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Part 1

Comparative and International Education & History of Education

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Exploring Programme Delivery in the Further Education and Training Phase of South African Secondary Schools amidst the COVID-19 Pandemic: Challenges, Mitigation Strategies and Transformative Approaches

Abstract

This paper investigates the challenges, mitigation strategies and transformative approaches in educational programme delivery in South African education amidst the adverse influence of the pandemic in schools' Further Education and Training phase with a focus on the integration of technology-enhanced effective teaching and learning; using data obtained from interviews of a data-rich sample of the school management team and teachers of five schools. The noteworthy contribution of this paper to knowledge in the context of Comparative and International Education pertains to transformative strategies for technology-enhanced programme delivery in education. This paper's final objective is to link the explored findings of challenges, trends and innovations in the South African education system to the theme of this book focusing on the different worlds' common education challenges. Furthermore, the findings emphasised the need for innovation and transformation toward a technology-enhanced education environment, especially in the Fifth Industrial Revolution milieu. In addition, this paper presented noteworthy recommendations for educational stakeholders and future research.

Keywords: Fifth Industrial Revolution, Further Education and Training, influence of COVID-19 on education, Information and Communication Technology, programme delivery, quality education, technology-enhanced education, education transformation

Introduction

In South Africa (SA), similar to international experiences, educational institutions experienced significant interruptions in teaching and learning due to their closure because of the COVID-19 pandemic.

The use of technology-enhanced education has prompted significant controversy and deliberation on a global scale. Although the pandemic forced it abruptly upon educational systems, the emergence of the Fifth Industrial Revolution (5IR) (see UNESCO, 2015) has rendered technology-enhanced education indispensable.

This research relied on an analysis of relevant literature and interviews with secondary schools' Further Education and Training (FET) phase (grade 10-12) school management team (SMT) members and teachers, in five schools in the Ehlanzeni district of the Mpumalanga province. These included schools from all Quintiles. The purpose of the interviews was to gather insights and perspectives on the delivery of educational programmes in the FET phase of Quintiles 1-5 public schools in SA during the pandemic. Quintile 1 schools provide education to socio-economically disadvantaged populations, whereas Quintile 5 schools serve communities with a higher socio-economic status (Department of Education, 2005, p. 7).

South African education system: background

SA is a developing nation (an upper middle-income country), with a population of 62 million. The South African education system consists of 23,076 public schools, which accommodate around 12,408,755 students and employ 407,000 teachers (DBE, 2020, pp. 6-7). As of 2022, there are a total of 24,871 schools in the country (Statista, 2023).

According to the World Bank (2022), SA has one of the highest rates of socio-economic inequality globally and is facing a very high unemployment rate of 34.5% (Stats SA, 2021, p. 8), which is significantly impacting the implementation of educational programmes. While a minority of schools (the Quintile 4 and 5 schools) are well-resourced and function effectively, many schools in the country are poorly resourced and outright dysfunctional. As in countries elsewhere (for example, see Reimers, 2021, pp. 171-174), the COVID-19 pandemic as well as pre-occurring economic and educational issues had significant adverse effects on the delivery of educational programmes in South African schools (Motshekga, 2023, p. 2).

The subsequent section elaborates on the key findings derived from the analysis of interviews and a review of literature about the main challenges it posed to programme delivery in South African secondary schools. These challenges were also commonly encountered in other developing countries in a comparable economic context.

The influence of COVID-19 and challenges to educational programme delivery in South Africa

The pandemic's detrimental effect on programme delivery posed a wide range of persistent challenges for FET teachers in SA. The subsequent review focuses on the most noteworthy discoveries:

The implementation of social distancing protocols and the adoption of a rotating schedule, where students were only required to attend class in person for half of the usual school time (Dayimani, 2022), had substantial implications for the physical infrastructure

of secondary schools to accommodate students daily. As a consequence of this intervention, several reports have shown that teachers fell behind and were unable to meet the minimum curriculum requirements specified in the revised Annual Teaching Plan. In addition, the use of rotational timetables led to a rise in frustration among secondary school teachers due to the repetitive nature of teaching the same topic several times. Furthermore, a rotating timetable technique was deemed inadequate and led to a notable decline in the ability of students to acquire the required competencies (DBE, 2020, p. 13).

Absenteeism was a significant issue that both teachers and students experienced as a result of emotional encounters of uncertainty and anxiety throughout the pandemic. The teachers' absence led to an increased workload for the remaining teachers at the school, who had to take on the tasks of their missing colleagues. This, in turn, resulted in increased levels of work-related stress.

One notable finding from this research is highlighted by the South African teachers. They argue that a notable loss of learning occurred due to the suggested pace-setters as well as the trimmed and revised curriculum and assessment criteria introduced by the Department of Basic Education (DBE). Teachers encountered challenges in meeting the newly implemented requirements for curriculum coverage. As a consequence, students were promoted to the next grade level, primarily based on basic evaluation methods, without necessarily displaying an understanding of the prescribed curriculum. Additionally, students exhibited a discrepancy in memory retention from the previous lesson to the subsequent session (Dorn et al., 2020).

As might be expected, the study revealed that the full or partial closure of schools, as part of the pandemic regulations, along with the lack of online educational resources, led to inadequate communication among the school, teachers, students and parents. FET teachers from the lower Quintile schools faced challenges in implementing online teaching and learning methods. As a result, they were limited in their ability to effectively interact and deliver educational programmes to their students. This discovery supports the assertion made by Giannini et al. (2022) that a substantial portion of the global population with low and middle incomes experienced learning poverty during the pandemic due to the digital divide problem, which was caused by a lack of or inadequate access to data, devices or networks.

Even those secondary schools which managed to incorporate digital and Information and Communication Technology (ICT) methods into their teaching practices, often experienced difficulty operating and facilitating digital teaching tools. Therefore, as a result, they mainly relied on remote methods to deliver educational content to students, which led to reduced effectiveness (Fullard et al., 2022, p. 22). Consequently, despite the growing use of online integrated programme delivery options there was inadequate support and guidance to assist them in successfully implementing it (Backfisch, 2020, p. 1), along with a deficiency in the necessary skills and preparedness to adapt to the swift transition from traditional in-person instruction to the provision of technology-enhanced programmes via online platforms.

The subsequent discussion of the findings of this research project focused on the strategies employed by teachers and SMT members to address and surmount the programme delivery challenges.

Educational programme delivery mitigation strategies

The investigation found that teachers generally displayed a positive attitude, marked by adaptability, innovation and implementation towards resolving the significant problems faced in delivering educational programmes. SMT members and teachers implemented several interventions to address the difficulties in delivering the programme including providing additional lessons, distributing curated worksheets and textbooks as paper-based take-home packages for students, employing substitute teachers to address the high rate of absenteeism among colleagues and accommodating the rotational schedule, seeking assistance from educational partners with specialised knowledge and support as well as utilising technology-enhanced online solutions. In addition, the DBE implemented educational broadcasting lessons that were aired on television and radio stations (Stats SA, 2022, p. 42). It became evident that the majority of these schools' teachers utilised a combination of these strategies for delivering the programme.

A significant discovery reveals that those teachers at Quintiles 1-5 schools actively advocated the utilisation of mobile phones as a method of delivering education programmes, both during and after the pandemic. Hence, it can be contended that the United Nations (UN) proclamation and determination to prohibit the use of mobile phones in classrooms (Pienaar, 2023, p. 1) should be re-evaluated and examined to ascertain if these devices ought to be included in educational reform plans or not. The findings indicated that mobile phones were effectively merged into the teaching methods of the majority of secondary schools, serving as tools for educational activities, to achieve the programme delivery target.

What emerged from the findings of the investigation is that the majority of public schools in SA across Quintiles 1-5 explored and endeavoured to integrate remote alternatives for programme delivery during the pandemic. Teachers utilised various communication and programme delivery methods within various Quintile schools as follows:

- With the exception of a few, the Quintile 1 rural school areas relied solely on in-person teaching and issued paper-based take-home packages as their main ways of delivering academic programmes.
- Schools in Quintiles 2 and 3 opted for in-person, paper-based take-home packages as a method of instruction, supplemented by the use of WhatsApp Messenger for communication and engagement purposes.
- The teachers in Quintile 4 utilised technology-enhanced solutions, such as laptops and desktop computers, at computer centres. These solutions included a range of tools, such as Zoom video-conferencing and WhatsApp Messenger, as well as specifically chosen worksheets and textbooks.
- In Quintile 5 schools, teachers utilised technology-enhanced options such as the Learning and Teaching Management System (LTMS) Moodle, chat rooms, Zoom and Teams video-conferencing platforms, Facebook and WhatsApp. These tools were combined with carefully selected worksheets and textbook activities.

To conclude this section, this research also identified that despite the digital resource challenge, there is a desire, necessity and readiness among South African FET teachers to transition toward a technology-enhanced educational setting, which will be subsequently discussed.

Evolving educational landscape: shifting focus from traditional to innovative education

The results of this study unambiguously verified that the digital technology-enhanced approach, also known as ICT-integrated teaching, was endorsed and suggested as the new strategy for programme delivery that has emerged in response to the COVID-19 pandemic, transforming the field of education in SA. Despite this, SA faces difficulties in adapting to technology-enhanced education due to resource limitations caused by poverty.

Significant discoveries and recommendations emerged on the transition to technology-enhanced approaches for delivering educational programmes in the South African school system. A major goal of the DBE is to encourage and facilitate the implementation of a technology-driven approach to education in schools (MDoE, 2023, p. 60). In order to achieve this objective, the MDoE has developed an e-learning and teaching plan that will be gradually adopted across the whole education system in the province (MDoE, 2023, p. 59) to transform the methods of teaching and learning. Moreover, the MDoE supports the implementation of the National Development Plan (NDP) 2030, in accordance with the South African Schools Act (SASA), by gradually empowering principals with greater authority in implementing school reform strategies (MDoE, 2023, p. 58).

Furthermore, projects like Ubuhlebuzile are crucial in equipping grade 12 students and teachers from Quintiles 1-3 secondary schools with technological devices and data, which leads to significant outcomes. With this educational transforming project in progress, it is disappointing to discover that this endeavour encounters challenges regarding the yearly retrieval and reassignment of devices (Siwela, 2023, p. 7). Therefore, the conclusion can be made that the acquisition of resources, implementation process, financial issues, risk management and skill development are crucial factors to be considered and addressed in the transition process towards technology-enhanced programme delivery.

One of the more significant findings to emerge from this study highlights the importance of focusing on future skill development during the senior secondary phase (MRTT, 2023, p. 38). The objective of this effort is to effectively equip students with the essential skills and information needed to fulfil the employment demands of the 5IR era, which is distinguished by the prevalence of artificial intelligence. Thus, students need to be sufficiently prepared to take on the role of global participants. This process commences with the proper training of FET teachers to readily embrace educational change which involves an obligation to obtain training in technological competencies and to ensure sufficient resources to effectively facilitate programme delivery (Skhephe, 2022; Backfisch, 2020, p. 1). Furthermore, it was thought important to conduct orientation meetings with students to sufficiently prepare them for effective participation in the delivery of the educational programme.

Collectively, the practical implications of these findings also suggest proper preparation and ICT training for prospective teachers studying at the tertiary level. To this end, these candidates will be better equipped and skilled to effectively participate in the delivery of digital and ICT-integrated programmes in schools (Skhephe, 2022).

Finally, the main practical implication of education transformation in SA is the implementation of virtual classrooms by establishing LTMSs in secondary schools (MDoE, 2023, p. 37). Concerning future research, it is recommended that additional

research be conducted to investigate the implementation, management and advancement of virtual classrooms along with the integration of technology-enhanced modes and methods for teaching and learning in secondary schools in SA. Hence, as an integral component of this research, it is essential to prioritise the monitoring of the latter by teachers and the DBE.

A contribution to Comparative and International Education

The devastating effects of COVID-19 on students' academic achievements due to the restricted availability and effectiveness of educational programmes during the pandemic, particularly for those who were economically deprived and disadvantaged, demonstrated the possible adverse consequences that a crisis event, such as a major epidemic or another pandemic could have on educational institutions, especially in a developing country such as SA.

This research is informative because it shows how secondary school teachers managed the unprecedented programme delivery difficulties that arose amid the pandemic. It also unintentionally provided teachers with a chance to adopt innovation and support the shift towards a digitally improved educational environment. The practical significance of this research lies in its capacity to provide secondary schools in similar contexts with valuable knowledge derived from the shared practices of teachers. This knowledge allows schools to observe and compare more effective techniques with less feasible alternatives. Hence, it is crucial to employ a comparative approach to analyse an appropriate framework for implementation and determine how it might be achieved. Furthermore, it instils a feeling of possibility that was previously met with doubt, allowing school leaders to effectively cooperate with stakeholders and educational partners to empower them in their efforts to bring about educational transformation within their own schools.

Within the Comparative and International Education framework, FET secondary school teachers should critically examine their views regarding the implications of the pandemic on programme delivery and embrace novel insights in response to evolving circumstances. These insights should direct them in acquiring and embracing reformed perspectives on educational innovations that result in practical implementation. To this end, teachers can successfully compare and exchange the described transformative actions with one another in similar educational settings which would promote mutual empowerment and the acquisition of information.

Conclusion

The conclusions of this paper are vital for understanding the negative effects of a pandemic on the delivery of educational programmes in SA, a developing nation. These also contribute to improving readiness for future incidents and provide detailed insights into the areas affected by such crises. The examination of the interviews and the literature revealed specific variables that must be considered to improve the education sector and avoid a repeat of catastrophic damage. To achieve this goal, it is crucial to have a thorough comprehension of the potential influence and challenges pointed out in the concluded findings, as well as how teachers overcame the challenges encountered in delivering the programme.

The COVID-19 disruption also led to the emergence of innovation in education. The study revealed that the closure of secondary schools as a result of the pandemic prompted FET teachers to quickly seek alternative methods to deliver educational programmes. The majority of schools responded by implementing different levels of technology-enhanced programme delivery approaches to mitigate the negative effects of the pandemic on education. Regrettably, the utilisation of technology-driven approaches for delivering programmes presents challenges for underprivileged and marginalised groups, mostly due to resource constraints. Nevertheless, a noteworthy discovery was that many students in Quintiles 2-5 secondary schools in the FET phase utilised their mobile phones as teaching tools to engage in programme delivery despite the UN's objection to allowing mobile phones in the teaching and learning environment.

To conclude, COVID-19 has prompted the introduction of innovative methods for delivering educational programmes, resulting in a significant awareness of transformation in the education sector of SA. These advancements align with the objectives of NDP 2030 and the vision and mission of the MDoE, which prioritise their unwavering dedication to adopting technology-enhanced approaches and techniques for the delivery of programmes.

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