available in the internet. Lastly, in the 4IR learners are more expose in the use of technology.

The last question that was asked was "why Accounting teacher's voices are important in the implementation of online teaching? When the teachers were responding to this question it was clear where the starting point should be to implementation online teaching. The sub-themes/categories below have been identified in this question.

Provide teachers with the chance to voice their views about the change to be made in the classroom

> T2: It is very important since it is how Accounting teachers were going to get platform to voice their views on what needs to be done first in preparation for online teaching.
>
> T3: If there was a proper consultation, we were going to know why online teaching is important in our life time and how can we facilitate it. Again, Accounting teachers were going to be trained on time on how to integrate technology to the classroom since it is something new to most of us.
>
> T5: Proper discussion forum were going to assist all of us in laying a solid foundation on what are the things that needs to be iron out first before we are expected to implement online teaching.

T8: If you want any teacher to support changes in education make sure that you bring teachers when developing those changes or else they will not own the propose change. Just like now I don't think there is a teacher implementation online learning since we have less knowledge on how to implement it.

T10: My answer to your question is simple you want to make teachers to be ready for the change, participate in the process of making change and finally to own the change.

T7: If Accounting teachers were involved, they were going to participate in the discussion of how to implement online teaching. Now this was going to make them to own and support the implementation of online teaching

T9: It is very crucial and through collaborative engagement teachers, some teachers were going to enroll for computer short courses in an attempt to make us ready for the online teaching.

Discussion

Accounting teachers' voices were not considered in the implementation of online teaching

These findings are in line with Ertmer et al. (2012) that there are barriers to the successful adoption of online teaching in South African classrooms. Ertmer et al. (2012) further observe that these factors are external and internal and they need to be addressed before educational authorities can start rolling out online teaching in the classroom since they negatively hinder the smooth running of the process. Furthermore, some of these barriers must be addressed at the leadership level and changes are typically incremental. These findings support Carl (2017) that there should be a chance for teachers' voices to be considered prior to the start of implementing any changes in educational classroom– or else, they should be given a chance to make an input during the initial stage of the proposed change. Lai (2017) argues that with the advanced and dynamic growth of technologies, the manner in which the consumers are accepting these technologies depends on factors that include convenience, consumers' needs, their inclusion when the new technology was introduced, security and the like. Furthermore, when the consumers are not prepared enough to make use of the technology they are likely to experience challenges along the way

Online teaching changes accounting classroom

These findings are clearly stating what Li and Lalani (2020) mentioned that there are benefits in the online classroom if implemented in their correct way such as reaching large audience at the comfort of their home, effective communication with their learners through chat groups, video meetings, voting, and sharing documents and to be at par with advanced countries. The findings corroborate with Beetham and Sharpe (2017) that online classroom provide learning environments which include a chatroom, an online discussion forum, daily reminders, and online assessments with clear instructions which outline what learners need to do when completing (and subsequently submitting) such assessments. Through various platforms, teachers (not only those who teach Accounting as a subject) are able to track their learners' activities in the VLE, in addition to being in a position to access and display syllabus-related

information (Beetham & Sharpe, 2007). Lai (2017) reveal that when UTAUT is operational and functioning optimally, learning becomes more enjoyable, talents are developed and learners work at their own pace and in their own time, without being forced to learn. Lai's theory further reveal that learning not only happens on an individual basis, but also through peer-to-peer interaction and in groups who make use of the internet.

Provide teachers with the chance to voice their views about the change to be made in the classroom

The findings above supporting Carl (2017) that when it comes to the changes to be made in the classroom the most important person to talk to is the teacher. Carl further observe that with their knowledge, experiences and competencies, teachers are central to any changes in the classroom. Better teachers support better learning because they are most knowledgeable about the practice of teaching and are responsible for introducing innovations in the classroom. Handler (2016) also found that there is a need for teacher involvement in the development of curriculum and technologies to be used in the classroom. Handler added that, teachers can contribute by collaboratively and effectively working with any educational specialists to arrange and compose online martial, textbooks, and content. Fullan (2016) reveal that teacher's involvement in the process of change development is important to align content of change with learners needs in the classroom. Johnson (2017) argue that when the teachers' voices are considered they will be delegated a task to do while educational specialist are doing another part within the propose changes. Johnson (2017) went further that when another party has already developed its own task, the teachers have to make an effort to know and understand it the task developed by another group. Therefore, teachers should be involved in any development. Ramparsed (2016) states that teacher's opinions and ideas should be incorporated into the development of classroom change. Hence, teacher involvement is important for successful and meaningful classroom changes. Teachers being the implementers are part of the last stage of the change development process.

Implications for Policy and Practice

This article showed that Accounting teachers are not obstacles towards implementation of online teaching in South African schools. However, obstacles to online teaching is a lack of proper consultation that led to teacher's unwilling attitude to incorporate online teaching in their teaching method and the lack of appropriate knowledge and skills of online teaching. Therefore, teachers should develop their own operational plans, guidelines, indicators and strategies for online teaching based on the provincial operational plans. In addition, ICT directors should work with relevant stakeholders to refine and implement draft policies that are available in the Eastern Cape Province to ensure the availability of discussion forum for teachers to voice their views around online time.

Conclusion

The study explored Accounting teachers' voices on the use of online teaching in selected high schools in the Eastern Cape in South Africa. Teachers in the selected high schools where samples were hand-picked are still very far behind when it comes to the implementation of online teaching as some of them are teaching in the poverty stricken areas. There is still a lot

to be done especially in the schools that are based in rural areas, townships and semi-urban areas. There is absolutely no doubt that the arrival of COVID-19 pandemic negatively disturbed teaching and learning since majority of the learners in these schools are from poor backgrounds which makes them not to have access to technologies and internet needed to facilitate online classroom.

Limitations of the Study

This article has some limitations that were considered when interpreting its findings. Firstly, this study is limited to high school Accounting teachers in the Eastern Cape Province, South Africa. Secondly, this study adopted a qualitative approach that included Accounting teachers with interviews to establish a baseline of teachers' implementation of online teaching. However, the research could have more validity if this article adopted mixed methods of quantitative approach to reveal the online teaching implementation in high schools and teachers in the Eastern Cape, South Africa.

Recommendations

The study recommends that education authorities should not see online teaching as a new normal, and teachers must be workshopped in online teaching so that the new paradigm in education can be implemented successfully. All teachers need to take personal initiative of developing themselves in the technology. The Eastern Cape Department of Basic Education should quickly roll out infrastructure to all schools aiming to support online learning. Learners and parents should demand technology use in the classroom as it is in line with the goals of the South Africa Connect Policy. Teachers' voice s need to be considered by education officials in all areas of proposed changes especially on online teaching as it is something new to all teachers especially those who are in rural areas.

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