A shift in epistemological beliefs and practices during the Covid-19 pandemic: curriculum recovery plan implementation

Mbali Mabaso* & Devika Naidoo

Department of Education and Curriculum Studies, University of Johannesburg, Johannesburg, Republic of South Africa
*Corresponding author: mmabaso27@gmail.com

Abstract

Research on epistemological beliefs has been a prominent focal area of study across the globe. Perry, who did the earliest research on this topic, defined epistemological beliefs as an individual's assumptions about the nature of knowledge, its boundaries, its accuracy, and its acquisition and emphasised its relevance in classroom practices. Business Studies literature on epistemological beliefs is scarce, particularly in South Africa. Given the current Coronavirus Disease (COVID-19) pandemic, the government has implemented a curriculum recovery plan (CRP) that prioritises the restoration of learning lost in the 2020 academic year. The primary objective was to investigate participants' epistemological beliefs and practices in relation to the Business Studies CRP. The data was obtained from 13 purposively selected participants through the methods of document analysis, semi-structured interviews, and classroom observations. The findings of this study indicated that the crisis conditions did shift participants' epistemological beliefs and practices. The participants accepted to remove topics that were redundant and deterrent to future careers. The teachers' pedagogical practices experienced transformation, with the implementation of novel teaching methodologies. The findings also suggest that the study participants learned to construct and use creative assessment methods like baseline activities to identify learning gaps and interactive quizzes to test knowledge acquisition.

Keywords: Business Studies Curriculum Recovery Plan, COVID-19 pandemic, Epistemological belief, Trimming and Reorganisation.

Introduction

In the current era of uncertainty great premium is placed on knowledge transfer to novel situations, and many researchers have given much attention to the notion of epistemological beliefs (Peffer and Ramezani, 2019). The term "epistemology" originates from the Greek word "epistémé," and its use has been accompanied by a wide range of definitions in literature. According to Ancient Greek philosophy (Topdemir, 2008 cited in Aslan, 2017, 38) epistémé is "knowledge that is correct, scientific, and necessary." Psychologists define epistemology as personal epistemology to address individual's set of general beliefs about the nature of knowledge and knowing, "how knowledge is constructed, how knowledge is evaluated, where knowledge resides, and how knowing occurs (Hofer, 2004, p.4)." In philosophy, epistemology involves knowledge and embodies a certain understanding of what is entailed in knowing, which represents how we know what we know (Crotty, 1998; Mori, 1999). Recent literature has broadened the 'epistemological beliefs' framework by incorporating concepts regarding the essence of knowledge and the process of its acquisition (Schommer, 1994; Saeed, Reza & Momene, 2013).

In light of the present global health crisis caused by the COVID-19, there has been a flurry of new research examining the epistemological views of teachers in relation to content, instruction, and student learning. McPherson and Pearce (2022) studied the epistemological beliefs of ten Canadian secondary school teachers in response to the global pandemic. Teachers' professional growth was seen in a collaborative professional learning group to improve online instruction. The results indicate that educators' teaching strategies changed as they involved

students in concurrent collaborative projects and experiments and developed new formative and final assessment processes. Hanson's (2020) study examined how US and Asian primary and secondary school teachers adapt to change during the pandemic. The findings show that contextual and cultural factors influence teachers' epistemological beliefs, particularly those linked to knowledge certainty and learning attempts. Different cultures have stable, innate or fixed ability and criticizing authority characteristics. Teacher assessments of their school's growth mindset correlated positively with their self-reports of innate or fixed ability.

Villanueva and Eacersall (2021) investigated how subject-specific epistemic beliefs affect history and science teacher's inquiry-based learning adaption. The finding revealed the complexity of teachers' epistemological beliefs and the need for a sophisticated method to extract them within task engagement. Most of the recent studies focused on teaching as the main educational activity that changed people's perspectives and required the most changes. Few studies have examined how the COVID-19 pandemic affected the epistemological views of various educational stakeholders concerning curriculum, instruction, and assessment. This study examines curriculum designers, subject advisors, principals, departmental heads, and teachers' epistemological beliefs about curriculum, teaching, and assessment concepts. Researchers hoped to find out whether participants' epistemological beliefs and practices shifted during the COVID-19 pandemic as the Business Studies CRP was being implemented.

Research Question

The paper was informed by the next question:

•   How have the epistemological beliefs and practices of curriculum designers, subject advisors, principals, departmental heads, and teachers shifted during COVID-19 pandemic?

Literature review

Epistemological beliefs background

Epistemological beliefs refer to an individual's underlying beliefs about the nature of knowledge, knowledge acquisition and limits of knowledge (Mohamed and El-Habbal, 2013). Yilmaz and Sahin (2011) state that the notion of epistemological beliefs was first introduced by Perry (1968) and later developed by Schommer (1990) into five dimensions. The dimensions covered in this framework are as follows: the level of certainty associated with knowledge, which can range from absolute certainty to a more tentative nature; the structure of knowledge, which can vary from simple to complex; the source of knowledge, which can be derived either from authority or through reasoning; the control of knowledge, which can either be fixed at birth or subject to change; and the speed at which knowledge is acquired, which can range from rapid acquisition to a gradual process.

Fishbein and Ajzen (1975) cited in Bahçivan (2016, p.223) define the term "belief" as a person's subjective probability judgments concerning some discriminable aspects of his world; they deal with the person's understanding of himself and his environment." Epistemological beliefs refer to an individual's underlying beliefs about the nature of knowledge, knowledge acquisition and limits of knowledge (Mohamed and El-Habbal, 2013). According to Schommer (1994), the theories put forth suggest that epistemological beliefs can be positioned on a continuum, ranging from less developed or naive beliefs to more advanced and sophisticated beliefs. Naïve epistemologies are characterised by the belief that knowledge is static and immutable. Individuals who hold the perspective that knowledge is complex, characterised by uncertainty and subject to revision lean more towards advanced sophisticated epistemological beliefs. Schommer (1994) contends that individuals actively construct knowledge.

Numerous epistemological belief studies have been conducted in the field of literature, spanning various samples including, pre-service teachers, and students (Epler, 2011). Ekinci (2017) examined lower-secondary education teachers' epistemological ideas and teaching and learning judgements. This study found that teachers believed in "expert knowledge" and "learning

effort". Their beliefs in the inborn sub-dimension were moderate, while their beliefs in the "certainty of knowledge" sub-dimension were low. While educators favour constructivism, they also favour traditional methods. Teachers mostly use constructivist teaching methods, but also have a keen interest in traditional approaches. In a study conducted by Botha (2013) in South Africa, the primary objective was to examine the influence of principals' shifts in assumptions regarding knowledge on their leadership styles. The results of this study show confirmation of the correlation between basic epistemological beliefs and beliefs on leadership practices among school principals in South Africa. Additionally, these findings offer significant rationale for the utilisation of epistemological beliefs in studying the practice of school leadership.

Koutsianou and Emvalotis (2021) studied 15 Greek primary school teachers' adaptation to the pandemic. This study investigates how subject-specific epistemic beliefs affect teachers' inquiry-based learning understanding in history and science. The finding of this study revealed the complexity of educators' epistemic beliefs and the need for a sophisticated method to extract them within task engagement. The studies mentioned above demonstrate a strong consensus about the actions taken by education stakeholders and/or their respective schools in response to the crisis, as well as the subsequent transformation of their epistemological beliefs. The studies highlighted the impact on educational practices, including the transition of learning activities from physical to virtual platforms, the challenges posed by conflicting work-life balances that exposed pre-existing disparities, and the resultant changes that transpired throughout this period. Most of these research studies centred their attention on teaching as the primary educational activity that facilitated the transformation of individuals' ideas and necessitated the greatest number of adjustments. The current circumstances have triggered a transformation in the framework of knowledge. Both teaching and research activities were found to generate stress and strains due to changed working patterns and increased number of hours. There were further perceptions suggesting that educators in underdeveloped nations may have encountered a more intricate encounter because of the global health crisis, or that the pandemic may have exerted differential impacts on academic disciplines.

The Curriculum Recovery Plan overview

The global school closures to prevent COVID-19 transmission resulted in a significant drop in educational attainment. The World Bank, UNICEF, and UNESCO created "Recovering Education 2021" that aimed to (1) provide universal access to education for all children, (2) address and resolve educational issues, and (3) train and support teachers (UNICEF, 2021). The Department of Basic Education (DBE) released a document entitled "Draft Framework for Curriculum Recovery," denoted as the Curriculum Recovery Plan (CRP), according to Amin and Mahabeer (2021). In this paper, we refer to the CRP as the "Business Studies CRP" to accurately represent the field of study being examined. Business Studies CRP aimed at reducing learning loss and future setbacks (DBE, 2020). The DBE has implemented curriculum trimming and restructuring to balance time and instructional load (Hoadley, 2023). DBE implemented temporary CAPS modifications while policy revisions are under discussion.

As per the findings of DBE (2020), a reduction of 25% was implemented in the curriculum. Nevertheless, it was expected that schools would be able to cover 75% of the prescribed curriculum during the 2020 academic year. The remaining 25% of material, knowledge, and abilities that could not be addressed due to the restructured 2021 curriculum were therefore allocated to a two-year recovery period spanning 2020 and 2021. Nevertheless, the measures for recovery conveyed by the DBE in the CRP prompted education stakeholders to adjust to the new educational environment and adopt new ways to their work during the COVID-19 pandemic, thus impacting their epistemological beliefs.

Theoretical framework

The present study utilises the theoretical framework proposed by Charland, Deslandes Martineau, Gadais, Arvisais, Turgeon, Vinuesa and Cyr (2021) on crisis continuum phases, along with Perry's (1970) paradigm for analysing

epistemological beliefs. This framework serves as a conceptual lens through which the interactions and responses of teachers, departmental heads, principals, subject advisors, and curriculum designers in the implementation of Business Studies CRP during the COVID-19 pandemic are examined. Charland et al. (2021) propose that education sectors experiencing a crisis will undergo a series of five phases within the crisis continuum.
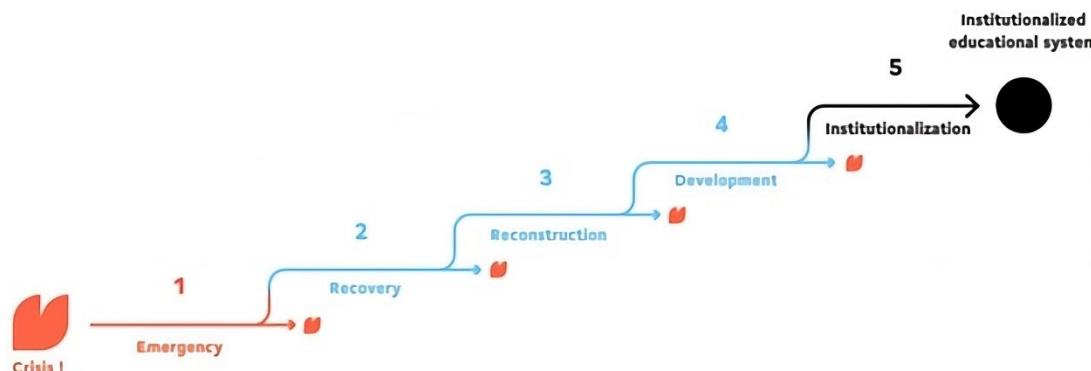

Figure 1: Crisis continuum (Charland et al. 2021, p.315)

The initial phase, referred to as the "Emergency" stage, underscores the necessity for prompt and incremental interventions during this period. While these interventions may not be explicitly outlined in a formal response plan, their primary objective is to mitigate the adverse effects of the crisis. The next phase, referred to as "Recovery," encompasses the endeavour to restore the capacity of both the state and local communities to recuperate from the crisis. This entails the reconstruction of their organisational frameworks to overcome the challenges faced and mitigate the likelihood of future recurrences. The phase commonly referred to as "Reconstruction" entails the process of reinstating the state to its pre-crisis condition, which necessitates a greater degree of institutionalised engagement. The fourth phase, known as "Development," encompasses the comprehensive restructuring of the macroeconomic, social, and cultural framework of a country or region. The final stage, referred to as institutionalisation, encompasses the progression of developing, formalising, maintaining, and obtaining social validation for systems inside a certain country. The current investigation is placed inside the recovery phase of the crisis continuum.

Developmental Epistemological Beliefs: Core Beliefs about Knowing

To successfully encourage meaningful learning, existing literature indicates that teachers should also have their own unique set of beliefs.

According to Shaver (1992), people's views on how knowledge is constructed and obtained are known as epistemological beliefs. Roberts, Baker and Goossen (2016, p.173) asserted that Perry (1970) formulated an epistemic continuum consisting of four main positions: "(a) dualism; (b) multiplism; (c) relativism; and (d) relativism commitment." According to Perry (1970), dualism was the most basic assumption one could make when clinging to epistemological issues, and it is still widely accepted today. The world is often seen as having two extremes by those who hold this theoretical perspective. Proponents of a dualistic understanding of knowing argue that one can be taught the existence of absolute truths (good and wrong) by someone in a position of authority. Hard effort and submission to authority are the only paths to success, according to many dualistic advocates.

Upon adopting a multiplistic perspective on knowledge, humans recognise that certain things cannot be understood with perfect certainty, along with absolute truths. Knowing includes both subjective experiences and objective facts, according to these people. Truths and personal views are still seen as "right" or "wrong," but they depend less on authority for definitive facts. Relativism refers to the philosophical belief that truth and morality are subjective and dependent on individual perspectives or cultural norms. Perry (1970) argued that significant transformation had occurred in the individual within this domain.

Knowledge has evolved into a more nuanced and intricate form. As an individual acquires more knowledge about a certain topic, their viewpoint on that topic may be altered, providing them with a fresh and different understanding. This also facilitated the concept that anything is not inherently good or terrible, but rather one solution is superior or inferior to another solution. Metacognition, which refers to the act of reflecting on one's own thought processes, seems to be evident throughout this stage. Goldberger (1996) acknowledged that relativistic ways of knowing may not be suitable in particular cultures. However, she argued for the superiority of these developmental goals within the American environment, which embraces different viewpoints of knowing. Similarly, one could argue that it is necessary to be cognizant of and contemplate other viewpoints in an increasingly diverse global society. At the ultimate stages of commitment, there is still a presence of relativism thinking. However, specific beliefs are now given more importance and are embraced in an adaptable manner.

Extensive research conducted over the last four decades (Johnson, 1994; Brownlee, Boulton-Lewis and Purdie, 2002; Roberts, Baker and Goossen, 2016) has offered substantial evidence in favour of the four main epistemological stances suggested by (Perry, 1970). The developmental epistemological beliefs paradigm offered a valuable framework for analysing the shifts in epistemological beliefs and practices as education stakeholders reconceptualised their professional approaches during the COVID-19 pandemic, a period characterised by substantial stress and upheaval. Within the framework of developmental epistemological beliefs, the study participants' replies were examined to how their professional obligations within educational communities changed over time.

Methods

The qualitative research approach was suitable for this study since it required "studying things as they exist, rather than contriving artificial situations or experiments (Lichtman, 2013, p.20)." The qualitative approach allows research participants to communicate their thoughts and experiences in their own words (Cleland, 2017). Qualitative research is interpretive because researchers must interpret data to find meanings (Aspers and Corte, 2019). To understand the Business Studies CRP's implementation during the COVID-19 pandemic, the study used a multiple case study design investigating three Gauteng secondary schools.

Sample and sampling technique

The study selected participants and sites using purposive sampling. DBE officials were represented in the study by two curriculum designers (C1 and C2) and two district subject advisors (S1 and S2). P1, P2, and P3 were from public and private high school principals. The study included three departmental heads (D1, D2, and D3), two from public and one from private secondary schools, and three grade 10 teachers (T1 and T2) from public secondary schools and (T3) from a private secondary school.

Table 1: Biographical information of the DBE officials

Site	Occupation	Gender	Qualification	Experience
National Office	Curriculum Designer (C1)	F	Masters in inclusive education	**10 years**
National Office	Curriculum Designer (C2)	F	Honors in leadership and management	**15 years**
Provincial office	Subject Advisor (S1)	M	Masters in leadership and management	**12 years**
Provincial office	Subject Advisor (S2)	F	Masters in Curriculum studies	**8 years**

Table 2: Biographical information of the school-level participants

School	Occupation	Gender	Qualifications	Experience In position
School X	Principal (P1)	M	Honors in Leadership and Management	10 years
School Y	Principal (P2)	F	Masters in Curriculum Studies	7 years
School Z	Principal (P3)	M	honors in Financial Management	8 years
School X	Departmental Head (D1)	M	Honors in Leadership and Management	8 years
School Y	Departmental Head (D2)	F	Bachelor of Education degree	12 years
School Z	Departmental Head (D3)	F	Bachelor of Commercial Accounting	6 years
School X	Teacher (T1)	M	honors in Inclusive Education	29 years
School Y	Teacher (T2)	F	Masters in Curriculum Studies	10 years
School Z	Teacher (T3)	F	Post Graduate Certificate in Education (PGCE)	5 years

Three mainstream secondary schools (School X, School Y, and School Z) were purposefully chosen as research locations. Both School X and School Y are classified as public secondary schools, and both implement the CAPS curriculum. School Z is classified as an independent private school also implementing CAPS. The purpose of the secondary school selection process was not to compare the implementation of Business Studies CRP across two distinct systems at both private and public schools. Instead of this, we selected three distinct schools to guarantee the applicability of the findings in a variety of contexts. Therefore, the reliability of the results obtained from examining three sites would be greater than that of examining equivalent mono-sites (Joskin, 2013). Although all three schools offer Business Studies to learners in grades 10-12, technological differences cause variations in their instruction and assessment approaches.

Data collection methods

This study used document analysis, semi-structured interviews, and classroom observations as its three main methods of data gathering.

According to Fusch, Fusch, and Ness (2018), combining data from several sources into a single interpretation is known as triangulation or multiple data gathering methods. Triangulation approach is used in the present study to increase the reliability and validity of the results.

Data analysis

The Braun and Clarke (2006) thematic analysis method was used to discover, structure, and explain data themes. We used Braun and Clark (2006)'s six stages. First, audited audio was transcribed. Second, we encoded data on a themed map using pattern recognition. Thematic maps showed the study's main themes, subthemes, and relationships. Braun and Clarke (2012) describe themes as significant pieces of data that relate to the study topic and show a structured pattern or meaning. Third, we categorised the codes into three groups. Fourth, we compared extracted themes to coded data and the complete dataset. Fifth, we compared themes to facts and assessed their compatibility. Outdated codes were removed. Themes were systematically rearranged to understand the data and its relationship to the underlying study problem. We also gave the three

themes titles and thorough descriptions based on their properties. Lastly, we wrote an article that responds to the primary inquiry of the study.

Research Ethics

The study followed ethical guidelines. An ethical clearance certificate from the university's Ethics Committee and a permission letter to gather school data from the Department of Basic Education were obtained. Principals authorised school data collection. The study offered confidentiality, anonymity, and voluntary participation. Participants were notified of their freedom to withdraw at their discretion. No negative impacts, injuries, or COVID-19 transmission were recorded among the study participants. All interviews and observations done during the COVID-19 pandemic adhered to the safety guidelines set by the WHO. After being informed of the study's purpose and procedures, all participants willingly participated in interviews and observations.

Results

In this study, the researchers tried to examine how the epistemological beliefs and practices of curriculum designers, subject advisors, principals, DHs, and teachers shifted during COVID-19 pandemic.

An Epistemological Shift in Curriculum

Data analysis indicates that study participants had optimistic attitudes on how their views on curriculum, pedagogy, and examinations have changed because of the COVID-19 pandemic. Participants agreed that the removal of less-critical topics from the grade ten Business Studies curriculum as outlined in the revised annual teaching plans represents a significant change from the status quo. As an example, Participant C1 stated:

> *"The current crisis made me realise that curriculum across subjects needed transformation. Trimming the content in the curriculum had to be done. Before the advent the curriculum still contained outdated knowledge. The outbreak pushed us to redefine valuable knowledge across subjects.*

> *Fundamental knowledge about the current crisis needed to be included in the Business Studies CRP. All irrelevant knowledge not leading to grade 12 and no longer serving the business world needed to be removed. Drastic decisions based on assessments needed to be made as well to respond to crisis challenges."*

S1 agreed with this viewpoint as well:

> *"This era taught me that teaching practices and curriculum evolve, and we also need to adapt. The crisis forced us to redesign the curriculum and, in the process, we trimmed nonessential topics and reworked the assessment plan across grades. As curriculum designers, we engaged in processes of deciding on which knowledge deemed valuable to be included in the curriculum, and that changed how I perceive knowledge (S1)."*

The claims above suggest that the times of crisis resulted in a discernible shift in the epistemological views held by the curriculum designers and subject advisors. Redesigning the curriculum was deemed necessary. At the outset, there was a dominant belief that the deliberate exclusion of topics from the curriculum was acceptable. The removed topics "Business locations, Contracts, Entrepreneurial qualities, and Self-management" were considered unnecessary, incapable of promoting conceptual growth, inconsistent with the intended course of study, and improbable to benefit future professional endeavours. Also, it is noteworthy to mention that a selected group of DHs and teachers held favourable views regarding the elimination of specific subjects from the Business Studies curriculum. Teachers consider the practice of trimming to be consistent with the needs of the current cohort of learners, whose learning routine was disturbed in 2020, when rotational attendance was followed. T1 summarised the benefits of the matter in detail.

> *"In my opinion, the process of trimming, particularly in grade 10, was*

far overdue. I believe, the inclusion of the topic of "self-management" in the Business Studies curriculum was unnecessary, given that Life Orientation already covers the subject of self-appraisal for learners. The adoption of a reduced curriculum is advantageous in the present time, given the number of issues that have arisen because of the ongoing pandemic and the type of learners we are teaching."

Curriculum trimming has helped teachers prioritise important topics and eliminate unnecessary information. Identifying the knowledge that Business Studies learners need to succeed in a changing environment was crucial. Most participants agreed that the eliminated topics were overdue for exclusion. By analysing the viewpoints of the participants, it is possible to deduce that the participants have, for the first time, given their approval and acceptance of the revised curriculum.

An Epistemological Shift in Beliefs Regarding Teaching and Learning

Participants mentioned COVID-19 prompted them to adapt to global educational trends. Teachers described the shift in epistemological beliefs about teaching practices below:

T2 stated:

"I discovered blended learning was feasible. I used to think only printed notes helped learners develop, but the COVID-19 pandemic taught me that technology was necessary in class. When physical attendance resumed, I started using the smartboard to creatively enhance my lessons, and learners liked the educational videos I used to introduce new topics. I had to change my teaching style to motivate demotivated learners."

T3 agreed:

"My teaching methods have undergone a shift. Traditional classroom teaching is no longer my only method. I can now teach online and in person, which I

never thought possible before Covid-19. Since the learners have smartphones, I incorporated them into my lessons. I share some activities in the class WhatsApp group and permit learners to use phones to contact me during school holidays. Online and in-class teaching helped me cover the syllabus quickly for revision."

COVID-19 increased participants' technology use, according to data analysis. Teachers used modern interactive pedagogies to enhance lessons and engage learners.

A Shift in Beliefs Regarding Assessments

Study participants felt that COVID-19 changed their assessment epistemology. Teachers allegedly used inventive methods to measure learning results. T3 indicated she created baseline activities for each topic to identify her learners' knowledge gaps and support needs. T2 stated:

"I learned to conduct informal assessments using various methods. I now construct and administer interactive quizzes to assess learner understanding and remembering. Interactive quizzes and exercises captivated my learners' interest and encouraged participation."

Classroom observations supported the interview findings. To illustrate, T2 gave a brief quiz on "Quality" in grade 10 Business Studies. This is explained next:

"T2: Learners, look at the quiz slide. I will read the question and supply potential responses. Your task is to provide me with the correct answer in letters. Which of the following options provides the most accurate description of the concept of quality? (a) Consumer care before, during, and after purchase (b) High-quality products that fulfil consumer expectations, (c) High productivity.

L1 - Ma'am, I suppose C

T2 - Incorrect, read the question carefully. Anyone with a different answer?

L2 - Option B. Madam

L3 - I agree, B is right since it represents the definition of quality, which we learned earlier in the chapter.

T2 - Excellent! Now listen to the next question. Who must be happy with product quality? (a) Competitors, (b) Suppliers, (c)Customers.

Class: The customers Ma'am

T: Correct! One last question before leaving. Which is frequently true for low-quality products? (a) They are in demand, (b) They fail to match customer expectations (c) They are pricey. Share your answers on class WhatsApp."

T2 used interactive quizzes to informally assess learners during instruction. The teacher asked questions, and the learners answered collectively. If the teacher was not satisfied, classmates were asked for another choice. Full class discussions kept the learners active. The excerpt shows the creative method employed to assess content.

Furthermore, analyses showed that participants had different views about cancelling high-stakes examinations and its effects on learners. Some participants said, "The elimination of June exams presents a favourable opportunity for increasing instructional time (T1)." Others said this choice "may have a detrimental impact on the overall quality of education (D1)." This move allows "teachers to create substandard tests, as they will solely evaluate the subject content, they have covered (P3)" instead of assessing grade-level understanding. D3 illustrates the issue.

> *"The significance of June exams lies in the production of high-quality external examination papers, which necessitate learners to go beyond mere memorization and instead apply*

learned knowledge. These exams serve to motivate teachers to uphold the standards of their respective subjects. Presently, the control tests designed internally mostly assess the content that the teacher covered in that term, rather than assess significant knowledge of the subject. In my opinion, the administration of June exams is imperative even during this period of recovery."

This viewpoint concurs with another participant who emphasised the importance of integrating high-stakes exam writing during the current pandemic.

> *"The June and November examinations are significant as they provide learners with the opportunity to be assessed on the knowledge that is deemed crucial for the subject. Therefore, learners have the chance to deepen their knowledge in specific subjects (P3)."*

While D2 underscored:

> *"The high-stakes exams are crucial and need thorough teaching. Assessment-based teaching becomes more challenging due to the inherent difficulty in knowing what will be assessed, therefore teachers are forced to teach all the prescribed topics."*

The responses above illustrate that study participants emphasised the importance of such examinations for promoting high-quality education and overall development. During the COVID-19 pandemic, participants strived to improve the style of setting tests and generated quality control test papers. D3 claimed:

> *"The directive to create an internally developed control test motivated me to participate to collaborate with other members of the SMT to assess the quality of tests created by teachers across subject areas. To enhance our understanding of assessments in the current situation, we actively participated in workshops that were specifically designed to explore this*

subject of assessments. This encounter afforded me invaluable insights into a wide range of assessment approaches."

Despite dissatisfaction with the cancellation of June assessments, study participants made strategic alterations and focused on improving their practices. This change was made to ensure high-quality exams in schools during the COVID-19 pandemic.

Discussion

As stated by DBE (2020, p.7), "teachers will use this time to sharpen their content and pedagogical knowledge." The findings of this study, obtained through interviews and observations conducted under a crisis, demonstrate that participants' epistemic beliefs and practices were transformed due to the COVID-19 pandemic. Relativists argue that knowledge is neither transmitted over generations nor determined by most viewpoints. Instead, it is contingent upon the specific conditions in which it is obtained (Perry, 1970). This study provides evidence that participants' individual epistemological views, particularly their understanding of knowledge and efforts in learning, are influenced by contextual and cultural circumstances, in contrast to classic dualist epistemologies (Hanson, 2020). Participants acknowledge that it was considered appropriate to choose to remove parts of the curriculum that were thought redundant, impeding conceptual advancement, not aligned with the specified content plan, and not expected to be beneficial for future employment opportunities. In their research, Muller and Young (2019) elucidate the theoretical process by which the curriculum determines and arranges knowledge. They contend that a robust subject framework is essential when selecting powerful knowledge for the curriculum.

McPherson and Pearce (2022) concur with the second finding of this study, which states that teachers' beliefs about teaching underwent a significant change during the COVID-19 pandemic. The teachers in their study devised innovative pedagogical approaches to demonstrate science experiments virtually. The teachers recorded the trials at home and sent the recordings to the learners on online learning platforms. Similar to Canadian teachers, the participants in this study actively engaged in self-development to enhance their teaching approaches to better adapt to the crisis situation. This supports the findings of Cerna (2013) that policy changes often lead to changes in the viewpoints of both the educators responsible for implementing the policy and the policy designers themselves. The study's conclusion indicated that the participants' epistemological assumptions regarding assessments transformed. The teachers acquired the ability to create and employ innovative assessment techniques to gauge the extent of knowledge acquisition. Business Studies teachers during the pandemic utilised baseline activities to identify learning gaps and employed interactive quizzes.

Another finding indicated that initially, participants expressed opposition to the cancellation of June examinations due to worries about the rigour and integrity of the assessments. However, they successfully adapted their strategy and committed themselves to creating high-quality assessments for school management throughout the whole pandemic period. This study supports the assertion made by Engestrom and Sannino (2010) that the presence of disagreement often stimulates the process of investigation and learning. Kidson, Lipscombe and Tindall-Ford (2020) observed that while facing challenging conditions, teachers and educational leaders displayed a higher level of openness to embracing Schommer's (1994) more complex and refined epistemological ideas. Participants exhibited a greater inclination towards the viewpoint that knowledge is intricate, marked by uncertainty, and open to modification.

Conclusion

The curriculum had its initial revision amidst a crisis and was then accepted by teachers and the management of schools. Due to the COVID-19 pandemic, teachers adapted their teaching methodologies by integrating technology

both inside and outside the classroom. Participants also committed themselves to adapting and refocusing their efforts towards creating high-quality tests administered in their schools during the pandemic. Multiple studies have shown that the education sector was severely impacted by the COVID-19 pandemic. Nevertheless, the current study revealed that the pandemic also resulted in substantial alterations in the professional practices of the research participants. This study addresses the lack of knowledge in the South African literature by providing empirical evidence on a topic that has received little attention in the field of Business Studies: the epistemological beliefs of school managers and teachers as they navigate times of crisis.

Acknowledgement

ORCID

Mabaso M https://orcid.org/0000-0002-7305-9199

Naidoo D https://orcid.org/0000-0001-7725-0540

References

South Africa. Prospects 51, no. 1-3 (2021): 489-501. https://doi.org/10.1007/s11125-021-09564-8.

Aslan, C. (2017). Examining epistemological beliefs of teacher candidates according to various variables". Eurasian Journal of Educational Research, 16(67).

Aspers, P., & U. Corte. (2019). What is qualitative in qualitative research? Qualitative Sociology, 42, pp.139-160. https://doi.org/10.1007/s11133-019-9413-7.

Bahçivan, E. (2016). Investigating the relationships among PSTs' teaching beliefs: are epistemological beliefs central? Educational Studies, 42(2), pp.221-238.:

http://dx.doi.org/10.1080/03055698.2016.1160823

Botha, R. J. (2013). Epistemological beliefs and leadership approaches among South African school principals. Educational Studies, 39(4), 431-443.

Brownlee, J., G. Boulton-Lewis, & N. Purdie. (2002). Core beliefs about knowing and peripheral beliefs about learning: Developing a holistic conceptualisation of epistemological beliefs. Australian Journal of Educational and Developmental Psychology, 2, pp.1-16.

Cerna, L. (2013). The nature of policy change and implementation: A review of different theoretical approaches. Organisation for Economic Cooperation and Development (OECD) report, pp.492-502.

Charland, P., M. Deslandes Martineau, T. Gadais, O. Arvisais, N. Turgeon, V. Vinuesa, & S. Cyr. (2021). Curriculum response to the crisis. Prospects (2021) 51:313–330

https://doi.org/10.1007/s11125-020-09526-6.

Cleland, J. A. (2017). The qualitative orientation in medical education research. Korean journal of medical education, 29(2), 61. https://doi.org/10.3946/kjme.2017.53

Clum, K., L. Ebersole, D. Wicks, & M. Shea. (2022). A Case Study Approach to Exploring Resilient Pedagogy During Times of Crisis. Online Learning, 26(2), pp.323-342. https://doi.org/10.24059/olj.v26i2.2695

Crotty, M. (1998). The foundations of social science research: meaning and perspective in the research process, New South Wales, Allen and Uwin.

DBE (Department of Basic Education). (2020). A draft framework for curriculum recovery post-COVID-19. Pretoria: Government Printer.

Ekinci, N. (2017). Examining the relationships between epistemological beliefs and

teaching and learning conceptions of lower-secondary education teachers. İnönü University Journal of the Faculty of Education. Vol 18, No 1, 2017 pp. 344-358 DOI: 10.17679/inuefd.307065.

Epler, C. M. (2011). The relationship between implicit theories of intelligence, epistemological Beliefs, and the Teaching Practices of In-service Teachers: A Mixed Methods Study. (Doctoral dissertation, Virginia Tech).

Haleem, A., M. Javaid, M. A. Qadri, & R. Suman. (2022). Understanding the role of digital technologies in education: A review. Sustainable Operations and Computers. 3, 275-285.http://www.keaipublishing.com/en/journals/sustainable-operations-and-computers.

Hanson, J. L. (2020). Testing the Relationship Between Teachers' Epistemological Beliefs (EB) and a Faculty's School Growth Mindset: Inter-cultural Comparison of EB Between East and West. Journal of Organizational Psychology 20, no. 4: 30-54.

Hoadley, U. (2020). Schools in the time of COVID-19: Impacts of the pandemic on curriculum. Resep Non-Economic Working Paper, Stellenbosch University.

Hofer, B. K. (2001). Personal epistemology research: Implications for learning and teaching. Educational Psychology Review, 13(4), 353-383. https://doi.org/10.1023/A:1011965830686.

Hofer, B.K. (2004). Exploring the dimensions of personal epistemology in differing classroom contexts: Student interpretations during the first year of college. Contemporary educational psychology, 29(2), pp.129-163. https://doi.org/10.1016/j.cedpsych.2004.01.002.

Johnson, D.D. (1994). Dualistic, multiplistic, and relativistic thinking as it relates to a psychology major.

Joskin, A.M. (2013). Investigating the implementation process of a curriculum: A case study from Papua New Guinea (Doctoral dissertation, Open Access Te Herenga Waka-Victoria University of Wellington)".

Kidson, P., K. Lipscombe, & S.K. Tindall-Ford. (2020). Co-designing educational policy: Professional voice and policy making post-COVID. Faculty of Arts, Social Sciences and Humanities - Papers.346. https://ro.uow.edu.au/asshpapers/346.

Koutsianou, A., & A. Emvalotis. (2021). Unravelling the Interplay of Primary School Teachers' Topic-Specific Epistemic Beliefs and Their Conceptions of Inquiry-Based Learning in History and Science. Frontline Learning Research, 9(4), 35-75. https://doi.org/10.14786/flr.v9i4.777

Lin, Q., & Y. Luo. (2023). Review on the conceptual framework of teacher resilience. Front. Psychol. 14:1179984. https://doi: 10.3389/fpsyg.2023.1179984.

Luft, J. A., & G.H. Roehrig. (2007). Capturing science teachers' epistemological beliefs: The development of the teacher beliefs interview. The Electronic Journal for Research in Science & Mathematics Education. (Southwestern University) http://ejse.southwestern.edu.

McPherson, H., & R. Pearce. (2022). The shifting educational landscape: science teachers' practice during the COVID-19 pandemic through an activity theory lens. Disciplinary and Interdisciplinary Science Education Research, 4(1), pp.1-13. https://doi.org/10.1186/s43031-022-00061-2.

Mihic, M., & Zavrski, I. (2017). Professors' and students' perception of the advantages and disadvantages of project based

learning. Int. J. Eng. Educ, 33(6), 1737-1750.

Mori, Y. (1999). Epistemological beliefs and language learning beliefs: What do language learners believe about their learning? Language learning 49, no. 3: 377-415. https://doi.org/10.1111/0023-8333.00094.

Mohamed, M. T., & El-Habbal, M. (2013). The relationship between epistemic beliefs and academic performance: Are better students always more mature?. Journal of Educational and Developmental Psychology, 3(1), 158.

Mpungose, C. B. (2021). Reconceptualising the Physical Sciences Curriculum and Assessment Policy Statement in a South African Context. International Journal of Higher Education, 10(2), 116-127. https://doi.org/10.5430/ijhe.v10n2p116.

Muller, J., & Young, M. (2019). Knowledge, power and powerful knowledge re-visited. The Curriculum Journal, 30(2), 196-214.

Ong, P. (2020). COVID-19 and the Digital Divide in Virtual Learning, Fall 2020. UCLA Center for Neighborhood Knowledge. https://escholarship.org/uc/item/07g5r00 2.

Peffer, M.E., & N. Ramezani. (2019). Assessing epistemological beliefs of experts and novices via practices in authentic science inquiry. International Journal of STEM Education, 6, pp.1-23. https://doi.org/10.1186/s40594-018-0157-9.

Pulmones, R. (2010). Linking Students' Epistemological Beliefs with Their Metacognition in a Chemistry Classroom. Asia-Pacific Education Researcher (De La Salle University Manila), 19(1). https://doi.org/10.3860/taper.v19i1.1514.

Quansah, F. (2018). Traditional or performance assessment: What is the right way to assessing learners. Research on Humanities and Social Sciences, 8(1), 21-24

Roots, E. (2007). Making connections: The relationship between epistemology and research methods. Special Edition Papers, 19(1), 19-27.

Rudman, R. J. (2021). Understanding the unintended consequences of online teaching. South African Journal. https://hdl.handle.net/10520/ejc-high_v35_n4_a1.

Sandoval, W. A. (2005). Understanding students' practical epistemologies and their influence on learning through inquiry. Science education, 89(4), pp.634-656. https://doi.org/10.1002/sce.20065.

Sayed, Y., M. Singh, E. Bulgrin, M. Henry, D. Williams, M. Metcalfe, & G. Mindano. (2021). Teacher support, preparedness and resilience during times of crises and uncertainty: COVID-19 and education in the Global South. Journal of Education (University of KwaZulu-Natal), (84), 125-154. http://dx.doi.org/10.17159/2520-9868/i84a07.

Schommer, M. (1994). Synthesizing Epistemological Belief Research: Tentative Understandings and Provocative Confusions. Educational Psychology Review 6, no. 4 (1994): 293-319. https://doi.org/10.1007/bf02213418.

Soudien, C. (2020). Systemic shock: how Covid-19 exposes our learning challenges in education. Southern African Review of Education. 26(1):6-19. http://hdl.handle.net/20.500.11910/1537 7.

Tolhurst, D. (2007). The influence of learning environments on students' epistemological beliefs and learning outcomes. Teaching in Higher Education, 12(2), pp.219-233.

United Nations Children's Fund (UNICEF). (2021). Learners in South Africa up to

one school year behind where they should be. https://www.unicef.org/press-releases/learners-south-africa-one-schoolyear-behind-where-they-should-be.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2020). COVID-19 Educational Disruption and Response. Accessed April 11, 2020 at https://en.unesco.org/covid19/educationresponse.

Viennet, R., & B. Pont. (2017). Education policy implementation: A literature review and proposed framework. https://doi.org/10.1787/fc467a64-en Actions.

Villanueva, J. A., & Eacersall, D. C. (2021, January). An Inquiry into the Epistemic Beliefs of Learning Support Teachers and Learning Advisors during COVID-19. In 4th International Conference on Open and Distance e-Learning: Book of Abstracts (ICODel 2021). University of Southern Queensland

Yilmaz, H., & Sahin, S. (2011). Pre-service teachers' epistemological beliefs and conceptions of teaching. Australian Journal of Teacher Education (Online), 36(1), 73-88.