

## Part 1

# Comparative and International Education & History of Education

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## Handling the Impact of the COVID-19 Pandemic by a South African Secondary School: A Case Study

### Abstract

This paper aims to demonstrate how a South African secondary school responded to the negative impact of COVID-19 and still ensures quality education. This paper's final objective is to link this experience to the theme of this book focusing on the next epoch of education. The paper commences with an orientation and autobiographical reflection on the case study-school (cs-school). The findings revealed how this school adopted and established an online digital education solution to ensure the continuation of effective teaching and learning amid, as well as after the pandemic. However, the findings also indicate challenges that this school experienced.

Keywords: coronavirus disease 2019 (COVID-19), online digital education, teaching and learning, secondary school, Learning and Teaching Management System (LTMS), quality education, education systems and Fourth Industrial Revolution (4IR)

### Introduction

Globally, secondary school education is facing immeasurable educational challenges because of the devastating impact of coronavirus disease 2019 (COVID-19) since 2020. This has resulted in unprecedented periods of interrupted education, during which learners could not attend schools in the traditional way. To ensure the continuation of quality teaching and learning at schools in South Africa (SA), the Department of Basic Education (DBE) has promoted online tuition for educators and learners.

This paradigm shift, from the traditional brick-and-mortar setting to integrated online digital education, included a blended education and the restructuring of teaching and learning strategies, resulted in schools exploring online education platforms for tuition. One multicultural dual-medium secondary school in the city of Mbombela served as the case study for this research of the change to integrated online digital education induced by the pandemic.

## Background

On 11 March 2020, the World Health Organisation classified the COVID-19 outbreak as a pandemic on an international level (Ghebreyesus, 2020). This pandemic had a direct impact on education internationally. In SA, in March 2020 schools were closed for an indefinite period whereafter a phased-in approach would be adopted to resume classes as from June 2020.

Already in a White Paper in 2004 on e-Education (WP7) (2004, p. 6), the Department of Basic Education envisioned embracing digital technology to transform teaching and learning for the 21<sup>st</sup> century. However, this did not happen (Matiwane, 2019). By 2020 only a few schools had tablets and/or computer rooms and teachers have not been formally trained to use technology to support their teaching efforts (Jantjies, 2020).

South African schools felt an immediate impact of restrictions to teaching and learning with the national lockdown in March 2020, including, but not limited to, the lost tuition time during the lockdown. The case study-school (cs-school), with 960 learners and 50 educators, was also disrupted and had three days to prepare a strategy to counter the inevitable reality of an initial 21-day lockdown. The quality teaching and learning of the Grade 12 learners at this school posed an extra concern and priority to the School Management Team (SMT) and the teachers. It was decided that alternative online teaching and learning strategies had to be explored and implemented as an interim solution until the school was reopened.

History wrote a new chapter for humankind. It should also be recognised that the development of Technology, Information and Communications Technology (ICT), Artificial Intelligence (AI) and the Internet rapidly expanded. According to Picker (2020), technology keeps evolving and that remote education is a new trend that must be pursued by educators as it offers an additional way of teaching and learning which cannot replace the in-person experience in a classroom but, that these two elements should rather be augmenting each other. Schools should embrace paradigm shifts and change to assist their learners to prepare themselves as global citizens and for international participation.

The Moodle website (Moodle, 2021) explains that this Moodle LMS enables anyone, anywhere and at any time globally to access learning and that students can individually remain consistently engaged. It further defines this platform as being designed to offer educators, administrators and students a safe and secure integrated system as a personalised learning environment. For this study, reference is made to an LTMS instead of an LMS owing to the education interaction between the educator/instructor, which implies the teaching part of the system, and the learner/student, which represents the learning part of the system.

Digital education should have been more seriously addressed in SA with the release of the WP7 in 2004 and it should not have waited for a pandemic to give the process momentum. The COVID-19 pandemic suddenly necessitates a change. The forced change meant there is a desperate need for innovation and training in the field of remote teaching and learning.

Richie and Lewis (cited by Nieuwenhuis, 2019, p. 57) point out that a qualitative research strategy depends on the researcher's knowledge and skills regarding his/her research paradigm, theories and methodologies that underpin the qualitative research tradition. This study was underpinned by social constructivism

combined with an interpretivism research paradigm where the researcher's subjective individual experience about the LTMS as an integrated online digital education delivery mechanism at the cs-school, was shared based on the researcher's autobiographical reflection. This was used as a basic strategy by systematically discussing the processes of implementation and maintenance of a specific digital online platform. To support the autobiographical reflection, participant observation, experience, documentation analyses and a literature study were employed.

### **The impact of COVID-19 on the national education system**

According to Osman (2021), the challenges that the South African education system faces have been highlighted by the pandemic, including disparities in digital literacy, access to devices and the Internet, as well as the inequality of education adversely affecting the poor, as well as physical and emotionally vulnerable people. The short- and long-term negative effects of the impact of COVID-19 seem to be unavoidable and could have led to the loss of about 10 years in human development in the country (Timm, 2021). Timm (2021) also opines that the continually increased dropout rate of learners in education will have a direct impact on productivity in the South African economy and, as a result, the economy where predictions show that the Gross Domestic Product (GDP) of SA could reduce to US\$2,6 billion by 2032.

With the third and fourth waves of the pandemic, there has been pressure on the DBE to act by prioritising online digital education options as practical solutions for lost teaching and learning time. Although the DBE and secondary schools used various platforms and ways to try and minimise the disruption in education caused by the COVID-19 pandemic, it is clear that learners in SA did not have equal opportunities to teaching and learning, and that many learners were negatively affected. Measures taken by the DBE and secondary schools ranged from the closure, reopening and rotation options, to try and maximise contact teaching and learning time, the skimmed and revised curricula in each subject, as well as the school-based reorganisation of content onto various platforms, which include the radio, television, zero-rated online education sites and a stable LTMS. Pre-COVID-19 initiatives, which include policies, publications, presentations and proposals to transform South African education to meet the requirements of the 21<sup>st</sup> century, also formed part of the measures taken by the DBE, although many educators and learners were not adequately equipped through these projects. Secondary schools with the same societal context in SA mirrored similar challenges. Academically, financially and emotionally, the schools were confronted to overcome the influence of this sudden impact that the pandemic had on their core function of providing effective teaching and learning.

### **The impact of the integrated online digital education system on the quality of education at the cs-school**

The cs-school succeeded in its approach to adopt a new teaching paradigm, especially where the learners were no longer solely educator-dependent with regards to teaching and learning activities (Steyn, 2013, p. 5) and provided quality education to its learners by the created learner-centred approach; good facilities, resources and

teachers; relevant curriculum and content; a productive environment; and support from the stakeholders.

According to Wolhuter et al. (2016, p. 5), schools must consider the contextual forces that impact on the future of a school to guide school leaders in formulating strategies to counter future challenges. The following particular external determinants, key to the shaping of the structure and functioning of the cs-school, were identified to prepare it for the challenges it has faced, faces and will face during the pandemic. Firstly, this cs-school had 960 learners that range from the age of 13 to 21 and 50 South African Council for Educators (SACE)-registered educators resulting in a teacher-learner ratio of about 1:33. Another aspect entails the facilities of the school that comfortably accommodated the total number of learners in normal circumstances. According to the prescribed social distancing of 1.5 m between individuals during the pandemic, this school implemented a 50% learner accommodation approach which allowed learners in Grade 8-11 to attend school every alternative day and the Grade 12 learners to attend school daily. With regards to the geographical factors, the cs-school was established in 1975 and learners who attended the cs-school mostly resided in the urban area where the school was located. However, a small number of learners lived in rural areas who needed to travel long distances daily by bus, taxi or their own transport. Most of these learners experienced clear Internet reception and proper connectivity. The few learners who lived in rural areas, as well as areas with poor reception, were challenged and restricted to the opportunity for online education during the school closure. This diverse multicultural dual-medium school with a Christian ethos comprised of at least seven race groups. Furthermore, the cs-school is classified as a quintile five school (quintile one refers to the poorest schools versus quintile five, the least poor schools) that determines its school fees according to the annual budget plan where items are prioritised to meet the educational needs of the learners. However, the impact of the COVID-19 pandemic had a negative financial impact on many of the parents/guardians of the school who previously diligently contributed to the school fees. On the technology front, the teachers and learners of the cs-school were gradually equipped and trained to use interactive boards, digital projectors, computers and software, connectivity, as well as operating the South African School Administration and Management System (SA-SAMS) and Small Area Statistics Package (SASPAC) administrative platforms. Therefore, staff and learners had already been exposed to technology in the school, which contributed positively towards the implementation of an LTMS for teaching and learning.

When the cs-school was faced with the challenge of compromising the physical teaching and learning component at school due to lockdown, their priority was to ensure that education continued. This school acted rapidly after the announcement of the President to close schools, with one goal in sight, namely, to secure teaching and learning. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was not conducted and neither were long brainstorming sessions taking place to consider the mode of education for the lockdown period impending the school. The cs-school had been offered an opportunity for a specific LTMS hosted on an external website and the system was implemented.

Since 2021, the virtual classroom has extended and accommodates endless opportunities of ICT for the educator to use successfully. One example is the LTMS

that the cs-school implemented and used to a satisfactory capacity by operating it as a successful teaching and learning tool, as well as becoming innovative by facilitating various events on the platform.

This technology on the Moodle LTMS, used by the cs-school, has even more improved and modernised functionality compared to the ICT systems that were available at the beginning of the 21<sup>st</sup> century. The Moodle administrator (who implemented, operated and maintained the system), initially trained all staff and learners to operate the LTMS and needed to continue equipping the staff in using the instance to ensure its continued operational success. This led to refresher courses being introduced and presented episodically. The administrator also kept staff informed on a WhatsApp group about newly created tutorials based on Moodle functionality on the platform.

The important advantages of emerging ICT in teaching and learning are explained by Steyn (2013, p. 5) to be the fact that learners can engage with content according to their own pace, time and in their own contextual framework in the learning process. An example of this scenario happened throughout the pandemic where the learners at the cs-school were working from home due to school closure and the rotational timetable they followed. The learners needed to engage independently with academic activity. Yeh (cited by Steyn, 2013, p. 5) explains that ICT media and tools allow the same important intellectual and emotional interaction between educators and learners in the virtual environment as in the traditional classroom. Another important advantage of the LTMS is the functionality opportunity it hosts to improve the educator–learner relationship and academic levels. Steyn (2013, p. 5) emphasises that the added value of the specific technology for teaching and learning should first be considered to ensure that it contributes positively to the teacher-learner relationship, as well as the improvement of the academic level before proceeding with the ICT system. In the case of the cs-school, such an added value calculation could not be made before the system was implemented because of the urgency of connecting teachers and learners to continue with the curriculum. Initially, this LTMS was implemented and operational as an SOS vehicle. Fortunately, the educators who optimally used and continued to use the platform during and after lockdown, benefitted academically, as well as relationally.

Apart from the above-mentioned aspects, Steyn (2013, p. 5) also refers to the feasibility and sustainability of the technology-supported project. Fortunately for this cs-school, it led to further expansion to eventually host the LTMS on a hosting site opted by the school. Therefore, the LTMS administrators of the school have sole ownership and full access and control to manage the resources and traffic (users) effectively.

For this cs-school, the effect of COVID-19 shifted their focus from the traditional brick-and-mortar teaching practices to a modernised online digital education solution. Although some individual learners were negatively affected because of their inability to access the LTMS of the school, most learners benefitted and were continually stimulated academically throughout lockdown, as well as the alternative days of non-attendance at school due to the rotational timetable. It was evident that the LTMS limited the negative impact that the COVID-19 pandemic had on education at the school and rather revolutionised the education system at the school.

## Conclusion

To encapsulate, from the trial run presented, it can be concluded that the LTMS established at the cs-school to initially combat the impact of COVID-19 on teaching and learning at the school, was found to be a successful online digital education system. The initiative of the cs-school continues to be explored as they proceed to use this platform, combined with other technologies, as a post-COVID-19 education tool. It is recommended that this LTMS can be used to improve the cs-school, as well as to raise the productivity at other schools in secondary school teaching and learning.

To summarise, a vivid example is offered in this case study as to how the negative impact of COVID-19 on South African secondary schools could be opposed by the establishment of a suitable and effective LTMS as an online digital education system. SA needs a fundamental reformation of the entire education system, which urges education specialists to look very closely at available education policies and to preserve the parts of it that further quality education, but to abandon those parts that have not, and moving on to the new normal. Technological knowledge has become a requirement for the 21<sup>st</sup>-century educator to realise Technological, Pedagogical, and Content Knowledge (TPACK), Substitution, Augmentation, Modification and Redefinition (SAMR) and Critical thinking, Collaboration, Creativity and Communication (4C) teaching and learning models effectively, which is now more than ever a crucial part of everyday educational practice. This implies that educators should integrate the real world into an online digital world that prepares South African learners for the critical skills required by the workplace. With regard to Comparative and International Education as a field scholarship, the establishing modes of context-appropriate online digital education should be placed on the research agenda.

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