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Exploring the Effects of Information and Communication Technology as a Pedagogy for Teaching Business Studies in Grade 10 in the Lejweleputswa Education District, South Africa

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ABSTRACT

This research explored the effect of Information and Communication Technology as a pedagogy for teaching Business Studies in Grade 10. The participants were educators from three high schools in the Lejweleputswa Education District, from the Free State province, South Africa. However, they revealed that the adoption of ICT needs diverse development in terms of curriculum, educators' training and development, assessment strategies, educators' competence and various forms of teaching strategies. Thematic analysis revealed that ICT has a great and positive effect as a pedagogy because educators will be able to explain and transmit content knowledge to learners to meet the curriculum goals and objectives. This research recommends that, in order to declare the use of ICT as a pedagogy for teaching Grade 10 Business Studies in Lejweleputswa Education District. Educators need to be competent. Training and development need to be done as a commitment to advance learners with skills set for being future business people. The seeks to offer strategies for the Department of Basic Education (DBE) at the provincial, regional and district levels to be consistent and effective in supplying ICT apparatus across the province to ensure quality of education and sufficient transfer of skills. It should be acknowledged that the goal of ICT in schools is to inculcate learners with technological skills in order to mend and respond to the requirements of the Fourth Industrial Revolution (4IR) as well as Artificial Intelligence (AI).

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INTRODUCTION

The South African government is committed to investing in the fourth industrial revolution as well as artificial intelligence in order to be able to compete in the global arena. Therefore, the use of technology is a trend that simplifies the likelihood of individuals in society in terms of communication and storing valuable information. However, Kumar, Pallathadka and Pallathadka state that technologies and facilities used by teachers and learners should be handled and exercised with care, knowledge, and competence in order to enhance educational objectives.[1] Furthermore, Kumar et. al, articulate that the use and adoption

[1] Sanjeev Kumar, Harikumar Pallathadka, and Laxmi Kirana Pallathadka, "The Implication of ICT on Business Education," *Integrated Journal for Research in Arts and Humanities* 2, no. 6 (November 22, 2022): 86–91, https://doi.org/10.55544/ijrah.2.6.11.

of ICT in the education field will valuably influence learners, teachers and education authorities to work together to realize the goals and objectives.[2] Okon has revealed that the influence of ICT on teaching and learning provides an opportunity for learning to take place anywhere in the world.[3] Das further explains that ICT should be a mechanism in the teaching and learning of Business Studies, which is expected to incorporate the use of business administration and management.[4] Therefore, ICT should be acknowledged as a pedagogy for strengthening the facilitation of classroom developmental activities and problem-solving. On this tangent, this study intends to explore the effects of Information and Communication Technology as a pedagogy for teaching Grade 10 Business Studies in the Lejweleputswa Education District.

LITERATURE REVIEW

Parallel international reviews on the effects of Information and Communication Technology as a pedagogy

The study conducted by Das in India revealed that a significant relationship between ICT, and Business Studies exists and that teachers and learners should pay unwavering and undivided attention in order to utilize it.[5] In addition, Zafar emphasises that ICT has a valuable impact on teaching and learning by influencing learners learning achievement in the subject matter.[6] Moreover, Falobi stated that Information and communication technology has the potential to improve the instructional delivery for Business Studies teachers and learners. Das posits that ICT as a pedagogy has a positive impact on language and on learners' learning outcomes.[7] In addition, Ghavifek and Rosdy concur that ICT helps teachers meet international education standards in order to remove traditional teaching techniques with technology-based teaching and learning mechanisms and opportunities.[8] Meanwhile, in Malaysia, the use of ICT is perceived as the element that intends to transform the country for future developments. According to Igbongidi, Business Studies is a module that assists learners in being exposed to the realities of business practice, and the module is created to inform learners about future prospects.[9]

Undoubtedly, ICT is a unique instructional tool to provide teachers with an opportunity to modify teaching and learning procedures in order to enhance learners' learning interests. However, the use and adoption of ICT in teaching and learning Business Studies makes the teaching process effective and efficient for all learners. In support of this, Igbongidi explains that an educator is trained and empowered in pedagogy as well as in teaching Business Studies in order to transfer knowledge, skills, and attitudes to learners.[10]

In addition, an educator is an individual who initiates communication with learners to impart knowledge, skills, and attitudes and to produce desirable changes in learners' behavior during the process of teaching and learning. Moreover, Igbongidi recommends that knowledgeable and skillful educators, specifically Business Studies educators, should visit business offices that are capacitated with modern technologies on school trips with learners to broaden their knowledge and understanding.[11]

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[2] Kumar, Pallathadka, and Pallathadka, "The Implication of ICT on Business Education,"

[3] AniediAbasi Okon Ekpatt, "Concepts of God, Divinities, Ancestors, and Spirits in African Traditional Religious Thought: Conceptual Analysis," in *Phenomenological Approaches to Religion and Spirituality* (IGI Global, 2021), 18–43.

[4] P, K. Das, " Implication of Information and Communication in Business Education-a Study," *The American Journal of Humanities and Social Sciences Research* 13, no. 5 (2021), 38.

[5] Das, " Implication of Information and Communication in Business Education-a Study."

[6] T Zafar, "Role of Information Communication Technology (ICT) in Education and Its Relative Impact," *International Journal of Engineering Research and Technology (IJERT)* 7, no. 04 (2019): 1–10.

[7] Das, " Implication of Information and Communication in Business Education-a Study."

[8] W. A. W. Ghavifekr, S., and Rosdy, "Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools," *International Journal of Research in Education and Science* 1, no. 2 (2015): 175–91.

[9] Binaebi Paul Igbongidi, "Information and Communication Technology Skills Needed by Business Studies Teachers in Junior Secondary Schools in Bayelsa State," *International Journal of Advanced Research in Social Engineering and Development Strategies* 5, no. 1 (2018): 26–43.

[10] Igbongidi, "Information and Communication Technology Skills Needed by Business Studies Teachers in Junior Secondary Schools in Bayelsa State."

[11] Igbongidi, "Information and Communication Technology Skills Needed by Business Studies Teachers in Junior Secondary Schools in Bayelsa State."

South African parallel review on the effects of Information and Communication Technology for teaching Business Studies

Bialobrzeska and Cohen state that South African educators need competencies such as having basic skills, for example, using a computer, an ability to use and interpret computer-related material, evaluating and updating diverse software, and websites and authoring a webpage.[12] However, Ndlovu revealed that once educators have adopted basic skills, knowledge, and competence, they have an opportunity to enhance their abilities to incorporate their pedagogical practice.[13] Even though, Dube, Nhamo, and Magonde identified a number of factors that affect ICT integration in the teaching and learning of physical education in South Africa such as educators' attitudes toward using ICT, educator training for using ICT, educator access to ICT and computer self-efficacy.[14] Therefore, Dube et al recommended that poor training, negative attitudes, lack of direct ICT training, and insufficient physical education software are contributors that hinder the progress and integration of Information and Communication Technology for facilitating physical education.[15]

Kamalizeni and Naidoo evaluated the use of ICT in the management of secondary schools in Mpumalanga province in South Africa, their research results indicated that there should be comprehensive training and empowerment that focuses on the use of ICT in the management of secondary schools.[16] Moreover, Jain explored ways of enhancing educators' digital skills in facilitating Economics in South African secondary schools and their report states that the Curriculum Assessment Policy Statement (CAPS) does not make provision for how educators should resourcefully use and adopt Information and Communication Technology.[17] Similarly, Filita and Jita explored the utilization of ICT in teaching Sesotho as a home language and their research findings showed that there is improper adoption and use of ICT in facilitating Sesotho among the selected South African secondary schools around Bloemfontein in the Free State province, South Africa.[18] Further, their results indicated that there is a lack of Information and Communication Technology training among educators and a paucity of resources in the selected schools.

In this regard, the Department of Basic Education is committed to accelerating and advancing the effective implementation of ICT in the basic education sector, the Department of Basic Education has passed a draft implementation strategy for the provision of digital learning and teaching support material from 2020 to 2025 through ICT devices.[19] Therefore, the objective intends to exercise control on ICT to decrease the cost of provisioning print of learner and teacher support material to pupils and empower them with the essential 21st Century skills for the fourth industrial revolution. This intercession is anticipated to provide manifestation to the National Development Plan (NDP) vision 2030 requirements of leveraging technology to address educational challenges such as the delivery of textbooks and other learner support material to distant schools and this objective will promote inclusivity and equitable quality education and provide life-long learning opportunities for all learners.

THEORETICAL FRAMEWORK

This research adopted the Diffusion of Innovation championed by Roger with the intention of explaining how a particular group of people can accept an innovation.[20] Therefore, Gikenye & Ocholla articulates that an innovative philosophy can be a technological practice that is shared and communicated to a group

[12] Maryla Bialobrzeska and Susan Cohen, "Managing ICTs in South African Schools: A Guide for School Principals," 2005.
[13] N, S. Ndlovu, " The Pedagogical Integration of ICT by Seven South African Township Secondary School Teachers" (University of the Witwatersrand, South Africa, 2015).
[14] Balume Amstrong Dube, Edmore Nhamo, and Simbabrashe Magonde, "Factors Affecting ICT Integration in the Teaching and Learning of Physical Education in South Africa: A Case of Johannesburg East Cluster Primary Schools in the Gauteng Province," *International Journal of Sport, Exercise and Health Research* 2, no. 1 (2018): 88–92.
[15] S P Dube, "An Investigation of the Science Technology Engineering and Mathematics (STEM) Initiative in the Zimbabwean Education System," *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE)* 9, no. 1 (2018): 3329–34.
[16] Aubrey Kamalizeni and Karuguranan Naidoo, "Evaluation of the Use of ICT in the Management of Secondary Schools: The Mashishila Circuit in Mpumalanga," *Journal of Management and Administration* 2018, no. 2 (2018): 99–134.
[17] Sonali Bhandari Jain, "Technology and Education-Prospects of a Future Classroom.," *Shanlax International Journal of Education* 9, no. 3 (2021): 149–54.
[18] Naledi Filita and Thuthukile Jita, "The Use of Information and Communication Technology in the Teaching of Sesotho as a Home Language," *Journal of Education (University of KwaZulu-Natal)*, no. 91 (2023): 3–14.
[19] Department of Basic Education (DBE), *Education Laws Amendment Act* (Pretoria: Government Printers, 2007).
[20] E. M. Rogers, *Diffusion of Innovations*, 5th ed. (Tampa. FL: Free Press, 2003).

of people (teachers) in a particular social context (school or classroom setting).[21] The vision of this theory is to encourage teachers to adopt the use of technology in their teaching practice. However, the adoption and utilization of Information and Communication Technology as a pedagogy for teaching Business Studies in Grade 10 in the Lejweleputswa Education District will lead to a desirable change in teachers' attitudes and behavior and will positively influence learners' achievement. According to Rogers in order for technology as innovation to be accepted, then the following attributes and rates of adoption should be satisfied.[22]

Relative Advantage

This is the extent to which technology as a pedagogy for teaching business Studies is perceived as more effective and efficient than the idea of using traditional teaching methods. Therefore, in a case where teachers are overwhelmed with administrative burdens such as planning the lesson, preparing assessments, recording and reporting learners' performance while using pen and paper, they rather adopt technology to design their instructional techniques. Moreover, this adoption of Information and Communication Technology enables teachers to store data safely for future use.

Compatibility

This is the point where ICT as a pedagogy is alleged as reliable with the values, experiences, and needs of teachers.[23] Therefore, a lack of compatibility in ICT with teachers' needs may negatively influence teachers' technology use and adoption. If ICT is compatible with teachers' necessities, then ambiguity will decrease and the rate of adoption of ICT will increase.

Complexity

This is the step whereby ICT as a pedagogy for teaching Business Studies in Grade 10 in Lejweleputswa, is considered impossible to comprehend, use, and adopt.[24] However, teachers might experience technological innovation as challenging, forcing them to change their teaching techniques and methods in order to incorporate ICT into their teaching practice. If the hardware such as computer monitor, mouse, keyboard, printer, USB flash drive and software such as multimedia software, Microsoft Office, Google Chrome, word processing and presentation software is user-friendly, then they might consider using and adopting them to deliver their lesson content successfully.

Trial ability

According to Rogers, this is the stage whereby ICT as a pedagogy is experimented with in a short period of time and resources.[25] Therefore, trial ability is associated with the rate of adoption. The more ICT is tried, the faster its use and adoption. However, Rogers articulated that earlier users and adopters perceive the trial ability factor of ICT as more valuable and crucial than later users and adopters.[26]

Observability

This is the degree, to which the outcomes of innovation of ICT are witnessed by teachers.[27] Furthermore, Rogers contended that innovations offering relative advantage, compatibility, trialability, and observability would be used and adopted faster than other innovations.[28] For example, if teachers realize that the use and adoption of information and communication technology as a pedagogy for teaching Business Studies assist them in modifying their teaching practice and convenience, they will definitely consider integrating it into their classroom setting.

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[21] Wakari Gikenye and Dennis N. Ocholla, "The Diffusion Of Information And Communication Technologies In The Informal Sector In Kenya," *Mousaion: South African Journal of Information Studies* 32, no. 3 (September 30, 2016): 29–48, https://doi.org/10.25159/0027-2639/1665.
[22] Rogers, *Diffusion of Innovations*.
[23] Rogers, *Diffusion of Innovations*.
[24] Rogers, *Diffusion of Innovations*.
[25] Rogers, *Diffusion of Innovations*.
[26] Rogers, *Diffusion of Innovations*.
[27] Rogers, *Diffusion of Innovations*.
[28] Rogers, *Diffusion of Innovations,*16.

METHODOLOGY

The study adopted the use of the phenomenological research design, due to the rationale that the research seeks to explore the structures and activities of the human life world, the lived world as experiences, issues, problems, and challenges encountered in everyday circumstances and associations. The phenomenology assisted the researcher in paying attention to the meaning that certain lived experiences hold for participants, that is to determine what an experience means for the persons who had the experience and were able to provide a comprehensive description of it. For example, the researcher intended to make sense of how teachers incorporate the use of ICT as a pedagogy for teaching Business Studies in Grade 10, to explore their experiences, and to make sense of the meaning of their teaching practice.

Participants and setting

This research consisted of three (3) high schools, of which one (1) educator from each school took part in this research. Therefore, in total, three (educators') contributed their experiences to this research. The chosen participants consist of two (2) male educators (black) aged between 26 and 30 years and one (1) female educator (black) aged 31 years old. The two male educators' had six (6) years of teaching Business Studies in Grade 10, while the females had four (4) years of teaching Business Studies in Grade 10.

Data Collection and Procedure

The researcher informed the participants about the objectives of this research and obtained consent from the participants for ethical purposes. Therefore, the participants' names and schools were not revealed, instead, pseudonyms were used. During the collection of reliable data, the researcher used qualitative methods. However, the researcher used structured observation. Firstly, the intention of this collection method was important as it allowed the researcher to see, hear, and experience reality in the same way participants did specifically in the classroom settings.[29] In addition, Hora and Ferrare explain that classroom observation is a tool that directly observes a teacher during teaching and learning.[30] The rationale was to witness which tools of information and communication technology teachers used as their pedagogy for teaching Business Studies in Grade 10.

To strengthen the data, the researcher used semi-structured interviews to allow flexibility despite the set-predetermined questions; this method of data collection provided an opportunity to probe additional questions relating to the effects of information and communication technology as a pedagogy for teaching Business Studies. Therefore, semi-structured interviews enabled the researcher to rephrase questions where clarity was due to gain thorough information.

Data Analysis

The data analysis strategy the researcher used to interpret information from the population sampled expressed in the sampling plan was phenomenological data analysis. This analytical method assisted the researcher in gaining in-depth meaning from the participants' lived experiences and what meaning they possibly attached to the phenomenon under the spotlight that is the effects of information and communication technology as a pedagogy for teaching Business Studies in Grade 10. However, the observed lessons were recorded and transcribed. This ensured that the accurate responsibility of the lesson was captured. In addition, semi-structured interviews were also recorded and transcribed. The researcher defined and constructed data in a way that provided truthful meaning by quoting the actual words of teachers because the nature of research inquiry is concerned with obtaining the meaning and lived experiences of teachers.

[29] Kobus Maree, *First Steps In Research* (Pretoria: Van Schaik Publishers, 2007).
[30] M, T. Hora and J, J. Ferrare, " A Review of Classroom Observation Techniques in Postsecondary Setting," University of Wisconsin-Madison, Wisconsin Centre for Education Research, 2013, http://www.wcer.wisc.edu./publication/workingPapers/papers.php.

PRESENTATION OF FINDINGS AND DISCUSSIONS

The thematic analysis resulted in two themes: (i) the effects of using ICT as a pedagogy for teaching Business Studies and (ii) Factors to consider for integrating ICT for teaching Business Studies.

Theme 1: The effects of using ICT as a pedagogy for teaching Business Studies

Three of the observed and interviewed educators'' stated that the integration of ICT will help learners understand subject matter concepts and terminologies. They further motivated that curriculum outcomes and expectations will be met with success. Therefore, the following observations and experiences were provided when the researcher asked educators about the possible effect of incorporating ICT for teaching Business Studies:

Educator A from School A: 'The implementation and integrating ICT in teaching Business Studies will help to improve the pass rate of learners', they will understand the subject better due to the fact that learners will have access to the internet and computers'.

Educator B from school B: 'ICT will assist me as an educator and other colleagues who specialize in Business Studies to broaden our knowledge base as well as expanding learners' knowledge, skills and abilities'.

Educator C from school C: 'The inclusion of ICT in the curriculum is important and also to have technological equipment and the labs in the school will improve the standard of our education, learners' knowledge development and skills. It should be acknowledged that Business Studies should not only be theorized, but it should also be a practical base subject where learners are challenged and motivated to use computers for typing and copy machines to print documents.'

Das posits that ICT should be a mechanism in the teaching and learning of Business Studies, which should incorporate the use of practical business administration and management.[31] Kumar et al have also articulated that the use and adoption of ICT will valuably influence learners, educators and education authorities to work together to realize the goals and objectives.[32] The researchers accentuate that the adoption, use and integration of ICT as a pedagogy will add meaningful development to Business Studies as a subject and to the overall education system. However, it is true that learners have the potential to become future entrepreneurs who are sustainable and able to participate in economic activities.

Theme 2: Factors to consider for integrating ICT as a pedagogy for teaching Business Studies.

The researchers asked which factors to put into consideration in order to ensure successful integration of ICT for teaching Business Studies, then educators stated that there are a plethora of factors that need to be accounted for, such as curriculum development, educators' training and development, learners learning styles and needs; development of assessment strategies and adoption of teaching strategies. and lastly, educators' competence to teach using ICT tools. Their submissions are presented below:

Educator A from school A: *'As teachers, we need to be trained to use the software that real businesses use in the modern days. There is now the incorporation of artificial intelligence and the inclusion of the fourth industrial revolution that requires active skills. Moreover, learners' learning needs, such as computer literacy skills need to be developed in order for them to become future entrepreneurs.'*

Educator B from school B: *'The Department of Basic Education needs to build our school a computer lab, we do not have it. Forms of assessments to evaluate learners' learning need to be updated since we aspire to use ICT. Lastly, internet access needs to be available if we are to involve ICT in teaching the subject matter.'*

[31] Das, " Implication of Information and Communication in Business Education-a Study."
[32] Kumar, Pallathadka, and Pallathadka, "The Implication of ICT on Business Education,"

Educator C from school C: *'There should be a training and development workshop that will prepare us to use ICT in our classrooms, our competence, as teachers need to be considered because we will be required to advance to different teaching strategies and techniques.'*

In this regard, the Department of Basic Education is committed to accelerating and advancing the effective implementation of Information and Communication Technology in the basic education sector, the Department of Basic Education has passed a draft implementation strategy for the provision of digital learning and teaching support material from 2020 to 2025 through Information Communication Technology devices.[33] Therefore, the objective intends to exercise control on Information Communication Technology to decrease the cost of provisioning print of learner and teacher support material to pupils and empower them with the essential 21st Century skills for the fourth industrial revolution.

The researcher suggests that the Department of Basic Education at the provincial and district levels needs to expedite the process of incorporating ICT in all public schools and build computer labs with tight security. Educators need to be trained and be well developed in order to meet the standard of using ICT in the teaching and learning of Business Studies in Grade 10.

Theme 3: How Information and Communication Technology enhance educators' pedagogical knowledge

The researcher questioned educators how the integration of ICT in teaching Business Studies enhances their knowledge of teaching and knowledge of learners, then educators reflected that the use and adoption of ICT have the potential to make teaching and learning convenient due to the availability of Internet to enable them to search for additional information that is not included in the learning materials. For example, textbooks and study guides. The following submissions were made:

Educator A from school A*: 'I believe that the use and adoption of ICT will assist me to unpack content clearly to learners and to address their misconception about the topics that are in the curriculum.'*

Educator B from school B*: 'ICT is an investment to proper quality teaching and learning, therefore, as a mediator of learning. I will be in a better position to plan classroom activities well and ICT will help me to adopt what is known as reflective teaching, whereby my teaching practice is recorded using the camera to take video during teaching and learning.'*

Educator C from school C: *Personally, the use of ICT for teaching Business Studies is valuable because it will broaden my knowledge base and capacitate learners' knowledge. ICT is convenient considering that Business Studies require practical application. Therefore, I am expected to plan and conduct effective classroom activities that require interaction, then using technology in the classroom is important to meet the learning outcomes.*

The researchers state that using and adopting ICT will help educators plan and teach beyond the content knowledge. ICT will assist educators in improving their instructional methods and techniques, and learners' learning needs will be met with the success of using ICT. However, Ndlovu revealed that once educators have adopted basic skills, knowledge, and competence, they have an opportunity to enhance their abilities to incorporate their pedagogical practice.[34]

RECOMMENDATIONS

In order to declare the use of ICT as a pedagogy for teaching Grade 10 Business Studies in Lejweleputswa Education District. Educators need to be competent, for example, they need to have skills to operate and use various forms of technological devices, and they need to adopt new teaching strategies. Training and development need to be done as a commitment to advance learners with skills set for being future business people. Pedagogy is an art of teaching and it requires commitment, creativity and analytical thinking and operational skills in order for ICT to be well incorporated.

[33] Department of Basic Education (DBE), *Education Laws Amendment Act*.
[34] Ndlovu, " The Pedagogical Integration of ICT by Seven South African Township Secondary School Teachers"

It is important that educators be provided support in order for the integration of ICT to be successfully implemented and that teaching and learning material be available to both educators and learners. It should be acknowledged that the spirit of Curriculum Assessment and Policy Statement (CAPS) be taken into consideration that it aspires to produce learners who are responsible learners who know how to work with others and be able to create employment for themselves and for others. Therefore, learners should be taught how to use technological gadgets such as computers, photocopy machines, and the internet.

CONCLUSION

This research aimed to explore the benefits that ICT has in the teaching and learning of Business Studies in the Lejweleputswa Education District, South Africa. The intention was to provide strategies for the Department of Basic Education (DBE) at the provincial, regional and district levels to help them to be consistent and effective in supplying ICT apparatus across the province to ensure quality of education and sufficient transfer of skills. It is important to acknowledge that the goal of ICT in schools is to inculcate learners with technological skills in order to mend and respond to the requirements of the Fourth Industrial Revolution (4IR) as well as Artificial Intelligence (AI). Therefore, the researcher articulates that teachers and learners will be presented with a plethora of opportunities to use technology in the classroom and societal context to improve their livelihoods. However, Business Studies should be more operational than theoretical in order to meet curriculum goals and address learners' learning needs.

LIMITATIONS OF THIS RESEARCH

This research used only three educators from three selected high schools in the Lejweleputswa Education District as participants. Therefore, the result of this research cannot be generalized.

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