Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 7, July 2021: 9382 - 9390

Research Article

Integration of ICT in Teaching and Learning: Educators and Parents Resistance to Change

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Abstract

Fourth industrial revolution advocates for the proper manipulation of ICT (Information and Communication Technology). This statement simply implies that, without basic knowledge of ICT life nowadays will be a living hell. Banks have discontinued cheque transactions and adopted electronic banking, virtual meeting in most Government offices are the order of the day. It is not surprising to observe that all individuals own ICT gadgets in the form of laptops, cell-phones and tablets, all these gadgets are like ICT in 'motion.' Old people like to say 'I was born before technology', this is the disappointing and despairing one, which they use to justify their ignorance and lack of interest. Such people will get it hard to survive the fourth industrial revolution. This revolution will affect jobs in all sectors, but in phases and to different degrees. Africa is not going to become automated suddenly, but the coming global impact of 4IR makes more urgent the economic transformation SSA already needs in order to maximise its advantages and realise its potential (Brown, 2020: 1). Fourth industrial revolution dictates that even in schools, traditional chalkboard and duster is outdated and is replaced by ICT kind of teaching, thus ICT has infiltrated our teaching and learning to a level where all teachers are obliged to 'shape up or ship out', and parents as well are obligated to support and encourage their children to boldly walk the ICT path. The main problem that prompted us to initiate and move this study is the ignorance, lack of interest and negative attitude that most educators have developed to distance themselves from all ICT empowering activities that will enable them to participate in ICT teaching and learning. This uncalled for kind of behaviour grossly disadvantage learner's abilities and can cause major learning barriers. Nowadays learners learn best when ICT is integrated with their studies. Coleman, Gibson, Cotten, Howell-Moroney and Stringer (2016) contend that the appropriate use of ICT in teaching transforms the learning environment from teacher-centred to learner-centred. How often have you seen educators requesting learners to connect the projector cable to the lab top? Educators asking learners to help connect them to group chat, video call or zoom? Learners are adjusted to use ICT and will learn best if they are taught the ICT way.

Keywords: *Information and Communication Technology, gadgets, technology acceptance model, forth industrial revolution*

Introduction

Information Communication Technology (ICT) is the modern kind of communication which involves the use of easy fast and user-friendly technology often used in modern societies. In the beginning, information was conveyed through letters which were improved to landline telephones. Landline telephones were improved to cell phones which were considered more convenient and reliable because they are reduced personal mobile gadgets. Today, however the most convenient easy fast, most reliable and confidential means of IT communication is the e-mail. Fu (2013:112) says that: "Information and Communication Technology (ICT) includes computers, the Internet, and electronic

delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field."

Department of Education (DoE) is therefore faced with a mammoth of a task, to train ICT illiterate educators to cope with ever dynamic world of technology. Today's world is a world of information explosion. This information explosion is taking place in such a fast speed that even a literate person is feeling as if he or she is illiterate being not able to cope up with such an information explosion.

This information explosion is obliging educators to always be on their toes; to be sources of information technology and avoid recurrence of embarrassment in the ICT teaching and learning situation. Teachers on all levels from an elementary school to high school (and the equivalents of those levels among countries with different nomenclature) need to be comfortable with ICT and to empower their students to use ICT themselves and to learn from it. ICT knowledge is necessary at all educational levels for teachers and students, regardless of subjects taught and degrees obtained. (Chen, Castillo, Gabriel and Ligon, 2015:28). ICT is here to stay, thus our obligation is to embrace it and toe the line as educators and parents.

Technology Acceptance Model (TAM)

Numerous theoretical models have been developed to investigate users' acceptance of new technologies. The most widely researched model on user acceptance that investigates why a user chooses to use or not to use technology is the Technology Acceptance Model (Nair & Das, 2011; Tarhini et al., 2015; Teo, 2011). Technology acceptance model is the most befitting model for the study. Our study is determined to encourage our professional institutions, educators, parents and learners to be technology literate in order to cope well with the forth industrial revolution. Rodney-Wellington (2014:75) ascertains that:

For an individual, being information literate is imperative in order to be a functional member of the society. Therefore, a government is expected to integrate the knowledge of Information Literacy into academic programmes so as to make people become more productive and equipped as functional global citizens of the 21st century.

Davis (1993) who is perceived and considered the father of technology acceptance model, hypothesized that one's attitude toward using technology is a function of two beliefs: perceived ease of use and perceived usefulness. Perceived ease of use is the degree to which a person believes that using the system would require minimal effort, whereas perceived usefulness is the extent to which the information system enhances job performance.

The diagrammatic representation, the theory of reasoned action in figure 1 invented by Davis, was successfully presented by Durodolu (2016:12). The diagrammatic representation is the one that convinced almost all scholars that indeed the (TAM) is the most appropriate and reliable model to persuade professionals and non-professionals to toe the line.

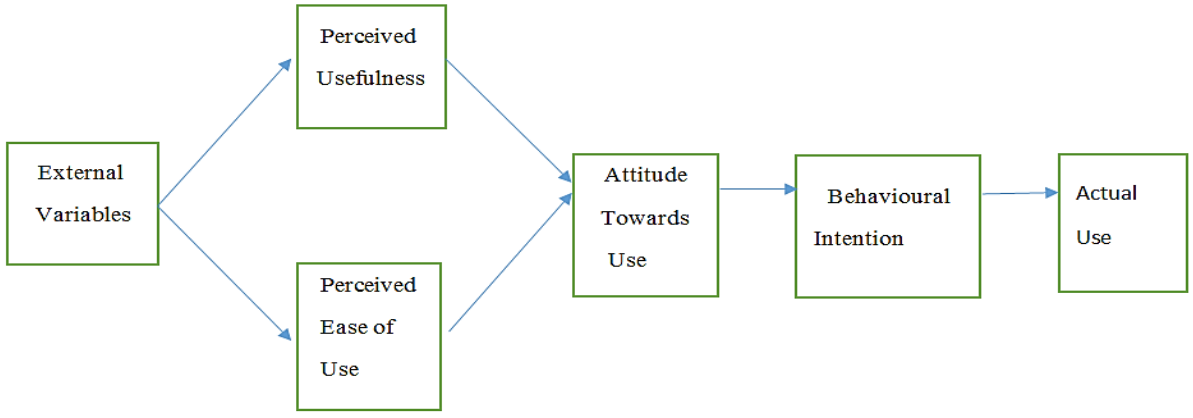

Figure 1: The Theory of Reasoned Action Source: Durodolu (2016:12)

Durodolu (2016:12) examined Davis' principles of each variable in the model. He illustrated the two important constructs of the Technology Acceptance Model (TAM), Perceived usefulness (PU) and perceived Ease of Use (PEOU). He hypothesized that the TAM makes it available a succinct method to model the impact of external variables on peoples' beliefs, attitudes, and intentions. The external factors fundamentally lead to attitudes towards the use of a particular technology and the ultimate usage of that technology. Davis (1993:475) recurrently confirmed that:

"The goal of most organizationally based information systems is to improve performance on the job. Unfortunately, performance impacts or lost whenever systems are rejected by users. Users acceptance is often the pivotal factor in determining the success or failure of an information system project."

Davis (1993) was trying to drive home the important fact that technology must first be accepted by the potential users for efficient implementation. Technology Acceptance Model was the precise method that we boldly believed would add value to our study, assist us to arrive at desirable findings and most importantly qualify us as future successful epistemological scholars in research study, capable to blow the whistle and make things happen; persuade the integration of ICT in teaching and learning.

Research Methodology and Research Design

Our study was obligated to address the challenges faced by educators and parents to accept the use of technology in teaching and learning and everyday life. The TAM consolidates the importance of accepting and embracing technology in order to cope with the dynamics of 21st century and forth industrial revolution. To address this challenges, we employed the qualitative research approach because of its nature to provide enough room to interact with participants and thereby collect considerable data to address the challenges at hand.

Qualitative methods are used to explore areas where little is known or much is known in order to gain novel understanding. It can also collect details about a phenomenon. The details can include feelings, thought processes, and emotions (Nyberg, 2012:15). Most importantly, our study is further based on phenomenological approach which Focuses on individual experiences, beliefs, and perceptions. Phenomenological approach, in unison with qualitative, made us to realise that questions and observations are aimed at drawing out individual experiences and perceptions and that In-depth interviews and focus groups are ideal methods for collecting phenomenological data.

Study Site and Sampling

The study took place in one South African school, in the Limpopo Province at Capricorn South District, Mankweng cluster and Mankweng circuit. The study took place over a period of two months. Out of 26 secondary schools, we sampled only one school. COVID 19 regulations compelled us to limit our sample to only one school. The other reason why we preferred only one school, was because one of our researcher is based in the school which criteria gave us added advantage to gather data with little difficulties. The selected school like other schools in the circuit is experiencing challenges of integrating ICT into teaching and learning, the school as well has educators and parents with stereotypic perception of ICT. The selected school is classified under quintile 3, no fee school and has National School Nutrition Programme (NSNP). The school depends solely on Norms and standards for school maintenance and day to day running.

The study is rooted in the non-probability sampling, the purposive sampling. Purposive sampling involves the selection of participants based on the researchers' judgement about what potential participants will be most informative (Moser and Korstjens, 2018:11). We sampled the principal, 1 Departmental Head (DH), 2 educators (ICT literate and illiterate), two learner representatives and two SGB members to arrive to a total of 8 participants. Confirmation was given to participants that, the information they give will be kept confidential and they should be frank when answering questions and that they were chosen precisely because they are knowledgeable. Moser and Korstjens (2018:10)

reiterate that "participants have to be knowledgeable on the phenomenon and can articulate and reflect, and are motivated to communicate at length and in depth with you." When every corner was covered, we were confident that we are ready for data collection which will be outlined in the next section.

Data Collection

Prior to agreement by participants to partake in data collection, we created an atmosphere of trust and spirit of openness that will pursue them to give us all about the challenges they face about the integration of ICT into teaching and learning and the embracement of the latter in everyday life. Keengwe, Onchwari and Wachira (2008) assert that the application of multi-media technologies (i.e., those that combine text, graphics, video, animation and audio) in teaching and learning ensures a very productive, interesting, motivating, interactive and quality delivery of classroom instruction while addressing diverse learners' needs. The study followed the two methods of data collection as indicated below:

Semi-structured (Interviews)

We considered semi-structured method to be the most appropriate and befitting as it gave us access to interact with participants and collect recommendable data. In a semi-structured interview, the researcher proceeds with a general outline of themes, which can be further expanded when needed. The questions can be asked to different participants in different ways, keeping in view, the desired context (Kabir, 2016:205).

Interviews as the valuable semi-structured technique was used to physically interact with participants. Frances, Coughlan and Patricia (2009:310) propounds that the role of the interviewer is to ensure that the interviewee is at ease and not threatened; hence the correct comfortable environment is also important. Showkat (2017:3) emphasized that an interview is a face-to-face conversation with the respondent. The interviewer cannot only record the statements the interviewee speaks but he can observe the body language, expressions and other reactions to the questions too. This enables the interviewer to draw conclusions easily.

Semi-structured method in combination with interviews formed an effective product used to collect and to find etymological background of the causes of negligence and element of resistance among parents and educators on ICT. Data collected from participants was used to develop an interview schedule to assist in data analysis. The interview schedule concealed the five (5) elements of TAM (Technology Acceptance Model): *Perceived usefulness (PU), Perceived Ease of use (PEOU), Attitude towards Use (ATU), Behavioral Intention (BI) and Actual Use (AU).*

Participants were asked questions related to the importance of using ICT, activities in which ICT can be incorporated for use (PU), whether they like ICT (PEOU), whether they are prepared to attend and learn ICT (ATU), should workshops be organized? (BI) And how they can use ICT in their daily activities (AU). Participants were officially visited four times; several times unofficial interviews were conducted by one of our researchers who by default is an educator in the school were the research is conducted. First official visit was meant for introductions, introduction of the study, setting rules of the interview and acknowledging that they participate voluntarily. Second official visit was meant for actual interviews of all participants. Third official visit was precisely spared to review and amendment of the overall compiled schedule of the interview and the fourth official visit was meant for the adoption of the final product of the interview schedule.

Policy Analysis

We embraced policy analysis as another method of data collection to supplement and beef-up the semi-structured interviews. We searched Department of Education policies from the internet which confirmed that the DoE is advocating for the integration of ICT in schools. These policy documents

included Educational policies, the Systems Assessment for Better Education Results (SABER), DBE School ICT Policy and National Education Technology Plan. Governmental non-Educational policies included the Internet Service Provider Association (ISPA), Mobile Network Operators (MNO), Mobile Virtual Network Operators (MVNOs), and SENTECH Act N0. 63 of 1996. Telecommunication Amendment Act (TAC), and State Information Technology Agency (SITA). Most interesting, about all these policies that advocate for the integration of ICT in teaching and learning is that all were accessed from the internet. It was fast and convenient to search, download, upload and print, within ten pulse rate it was already done, just like that. We later developed a checklist on the basis of the above policies.

Since data analysis involves organizing, reducing, and describing data collected by the researcher, we began right at the beginning of the study to analyse data. In sum, data analysis is a process: a series of connected activities designed to obtain meaningful information from data that have been collected (Migrant & Start, 2006:21). The audio-tape was played and notes were taken in order to re-organize data. Data was read again and again until the emergence of categories. The categories were then developed into themes and themes were put together to form a report.

Findings

From analysis of interviews and policy analysis in conjunction with the elements of TAM (Technology Acceptance Model), we finally arrived at the following findings; which we codify under the following five themes: *DoE ICT policies, Ignorance and resistance to change, socio-cultural factors, Socio-economic factors, and Stakeholder's perspective.* The following TAM table can be used to analyse the findings of the study:

Technology Acceptance Model	Theory of reasoned action	Themes
TAM	PU	DoE Policies
TAM	PEOU	Resistance to change
TAM	ATU	Socio-cultural factors
TAM	BI	Socio-economic factors
TAM	AU	Stakeholder's perspective

The above factors are discussed briefly in the next section.

DoE ICT Policies

We found no single ICT policy in the school selected for the study. In fact, all educators and parents' components were found to be in the dark, although they have two Media centres donated by MTN. We realised that they don't even know where those ICT policies could be found and what it meant. In general, it can be said that a policy describes the general organisational attitude or approach to a particular issue. A policy can be supported by a number of procedures which define the rules, regulations, methods, timing, place and people responsible for implementing the policy (GDE, 2011:33). When asked whether they know how to develop their school' policy, they responded that they know how to develop other policies but not the ICT policy. Only one educator who is ICT literate displayed vast knowledge of ICT.

Ignorance and Resistance to change

Another crucial finding, we uncovered was the fierce resistance of parents and majority of educators on change. They do not associate school computers with their cellphones. We found that parents and educators forbid their children to bring cellphones to school, do not understand the meaning and use of mobile data and consider all social networks WhatsApp, Facebook, Twitter, Instagram and tiptop etc., as corruptive and forbid their children to indulge. We witnessed the high level of ignorance

among school representatives. Balanskat, Blamire, and Kefala (2006) argue that although teachers appear to acknowledge the value of ICT in schools, they continue encountering obstacles during the processes of adopting these technologies into their teaching and learning.

Socio-cultural factors

The socio-cultural factors that emerged as an ICT challenge in teaching and learning was a shocking but interesting one. This oxymoronic statement simply indicates that parents and educators were scared that their children will see and learn sexual activities that are usually posted on social media. Culturally, a child must not be exposed to those illicit activities at tender age. The two learner representatives cited that they wish teaching and learning could follow the ICT route.

Socio-economic factors

When we asked, how many parents are interested in buying ICT gadgets for their children, majority indicated that ICT gadgets are expensive and fragile. Teachers cited that they are comfortable to teach using the usual chalk and duster. The two learner representatives specified that they usually don't depend on their parents for purchase of cell-phones and laptops, but engage in child labour to obtain stipends to buy gadgets.

Stakeholder's perspective

When asked if they are prepared to attend ICT workshops and begin to use and accept to use technology in their everyday life, surprisingly they gave a remorseful answer. Parents and educators are ready to use ICT if they are offered training. The only constrain they foresee is lack of infrastructure that need to be provided by the DoE. Ghavifekr and Rosdy (2015: 176) ascertain that infrastructure and facility of ICT is then needed to supply to the schools throughout the nation. Learners recurrently insisted that ICT teaching is fun and effective.

Discussion

Our all-inclusive finding was that parents and educators have just developed a negative attitude towards ICT. This attitude suppresses their eager to learn ICT, which finally developed into phobia, ignorance and resistance to change. This resistance to change will make it difficult for them to cope with ever-changing innovations and forth industrial revolution. The four elements of TAM (Technology Acceptance Model) are the Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude towards Use (ATU), Behavioural Intention (BI), and Actual Use (AU) are the ones that drove and guided the whole plan to change the perspective of parents.

Firstly, parents are aware that it is difficult to survive without technology nowadays. We have shifted from sending messages through letters to emails, twitter WhatsApp's etc. Nowadays Banks are not operating through cheques, but have resorted to Internet banking. Technology is moving very fast, if you don't learn, you remain behind. Many parents do not know what is expected of them, or how to access information and resources they may use to help their children experience more school success (Chaboudy & Jameson, 2001:364). Every individual carries gadgets in the form of mini computers (cell-phones). All these technological devices are convenient and thus make life easy. Ultimately, parents are obliged to adjust or suffer.

Secondly, it is an obligation not curtesy that educators must incorporate ICT in teaching and learning. Development in computers, communication, electronics and other multimedia tools provide a wide range of sensory stimuli. It is said 'I hear and I forget, I see and I remember, I do and I understand' (Bhasin, 2012:131). Learners understand better when taught the ICT way. There is the notion that learners must not bring cell phones into the school premises because their learning progress could be tampered with, but the school must provide gadgets which learners can use to search for information to improve their learning diversity.

Thirdly, that we came to the conclusion that learners can easily manipulate ICT gadgets, thus parents and teachers must support them to excel and do the best in what they like. Ratheeswari (2018:44) maintains that learner-centred learning environment is a learning environment that pays attention to knowledge, skills, attitudes, and beliefs that learners bring with them to the learning process where its impetus is derived from a paradigm of learning called constructivism. It is indeed true that for learners to be offered an effective ICT lesson, they must be taught by equally competent educators. Teachers must have the knowledge and skills to use the new digital tools and resources to help students achieve high academic standards.

Fourthly, we discovered that some parents, educators and learners are complaining about the inability of the DoE to provide necessary support in the form of ICT resources and infrastructure. Therefore, the DoE must be seen as the reliable sole provider of proper infrastructure to make possible the implementation and integration of ICT into teaching and learning. The other most delicate part is provision of training of ICT to educators and parents. The National Department of Education has developed a new framework for the professional development of South African teachers as well as guidelines to enable teachers to use ICTs (Isaacs, 2007:15).

Recommendations

The recommendations of the study are a summary of the discussion of the study and elements of the theory of reasoned action. These recommendations are capable to improve the integration of ICT in teaching and learning. We finally agreed on the following recommendations:

- Parents be trained on ICT
- Educators be compelled to teach the ICT way
- Learners be encouraged to use ICT in their studies
- All public and private schools must introduce and implement ICT in teaching
- Government to provide infrastructure to all schools
- Government to rope in private sector to donate computers, communication, electronics and other multimedia tools to all schools.

Conclusion

The findings of this study have at least five main suggestions: firstly, that ICT must be integrated into teaching and learning, secondly, that the government must take an initiative to train parents in ICT. Thirdly, that educators be obliged to teach their day to day activities the ICT way. Struggling educators be offered training in order to cope. The starting point of a digital classroom is a teacher. Teachers must be trained to effectively use the technology for planning student instruction (Bhasin, 2012:137). Fourthly, ICT be introduced and taught as a core subjects in all public schools. Fifth, that government is expected to advocate for integration of ICT in teaching and learning by providing proper infrastructure and recruit the private sector to emerge and invest in ICT school e-Education. If all these four main suggestions are heeded, we have no doubt that ICT will be successfully implemented in all public and private schools.

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