Vaccine education to the rescue of students in the COVID-19 revolution

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ABSTRACT

The COVID-19 has been observed as the Fifth Industrial Revolution (5IR) which has naturally advanced education five/ten years ahead of digitalisation. The COVID-19 revolution has obliged everyone to be a student needing to be educated about national lockdowns, personal hygiene practices, digital technologies, and vaccines. This study intended to explore lessons learned by higher education institution (HEI) students in Eswatini, Lesotho, the Republic of South Africa, and Zimbabwe during the COVID-19/5IR which helped them to complete their PhD studies. Using purposive with convenience sampling, this study selected twenty most accessible PhD students. The pragmatic paradigm, participatory action research (PAR), and natural identity were used to frame this study in order to guide reflective activities, Zoom focus-group discussions, and semi-structured interview data-generation methods. Findings indicated that students achieved good education on personal hygiene practices and digital technologies that assisted them to effectively deal/continue with their studies. However, education on vaccines remained a major concern because participants believed that the world was treating symptoms of COVID-19 by vaccinating humans more than dealing with the source/s of the virus before it affected humans. Consequently, this study recommends a good education that balances personal, societal, and professional needs in order to understand natural identities.

Introduction

COVID-19 or the Fifth Industrial Revolution (5IR) has made students of everyone. These students have had to be educated mainly on national lockdowns, personal hygiene practices (sanitiser with face masks), digital technologies, and vaccines. Revolution is an unprecedented, unexpected and radical change that compels the world to naturally generate new actions of addressing personal, professional, and/or societal needs (Khoza, 2021b). COVID-19 emerged as a new revolution that has been observed as a 5IR which has advanced education about five or ten years ahead in terms of digitalisation. In other words, what is currently happening in higher education institutions (HEIs) with regard to a digitalised curriculum (DC) (Khoza & Mpungose, 2022) would have happened in any event within the next five or ten years had it not been for the COVID-19 revolution (Makumane, 2021a; Sokhulu, 2021). Because the situation of education since March 2020 has been unprecedented (Abdel-Hameed, Tomczyk, & Hu, 2021) it is clear that a new revolution has emerged — the 5IR driven by COVID-19. The COVID-19/5IR has compelled students to find new ways of learning (Daniela, 2021; Mkhize & Davids, 2021). This suggests forms of conception of a DC during the COVID-19 revolution that introduced forms of education that simultaneously worked with students’ formal studies.

Over and above students’ formal studies in completing their academic calendars/years, HEI students were nevertheless expected to participate in national lockdown education. Such was divided into personal hygiene practices (sanitiser with face masks) – (personally-driven), digital technologies (professionally-driven), and vaccines (societally-driven). Challenges emerging from national lockdown education are a cause for concern for students when leaders themselves seem to be confused about the

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effectiveness of national lockdowns. For example, in South Africa (SA) on Monday 23rd March 2020, the state president, Cyril Ramaphosa, announced a 21-day national lockdown which was then extended beyond 21 days. This lockdown affected the education sector. Individuals were thus forced to educate themselves on personal hygiene practices (sanitisers with face masks and others) recommended by the World Health Organization (WHO), and to opt for a swift adaptation of digital technologies in education. These two forms of education seemed to work for HEI students because they were able to use face masks and sanitisers, and to use digital technologies in conducting their studies (Mpungose & Khoza, 2022).

However, vaccine education seemed to confuse students: the president, in 2020, indicated that no one would be compelled to take the vaccines in 2020 and early 2021. Yet in November 2021 the president changed his position, stating that he was working with a team to oversee mandatory vaccinations in certain sectors. Immediately after that announcement, some HEIs (University of the Witwatersrand, University of the Western Cape, Sol Plaatje University…) in SA introduced mandatory vaccination for staff and students. Most people who took the vaccines then ignored the first two forms of education. People had been given to believe that vaccines were intended to protect them from acquiring COVID-19. The president, with other members of parliament, thereafter tested COVID-19 positive, having been observed enjoying mask-free societal activities. The president had to be isolated from the 13th December 2021 because he tested COVID-19 positive. This suggests that vaccine education in South Africa had been ineffective.

To counter this ineffective vaccine education, this study intended to explore lessons learned by higher education institution (HEI) students in Eswatini, Lesotho, South Africa, and Zimbabwe during the COVID-19/5IR which helped them to complete their Doctor of Philosophy (PhD) studies.

**Literature Review**

The literature review presents the conceptualisation and problematisation of three factors that seemingly dominated education during the COVID-19 revolution: personal hygiene education; digital technology education; vaccine education.

**Personal Hygiene Education (sanitiser with face masks) – (personally-driven)**

Personal hygiene education is a cognitive process of human awareness of unique individual needs that involve protecting oneself against viruses by assuming personal protective equipment (PPE). During the COVID-19 revolution PPE, which mostly refers to face masks and sanitizers, was the main resource in helping students to protect themselves against COVID-19 transmission (Celina et al., 2020). Face masks and sanitizers were found to be effective when they were properly used (Desai & Aronoff, 2020). The term ‘properly used’ means: (1) use an alcohol-based hand sanitizer or soap and water to wash one’s hands at least 20 seconds before donning (putting on) and doffing (removing) a mask; (2) the mask ties should be secured behind one’s head or ears; (3) undo the mask ties before removing the mask without touching one’s face or the front of the mask; (4) keep a least 2 metres or 6 feet away from other people in public; (5) a mask should be worn by people who are older than two years and consciously aware of what is happening around them (Alderman, 2020; Desai & Aronoff, 2020).

While face masks may assist in protecting humans against respiratory infections such as flu and COVID-19 that spread per droplets, there were misconceptions about the wearing of face masks. The main misconceptions included that face masks may not protect humans against the spread of COVID-19 and that face masks may cause cancer. However, all these misconceptions were found and contradicted early in January 2021 when they were circulating on Facebook and other social media sites (SMS) emerging from Blacklisted News (Harada, Harada-Sassa, & Yamamoto, 2020; Humphreys, 2020; Kurian et al., 2021). It was discovered that face masks may not decrease or increase the amount of oxygen (entering) or carbon dioxide that remains in the face masks (Celina et al., 2020; Ishibashi et al., 2021). These studies suggest that personal hygiene education was well received by people, being successfully understood and practised by the majority of HEIs and other people at large.

The success of personal hygiene education seems to be underpinned by self-reflective platforms, formative assessment, pragmatic aims, a blended/hybrid environment, the researcher role, and smartphones (Abdel-Hameed et al., 2021; Khoza & Mpungose, 2022; Li, Li, & Han, 2021; Matzavela & Alepis, 2021). Reflective platforms, through self-formative assessment, assisted students to interrogate their experiences in order to improve the quality of their lives (digital technology identities) more than the quality of their studies (Dolenc, Šorgo, & Virtič, 2021). Through finding and understanding their digital technology identities (Morgan, 2014a) use blended/hybrid environments. Such environments combine forms of digitalised curriculum (DC) and face-to-face (F2F) curriculum, assisting students to complete their studies during the COVID-19 revolution (Khoza, 2021b). The learning environments were dominated by smartphones that combined learning management systems (LMSs) and social media sites (SMSs). HEIs had to work as researchers in identifying, collecting, analysing, and using whatever was needed to improve quality of their students’ lives as well as their own (Mpungose & Khoza, 2021, 2022).

**Digital technology education (professionally-driven)**

According to Daniela (2021), technology-enhanced learning (TEL) or per the digitalised curriculum (DC) seems to be the only way of learning in the COVID-19/5IR. Various journals have introduced special issues that allowed academics and/or students to reflect on their experiences in order to produce pragmatic digital curricula that work according to individual needs (Bartolomé, Garazier, & Larrucea, 2021; Mpungose & Khoza, 2021). For example, a special issue by “Education and Information Technologies” produced rich experiences of educators that demonstrated new ways of using a DC to improve learning outcomes. A study conducted by Dolenc
et al. (2021), which supported a study by Khoza and Biyela (2020) on decolonisation of knowledge, established that unintended side effects of a forced DC/online education caused by the differing views of educators and students is a cause for concern. The former study revealed that students had more positive views about the DC than educators; and that may have positively affected the academic performance of students.

HEIs have been prescribing mandatory LMSs to be mostly used by staff and students. On the one hand, most HEIs have been observing resistance to LMSs by staff which may have resulted in negative views. On the other hand, students, who mostly join HEIs with experience and knowledge of SMs used in their everyday lifestyles, develop more positive views on technology than staff (Mpungose, 2020a). Searching for solutions that assist students to achieve both quality lives and academic performance through the use of a DC is paramount. Such will assist students in addressing personal, professional, and societal needs that produce high academic performance (Makumane & Khoza, 2020). Pumptow and Brahm (2021, p. 555) explain that studies on the DC at HEIs may not assist to improve student academic performance because HEIs “predominantly prescribe different types of (digital technologies) usage patterns but little is revealed about the students’ study-related attitudes and performance”.

Bartolomé et al. (2021), Govender and Khoza (2022), Khoza and Biyela (2020) and Khoza and Mpungose (2022) propose a pragmatic DC which combines both performance-based and competence-based curricula as a solution to this concern. A performance-based curriculum which is used for teaching students to achieve high marks through mastering course content is driven by strictly prescribed teaching principles. The principles are objectives, content, resources with activities, and summative assessment (Shoba, 2021; Tyler, 2013). Principles of a competence-based curriculum include learning outcomes to be achieved by students; activities may be used to generate content for achieving outcomes and facilitation, mainly through formative and peer assessment (Hoadley, 2018; Li et al., 2021; Mabuza & Khoza, 2021). A competence-based curriculum is mainly used to promote students’ socialisation skills more than their academic achievements required by their societies (Branch & Lee, 2020; Makumane, 2021b; Ndlovu & Khoza, 2021; Shoba, 2021).

Khoza (2021a, 2021b) extended this pragmatic DC by proposing a natural identity which argues for the combination of performance-based, competence-based, and the pragmatic curriculum as taxonomies of education. Such are known as natural identities which address HEI, societal (students), and individual/personal needs, respectively. In support of these studies, a study conducted by Mpungose (2020b) established that a combination of the three forms of curriculum produces a balanced education which is capable of assisting students to address formal, informal, and non-formal needs. Informal processes have started to drive the vaccines for COVID-19, which makes one wonder what works or does not work in dealing with COVID-19, other than the personal hygiene practices, face masks, and alcohol-based sanitizers. This suggests the need to explore a vaccine education providing students with facts about COVID-19 vaccines (Celina et al., 2020; Desai & Aronoff, 2020).

Vaccine education (soci ally/soci etly-driven)

COVID-19 vaccines such as Pfizer-BioNTech, Moderna (mRNA-1273), Oxford/AstraZeneca, Johnson & Johnson’s Janssen (J&J) and others used to reduce negative impacts of COVID-19 variants such as the omicron variant, Whole virus, Protein subunit, Nucleic, Viral vector and others, have produced another form of education. The World Health Organization (WHO) encouraged all nations to take care of their citizens including using personal hygiene (driven by PPE), digital technology, and vaccine education or practices. The first two forms of education were effectively used by HEI staff and students to complete their academic years through a DC per good actions that helped them to avoid COVID-19 in numbers (Mashinini, 2020; Sokhulu, 2021). These two forms of COVID-19 education were effectively understood and practised by the world at large, before they were undermined by some practices of vaccine education (Juyal, Pal, Thaledi, & Pandey, 2021).

The aim of vaccine education was to educate people to understand the importance of vaccines as part of controlling negative impacts of COVID-19. When the vaccination process began, citizens were told that vaccines were taken in order to support their DNA or immune systems but not in protecting them from becoming COVID-19 positive (Juyal et al., 2021). People were told to continue with what they had learned from the first two forms of COVID-19 education. After many people had taken the vaccines, the vaccinated citizens put pressure on their governments to introduce mandatory vaccination for everyone. The claim was that after one has been vaccinated, the chances of contracting COVID-19 are greatly lessened. The claim affected many people, who, after taking vaccines ceased to practise the first two forms of COVID-19 deterrent. This behaviour was observed in many countries such as India, South Africa, and others (Juyal et al., 2021).

For example, in South Africa, in November 2021, the president (Cyril Ramaphosa) became convinced that, after vaccination, citizens would be protected against COVID-19. Ramaphosa thereafter began to explore a process that would introduce mandatory vaccination into various sectors. The president was admitted to hospital and quarantined from the 13th to 20th December 2021 (reduced from 14 days to 10 days, and then 8 days for the president), as one of those who tested positive post vaccination, and had decreased or ignored the practices of the first two forms of COVID-19 education.

The ineffectiveness of the vaccines in terms of protecting those who tested COVID-19 positive after they had taken the vaccines was blamed on those who had not taken the vaccines as though they were the ones who were spreading COVID-19. This suggests that vaccine education has compromised some of the principles of the first two COVID-19 forms of education. COVID-19 education has been driven by people’s opinions instead of by researched facts. This further suggests the need for theories of education that are
capable of combining the three forms of COVID-19 education according to their strengths. It is clear that COVID-19 as a naturally driven revolution needs a combination of performance-based (facts/content), competence-based (outcomes/opinions), and pragmatic (needs) actions that produce natural identity (Khoza, 2021a).

**Theoretical Framework: Natural Identity Framework (NIF)**

Natural identity framework (NIF) was used in this study to explore lessons learned by HEI students during the COVID-19 revolution (Figure 1).

![Natural Identity framework](source.png)

**Figure 1: Natural Identity framework; Source: Khoza (2021b, p. 4)**

NIF has three identities that must be examined in order to help individuals to understand their actions and to best respond to any revolution within the universe. NIF has professional (performance-driven to address ‘what questions’ about objects/things), societal (competence-driven to address ‘how questions’ about people/humans), and personal (pragmatically driven to address ‘who questions’ about individuals) identities as its underpinning principles (Khoza, 2021a). Each of the underpinning principles has its own underpinning principle that represents its strengths. The other connecting factors of the NIF are formative, summative, and peer assessment. When individuals reflect on the lessons learned during the COVID-19 revolution, they may use all these concepts as their frameworks (Khoza, 2021b). The combination of these principles and factors produces natural identities. In other words, in any activity one has to focus and act on the activity’s natural source (originality) more than on the activity’s symptoms created or constructed by personal identity with professional and/or societal identities. For example, the COVID-19 virus has its natural or original source, which has to be understood and eliminated before it affects humans, rather than simply boosting human natural DNA with vaccines (treating symptoms). According to the NIF, scientists were supposed to generate relevant chemicals to be used in destroying the natural sources of the COVID-19 virus before it started to kill millions of humans.

**Research and Methodology**

The purpose of this study was to explore and understand lessons learned by higher education institution (HEI) students in Eswatini, Lesotho, South Africa, and Zimbabwe during the COVID-19/5IR which helped them to complete their Doctor of Philosophy (PhD) studies. The following questions were addressed:

i. What lessons were learned by higher education institution (HEI) students in Eswatini, Lesotho, South Africa, and Zimbabwe during the COVID-19/5IR which helped them to complete their Doctor of Philosophy (PhD) studies?

ii. How and why did PhD students learn particular lessons during the COVID-19 revolution?

**Research Design**

A pragmatic paradigm was used in this study because it allows qualitative or quantitative processes or both (Creswell & Creswell, 2018; Kivunja & Kuyini, 2017). The pragmatic paradigm recommends the interrogation of human experiences through their actions in order to address individual unique needs required by individual situations. All individuals have their unique definition of reality, researchers choosing the most appropriate methods to be used (Cohen, Manion, & Morrison, 2018; Morgan, 2014b). Using purposive with convenience sampling, this study selected twenty most-accessible PhD students (5 students from a HEI in each of the 4 countries). Participants were given pseudonyms: ESwP 1 to ESwP 5 (from Eswatini HEI); LesP 1 to LesP 5 (from Lesotho HEI); RSAP 1 to RSAP 5 (from Republic of South Africa); and ZimP 1 to ZimP 5 (from Zimbabwe HEI). The pseudonyms were used in honouring the participants’ anonymity, confidentiality, voluntariness of participants, and others of ethical clearance. The pragmatic paradigm, participatory action research (PAR) (McNiff, 2013), and the natural identity framework (NIF) were used to frame this study in order to guide reflective activities (questionnaire), Zoom focus-group discussions, and semi-structured interview data-generation methods effected in both phases of PAR. McDonald (2012) asserts that PAR is a research methodology in which participants and researcher(s) are actively engaged in making informed decisions which generate practical knowledge to improve their professional lives. Morales (2016) adds that PAR merges action and reflection in participants together with others in order to forge practical solutions. This suggests that PAR with its stages (plan, act, observe, evaluate, & reflect) is carried out to make a useful contribution to individuals’ understanding and knowledge, and how that knowledge defines their identity, affecting, either positively
and/or negatively, their practice. Since the purpose of this study was to explore and understand lessons learned by HEI students in helping them successfully to complete their PhD studies, PAR proved fitting. PAR was conducted in two phases. The Phase One-generated data were used in Phase Two to support the transformation process of the participants.

The guided analysis method was used for data analysis in this study to combine themes generated from the NIF with other themes generated from the data (Khoza, 2021a). Four principles of trustworthiness were taken into consideration to ensure dependability (consistency through the use of direct quotations), transferability (applicability of the study to various contexts), confirmability (elimination of bias through triangulation), and credibility (truth value, including having the participants authenticate the findings) (Khoza, 2021b).

**Findings and Discussions**

Findings were generated by means of reflective activities (questionnaires) based on the items in the category depicted in Table 1. Participants had to rate each of the items, stating whether they had experienced it during the COVID-19 revolution (agree/not sure/disagree). The same items of the category were used to generate questions for Zoom focus-group discussions and semi-structured interviews.

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**Theme One: Personal Hygiene Education (Personal Identity-Justice)**

![Figure 2: Personal hygiene education](image_url)
Self-reflective platforms

Twelve participants agreed that self-reflective platforms assisted them to learn some survival skills in dealing with COVID-19 challenges. Three were not sure and five disagreed (Figure 2). However, during the second phase of PAR, all the participants agreed. One of the lessons learnt by the participants during the COVID-19/IR was self-reflection. The participants found this useful because it “assists us to find and understand our personal identities and self-actualise. We had enough time to do self-introspection in order to understand ourselves and be able to understand the use of PPE as our life style. The platforms involved both LMSs and SMSs…” (RSAP 1 and others agreed/support). This suggests that self-reflective platforms assisted the participants to know and understand the meaning of justice according to the individual needs of their situation within the COVID-19 revolution. Actions of justice are actions taken per real personal identities (internal intelligence), mostly based on the subconscious mind (Khoza & Biyela, 2020; Morgan, 2014b). When actions of justice are generated through self-reflections, formative assessment becomes a major resource (Khoza & Fomunyam, 2021; Mabuza & Khoza, 2021).

Formative assessment

Formative assessment is any action of consciously, subconsciously, and/or unconsciously establishing what is already known or not in order to inform next actions. Fifteen of the participants agreed that through formative assessment they are able to “establish, treasure, and cherish what were important for survival during the COVID-19 revolution. Formative assessment tools were LMSs and SMSs where questions on various PPE, face masks, sanitizers and hygiene activities were asked and addressed…” (LesP 5, and other 14 participants who agreed/support). Three of the participants were not sure and two disagreed. However, all twenty participants agreed that one of the lessons they had learnt in the second phase of PAR was the use of formative assessment as their resource for survival. This supports findings of studies that concluded that formative assessment is an important source of reflection that reveals individual needs (Branch, 2020; Makumane, 2021b).

Individual needs

Understanding individual needs was an important lesson for the participants. Even during the first phase of PAR, nineteen out of twenty agreed that it was important to understand individual needs (Figure 2). Only one was not sure; however, she also agreed during the second phase. This practice suggests a pragmatic process in which individual needs drive all actions in responding to any real-life situation (Kivunja & Kuyini, 2017; Morgan, 2014b). In addressing individual needs during the COVID-19 revolution, the blended/hybrid environment was deemed most appropriate (Makumane, 2021a; Shoba, 2021; Sokhulu, 2021).

Blended/hybrid environment

The blended/hybrid environment is a combination of face-to-face (F2F) learning and DC. This environment was found by 18 participants (Figure 2) in the first phase of PAR to be an important factor that assisted them to deal with their PhD studies. One was not sure, and one disagreed in the first phase, but later agreed in the second phase of PAR. “Most of our F2F processes with our supervisors were through Zoom, Microsoft Teams, and/or WhatsApp with limited physical F2F” (EswP 2 and others agreed/support). “In our limited physical F2F contacts, we were able to use safe face masks, use sanitizers, wash our hands for at least 20 minutes, and use other PPEs…” (RSAP 2, and others agreed/support). These findings are not surprising because studies (Branch & Lee, 2020; Mashinini, 2020; Mpungose, 2020a) see blended learning as today’s life-style of education assisting students to gain a personalised education. Both students and academics play the role of a researcher in a blended environment (Makumane, 2021b; Mpungose & Khoza, 2021; Ndlovu’ & Khoza, 2021; Shoba, 2021).

Researcher role

All the participants agreed (Figure 2) that their role as researchers “was important because it was easy to work independently and avoid many physical contact sessions with supervisors…” (EswP 1, and others agreed/support). “We worked well from homes where we practised personal hygiene activities as our life-style without expecting many instructions from supervisors…” (LesP 3, and others agreed/support). This suggests that it is important to work independently as a researcher because individuals focus on their research needs that are personalised to their individual internal intelligence. Working as a researcher promotes swift self-actualisation through personalised technologies such as smartphones (Branch, 2018; Makafane & Chere-Masopha, 2021).

Smartphones

“Our smartphones have all types of technology necessary for PhD studies that include but not limited to scanners, cameras, SMSs, LMSs, COVID-19 testing software… as a result it was difficult to work without our smartphones because we even used them to connect our laptops and other devices through hotspots…” (RSAP 4, and others agreed/support). All the participants agreed (Figure 2) that they relied heavily on their smartphones for all personal activities. This suggests that their smartphones were used as both servants (used as a matter of choice) and masters (mandatorily used). Smartphones are part of digital technology education.
Theme Two: Digital Technology Education (Professional Identity–Equality)

**Objectives**

Eleven participants used their thesis research objectives to drive their actions. In other words, focusing on the research objectives assisted them to complete their studies within the specific period prescribed by their universities. Objectives are short-term goals. Such give the researchers specific directions that are addressed by research questions. “We had to use objectives to act as our prescribed research guidelines... when we were submitting to our supervisors, we had to make sure that research objectives are written in any of our submissions…” (RSAP 1, and others agreed/support). “Research objectives, helped us to understand and focus on the process of producing our theses before we thought of the completion…” (ZimP 2, and agreed/support).

These accounts suggest that objectives are important in driving research processes so that researchers complete their research projects with a good understanding of such research processes. Understanding research project processes demonstrates that researchers have mastered new original knowledge produced by their theses (Creswell & Creswell, 2018; Khoza & Fomunyam, 2021).

**Content (School knowledge)**

All participants agreed that their HEIs prescribed all the requirements (content/structure) of their theses on their digital resources that included LMSs and SMSs. While they were flexible in terms of producing new knowledge based on their theses, students had to follow all the prescribed requirements of the theses. Prescribed requirements are important in terms of students producing theses that reflect identities, visions, or standards of HEIs. Prescribed requirements represent prescribed HEI content generated from researched and specialised sources of school knowledge (Hoadley, 2018; Shoba, 2021). HEIs use the prescribed requirements to treat students equally ('one size fits all' treatment).

**Resources with activities**

Common resources used by the participants during the COVID-19 revolution were “PPEs, Google Scholar, EndNote, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Learning Management System (LMS), Zoom, Microsoft Teams, WhatsApp…” (LesP 4, others agreed/support). More than learning and using educational technologies, the participants learned to use various forms of personal protective equipment (PPE) to protect themselves against COVID-19 when they had to meet other people.

**Summative assessment**

Summative assessment is a process of collecting, analysing, storing, and presenting information about students' performance in order to grade them. All the participants agreed that they were “assessed through online processes where proposals were defended online, and theses were emailed to three examiners (internal, national, and international) for examination…” Students had to resubmit their qualifications with their supporting documents when they submitted their theses to their research officers. These officers had to generate online files for the students because they were unable to access their offices during the national lockdown.
Theme Three: Vaccine Education (Societal Identity-Equity)

Learning outcomes
All participants agreed that learning outcomes of their theses were to produce new original forms of knowledge and to understand their self-identities, as philosophers. “Although we were aware of the outcomes of our theses, we learnt to simultaneously use whatever technologies that assisted us to understand all our project processes that helped us to achieve the outcomes in order to produce higher order knowledge of self-actualisation…” (EswP 3, and others agreed/support). This account suggests that, as much as it is important to produce original forms of knowledge through PhD studies, one should also be able to find and understand one’s identity. Self-identity is an important resource for humans because it assists with inner management of unique internal personal intelligences (conscious, subconscious, and unconscious) (Hoffman, 1988; Khoza, 2021b). Through their unique intelligences of self-identity, participants were able to understand their individual/personal needs and to decide whether or not to take the vaccine.

Everyday knowledge
Five of the participants used everyday knowledge as part of their studies. Another five participants were not sure, and ten were limited in terms of using everyday knowledge. In Phase Two of the PAR, all participants started to include some forms of everyday knowledge even though they were very strict in terms of following school knowledge. However, even school knowledge usually starts as everyday knowledge because researchers’ subconscious minds retrieve prior experience as the basis of their new research (Cort, Cort, & Williams, 2017). When everyday knowledge is well facilitated it may produce higher-order school knowledge.

Facilitation
During Phase One of the PAR, only eight participants agreed that they facilitated their own processes. However, during Phase Two all participants began to facilitate their own processes. “We had to work as facilitators over and above being researchers or students because we had to organise our own meeting sessions through Zoom/Microsoft Teams with our supervisors based on our needs. We enjoyed the privilege of leading our supervisors…” (EswP 2, and others agreed/support). Practising facilitation was one of the most important lessons learnt by the participants. When students facilitate, they master the content of the projects by explaining every step of the processes to their supervisors based on their personal needs (Arnold & Sangrà, 2018; Makumane & Khoza, 2020). This suggests that facilitation is capable of producing independent students who can lead supervisory processes.

Peer assessment
During Phase One of the PAR, only eight of the participants were part of their HEI PhD cohorts, in which their thesis processes were peer-assessed by other supervisors and PhD fellow students. However, during Phase Two all participants were part of their HEI online PhD seminars/cohorts where they presented parts of their theses to be critiqued by their fellow PhD students and other supervisors. The four HEIs at which these participants were registered organised at least four combined online seminars every year.
“During online PhD seminars, we learnt to tolerate any critique and developed thick skins that are useful in understanding critiques from examiners and journal article reviewers…” (RSAP 3, and others agreed/support). This account suggests that the participants developed knowledge, skills, and values/attitudes required in the development of scholarships to be published through journal articles, books, and other sources. They will not be discouraged by rejections of their articles or book chapters by publishers or editors. During Phase One, the participants were afraid and uncertain whether or not to be vaccinated.

Theme Four: Natural Identity (Lessons Of Covid-19)

Although participants used the positivist (5), interpretivist (6), critical (4), and pragmatic (5) paradigms (Figure 5) in their theses/dissertations, they believed that they transformed into pragmatists and/or naturalists through their theses and participation in this study. Positivists believe that there is one solution or objective reality to any problem based on observable or measurable objectives (objectivity is a key). Observable objectives are used to provide explanations to be used in predicting the future. Interpretivists believe that there are many solutions to any problem based on human experiences (subjectivity is a key). The critical paradigm interrogates issues of power that exist among humans with the aim of liberating those that may be identified as minors or oppressed. In other words, the critical paradigm aims at transforming situations in order to liberate such minorities. Pragmatists believe in actions that are based on individual internal experiences (Kaushik & Walsh, 2019; Kivunja & Kuyini, 2017). In other words, humans have individual internal intelligence (through pragmatic or natural identity) that helps them to address their needs, even those that are driven by natural forces that cause humans to become naturalists.

“We have come to understand that our thoughts from our subconscious decide whether to do well or not… During our studies, we decided to concentrate on positive thoughts in order to overcome fears that were caused by COVID-19…. Other fears were caused by vaccine confusing issues…” (RSAP 5, and others agreed/support). This account suggests a pragmatic position in which individuals reflect on their personal needs in order to address them with relevant solutions demanded by their situations (either for survival or creation) (Khoza, 2021b; Makumane & Khoza, 2020).

Summary of lessons learned during the COVID-19 revolution

When the participants were asked to summarise lessons learned during the COVID-19 revolution, they summarised these as follows:

“I learned to internally keep what I interpret as negative thoughts within me so that it cannot be externally known by other people who may remind me about them even after I have forgotten about them. Negative thoughts prevent us from infinite life possibilities of growing our ability to properly manage our life activities because they cause fears… Since it is difficult if not impossible to think out negative thoughts, I have learnt to overcome them by telling people about my internal positive thoughts so that they become my life style when people keep on reminding me about them…” (RSAP 1; supported by RSAP 2; 5; EswP 2; LesP 3 and 5).

These accounts suggest that these participants were aware of their subconscious mind where all thoughts reside and are retrieved when required for action (Khoza, 2021b). Awareness supported them to know/understand their identities based on what they intended
to promote as positive thoughts over what they perceived as negative thoughts. In other words, they were aware of their internal or inner identities.

“I learned to be aware of my inner being in order to protect it when I help others. If it is not protected, it may be commercialised for transitions that may lead to stress, depression, blowback or burnout and unable to touch human life as my mission…” (LesP 1; supported by EswP 1; 3; ZimP 1; 2 and 5). This reveals the importance of becoming aware of one’s identity before one supports others. This may assist one to help others based on one’s strengths. One’s weaknesses are concealed from those that are being helped: one’s strengths encourage others to generate positive thoughts of themselves, positively responding to the universe (Chopra, 2021). As much as they concentrate on the development of their natural identities through positive thoughts, they wish to transform other people around them to understand activities from the universe. In supporting others to become aware of the power of their internal intelligence, the accounts suggest that the inner being or personal (natural) identities should not be sold to others for money. Equally, one should not help others expecting them to return the favour because this leads to human suffering. When individuals are aware of their natural identities, such individuals live happier lives than when they have others around in their private spaces because they are able to concentrate on the process of nurturing their internal intelligence (Khoza, 2021a).

“The universe throws various activities to us in order to internally respond to… All the activities are happening within us… humans have control over them when they are consciously aware of them in order to positively interpret them to produce actions… One has to be internally aware of the self before helping others to be aware of their inner being to avoid stress from their inability of interpreting world activities used for survival…” (ZimP 4, supported by EswP 5). This reveals that human suffering (stress, depression, burnout…) is caused by an inability to use the conscious mind to guide the subconscious mind in responding to what the universe offers to humans (Grandpierre, Chopra, Doraiswamy, Tanzi, & Kafatos, 2013; Khoza, 2020). When the conscious mind interrogates the subconscious and unconscious actions, humans become aware of their unique individual internal intelligence based on their deoxyribonucleic acid (DNA) (Khoza, 2021b).

“I learned to reclaim or to go back to my original identity which I was created/born with before it was claimed by social and professional spaces. We all have important intelligence within us that help us to address all our needs. During COVID-19 lockdowns, it was the same intelligence that helped us to continue with our lives and decide whether to vaccinate or not…” (RSAP 3, supported by LesP 4). This reveals the importance of becoming aware of individual human intelligence which drives individuals from conception (Shoba & Khoza, 2022). During the COVID-19 revolution, some people who were COVID-19 positive survived through their internal intelligence or DNA without even taking vaccines. This suggests the importance of dealing with sources of activities more than merely symptoms of the activities. The majority of humans have suffered for believing in treating symptoms over and above studying the natural/original sources of activities during the COVID-19 revolution.

…not to wait for suffering before I improve the way I think. For example, HEIs should have used mandatory online learning long before COVID-19 because it was clear during COVID-19 that they could afford it…” (ZimP 3, supported by RSAP 4). This suggests that human internal intelligence can improve whether humans are facing challenging situations (suffering) or when they are happy. The COVID-19 demanded that HEIs use online learning or a digitalised curriculum (DC) to save the 2020/2021 academic year/calendar. This demonstrated to HEIs that they could afford relevant DC resources that bring realities into their classrooms or living rooms.

“Reality is internally and uniquely experienced because it does not exist outside our thoughts. I also learned to continue to search for the internal intelligence that helps me with the ever-changing human identity…” (EswP 4; supported by LesP 2). Therefore, since reality is internally constructed through individual intelligence, humans should improve their awareness of natural identities in order to be relevant in light of the ever-changing demands of the universe. This leads to important educational implications.

Conclusions

This study concludes by revealing that during the COVID-19 revolution, there were three important factors that dominated education. The three forms of education were personal hygiene practices, digital technologies, and vaccines. The personal hygiene education was able to address issues of the personal “who” questions in HEIs (who teaches/learns?). That is, personal hygiene education guided participants to self-reflect and self-actualise in order to establish their personal identities (justice). Participants were able to identify their individual needs in the COVID-19 novelty; and this was instrumental in their continuing with their studies: PPEs were used appropriately in cases where F2F learning was required (Pumplow & Brahm, 2021). This education indicated the importance of human internal intelligence or natural identity with which humans were created. It is one’s responsibility to grow and protect one’s natural identity in order to be happy as one grows. In other words, happiness is a function of natural identity. Happiness is nurtured by individuals by becoming aware and participating only in environments that support the individuals to express such (internally generated) instead of looking for happiness as though it is externally generated. This education assisted the participants to learn how to be happy; and to express their happiness by becoming aware of their natural identities even during the COVID-19 revolution. The participants also became aware of why they did what they did by addressing the ‘why’ philosophical questions of their actions (Khoza, 2021b). While this education addresses individual personal internal unique needs, the digital technology education was able to address professional needs.
The digital technology education was able to address issues of descriptive “what” questions. The digital technology education, through its principles, guided participants to drive their research processes, thus producing new factual/school knowledge through prescribed requirements by their respective HEIs. This assertion suggests that participants followed systematic guidelines to attain objectives and to acquire requisite school knowledge through the use of digital technologies (LMSs, SMSs, inter alia) in order to salvage their studies during the COVID-19 uncertainty (Makumane, 2021a; Sokhulu, 2021).

In relation to vaccine education which is societally-driven, the education process was informed by everyday knowledge that influenced learning. In other words, the vaccine education was able to address issues of operational “how” questions. The three forms of education promoted unique internal intelligences that facilitate the conscious, subconscious and subconscious minds to help students to decide whether or not to take the vaccines. This assisted the participants to become aware of their identities and to address issues of the philosophical “why” questions of pragmatic and/or natural identities. The findings thus imply that participants were transformed into pragmatists and/or naturalists through their academic reflections and actions.

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