Research in a time of COVID-19: Lessons from Southern Africa

Synthesis Report of the #Openupyourthinking Researchers' Challenge

Carla Pereira, Pat Sullivan and Umar Kayari
June 2021

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Acronyms

COVID-19	Coronavirus disease
GCED	Global Citizenship Education
GPE	Global Partnership for Education
HEIs	Higher Education Institutions
NGO	Non-Governmental Organisation
OSF	Open Society Foundations
ROSA	Regional Office for Southern Africa (UNESCO)
SADC	Southern African Development Community
SDG	Sustainable Development Goal
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

Foreword

The COVID-19 pandemic has seen hundreds of millions of people infected with the virus: thousands were admitted to hospitals and almost four million have gone to their graves. A wide range of lockdown measures brought many economies to their knees as the majority of the world's population was confined to their homes. As schools and other educational establishments closed, learning was disrupted and continued only for those who had access to devices, connectivity and electricity. While the majority of teachers were unprepared for emergency remote teaching, many still managed, in their limited ways, to use familiar platforms to reach learners.

The uncertainty, fear, worry and grief that the coronavirus caused enveloped communities and families. But in many countries, among segments of their populations, stories emerged of hope, solidarity and resilience. When inaction could easily have been the default mode given the overwhelming effects of the pandemic, there are thousands of reports of how individuals and organisations created their own interventions in response.

JET Education Services' (JET's) 'South African Bootcamp' (JET Education Services, 2020) was one such initiative. I came across their Instagram account announcing its first results in the last week of April 2020 and was fascinated by the possibility of undertaking research amidst the pandemic. I immediately wrote to James Keevy, JET's CEO, and asked if we could partner with them for a Southern African Development Community (SADC) coverage, bringing together a few universities in the region.

In October 2019, our office, the United Nations Educational Scientific, Cultural Organization Regional Office for Southern Africa (UNESCO ROSA) had organised a round table of vice-chancellors on the *Role of Universities in achieving the Sustainable Development Goals*. Twenty vice- chancellors from the region agreed on a few action points, one of which was to undertake joint research projects. The prospect of working with universities around issues related to COVID-19 and the possibility of building capacities of young researchers during this time, when universities were closed, were appealing. The initial idea was to work on three themes, but as I reached out to other colleagues, Prof Heila Lotz-Sisitka from Rhodes University (who brought in Transforming Education for Sustainable Futures project) and Dierdre Williams of the Open Society Foundations, we managed to put together six themes:

- **Theme 1:** Education for sustainable development: COVID-19 education response intersections with the food, water, and economic (livelihoods) crisis

- **Theme 2:** Teacher preparation for distance learning during major disruptions

- **Theme 3:** Exploring lives of the excluded youth amidst COVID-19

- **Theme 4:** Exercising global citizenship amidst COVID-19

- **Theme 5:** Green skills for sustainable livelihoods in a post-COVID-19 context

- **Theme 6:** Curbing the spread of fake news in Southern Africa – what we can and cannot do

The expected outcomes were: 1) research evidence that could support decision-making during and after the COVID-19 pandemic; and 2) capacity building of young researchers who would be motivated by working with senior university researchers and other young researchers from other universities.

We were encouraged that within just five days of the online announcement via different platforms, we received more than 400 applications to participate. Given the need to be quick and agile, we had to reduce this list and, sifting through researchers' interests, we came up with a list of 75 researchers. Through our combined networks, we were able to identify universities that could take the lead with their respective experts and researchers in each of the six themes.

As uncertainties and fears could easily paralyse one into inaction, this initiative was meant to provide an opportunity for Southern African researchers to tell the stories of COVID-19. As governments imposed lockdown measures, many universities also closed their doors, while some opened virtual spaces for learning. For the majority, Social Science research came to a halt. The Researchers' Challenge was therefore seen as a quick reaction to provide the much-needed evidence on many issues arising from the pandemic. Whereas UNESCO ROSA collaborated with the SADC Secretariat to carry out a survey directed to governments with the aim of documenting their education responses to the pandemic, the Researchers' Challenge initiative was seen as a way to complement the information gleaned from governments' responses.

We are pleased that the partnership with JET, Rhodes University, Open Society Foundations and universities in the region has enabled us to collectively reflect on key themes that permeate countries amidst COVID-19. We are equally gratified that we have been able to provide a platform for senior researchers to work together with a crop of motivated junior researchers across the region. One element of this capacity building exercise was to think beyond the discipline and the national borders.

It is therefore a privilege to introduce this synthesis report that brings together the findings of the six research themes. The six thematic reports demonstrate what is possible when universities (who are mandated to carry out research and generate knowledge) and their respective researchers surmount fear and anxiety and replace this with resolve and hope. This synthesis report is a testament to the collective work that transpired amidst lockdown and universities' closures. This research 'harvest' was made possible through an online platform that was used to recruit, coordinate and facilitate the research process. It is clear that the six themes are intricately interconnected, and we hope that with this report we are able to showcase the key lessons and good practices that emerged. I hope that with this publication, we are able to further dispel the notion of the academe as an 'ivory tower' and replace it with this example of engaged institutions and their constituencies, committed to entering into a dialogue with policymakers and other education and development stakeholders and bringing their offering of concrete policy recommendations.

Carolyn Medel-Anonuevo, Head of the Education Unit at UNESCO Regional Office for Southern Africa

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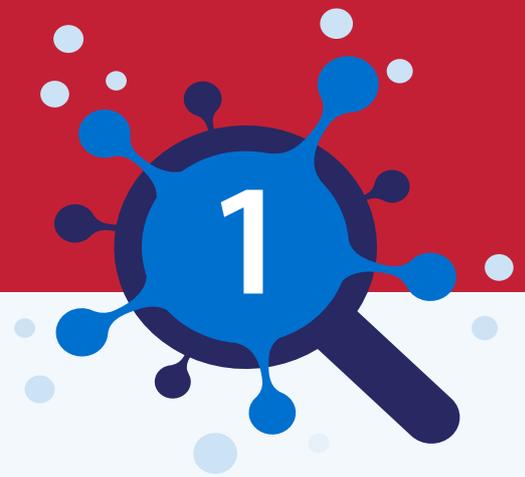
UNDERTAKING RESEARCH DURING A PANDEMIC

1.1   The new learning context

There is no doubt that the COVID-19 pandemic and the ensuing economic recessions, destructive disinformation campaigns and political polarisation have wreaked havoc across the world in 2020, a year that will not easily be forgotten.

While the pandemic has reached virtually every country in the world, with the number of confirmed cases globally surpassing 98 million people (Worldometer, 2021), the crisis has had an unprecedented, detrimental impact in vulnerable developing contexts, including those in Southern Africa. The health and economic effects of the pandemic have been most palpable, and responses in these sectors have largely preoccupied governments. The immediacy of these health and economic impacts has caused some overshadowing of other more critical impacts of the COVID-19 pandemic on learners and education systems: the increase in the number of lockdowns imposed at the peak of the COVID-19 crisis halted face-to-face teaching and learning in almost all schools, technical and vocational education and training (TVET) institutions and universities worldwide (Villet et al, 2020a). The implementation of remote learning has been a challenge for all schools, but even more so in developing countries where the most disadvantaged learners in poor communities, informal settlements and remote areas have been unable to access reliable, affordable internet connectivity at the expense of their learning (Hofmeyr, 2020; Muchanga, 2020). All indications are that the disadvantaged will become even more marginalised, vulnerable, and poverty-stricken: students whose families are less able to support remote learning will face larger learning losses than their more advantaged peers, which in turn will translate into deeper losses of lifetime earnings (Hanushek & Woessmann, 2020; Muchanga, 2020; Lotz-Sisitka et al, 2021a).

Yet it was also a year of epic resilience and solidarity. As a global society, we have had to adapt, and very quickly, to a new (ab)normal way of doing, living, working, connecting, teaching, researching, socialising, learning and collaborating. While our deeply entrenched cultural normal was disrupted, our collective untapped potential was also unleashed as we navigated all the uncertainties that we had to face. History will, undoubtedly, show that this period presented us with one of our greatest learning opportunities. If anything, it invited us to search for questions, to step back and see things differently and be more attentive to drivers such as technology, demographics and societal value shift so that we can ask the right questions and build a process that will support collaborative responses.

In responding to the adaptive challenge that COVID-19 forced on us, a new way of learning and how we undertake research was required, and it is in this context that the #OpenUpYourThinking South African Bootcamp was launched. This research initiative created an opportunity for young (and not-so-young) researchers who wanted to do something about the threat of COVID-19 and its implications for education, to look at the macro-, meso- and micro-level implications of COVID-19 for South African education. The initiative was an outstanding success, not only in terms of its evidence-based research production, but also in that it provided a concrete demonstration of the viability of using an online platform to recruit, coordinate and facilitate a practice-based research process carried out entirely through a video-communication service application (Keevy et al, 2021) with over 180 researchers.

COVID-19 in the Southern African Development Community (SADC)

Africa marked 11 months on 14 January 2021 since COVID-19 was first detected on the continent. In the SADC region, the infection and death rates remain on a high scale in several countries. Even though most Member States had reached their peak of infections in September 2020 and then started showing signs of a steady decline, post-November 2020, with the second wave hitting the globe, the numbers started growing quite rapidly.

Table 1: The COVID-19 situation in the SADC region as of 25 January 2021, adapted from SADC COVID-19 update (source: SADC, 2020)

Country	Confirmed cases	Total deaths	Recoveries	Active cases	Cases per 1M
Angola	19 399	459	17 266	1 674	580
Botswana	19 654	105	15 911	3 638	8 264
Comoros	2 268	71	1 340	857	2 577
DRC	21 869	661	14 905	6 303	240
Eswatini	14 484	479	9 242	4 763	12 412
Lesotho	7 656	123	2 168	5 365	3 558
Madagascar	18 743	279	17 930	534	667
Malawi	19 395	508	6 699	12 188	999
Mauritius	556	10	518	28	437
Mozambique	32 418	305	20 558	11 555	1 021
Namibia	32 425	319	30 020	2 086	12 633
Seychelles	1 033	3	681	349	10 467
South Africa	1 412 986	40 874	1 230 520	141 592	23 656
Tanzania	509	21	183	305	8
Zambia	46 146	305	20 558	11 555	1 021
Zimbabwe	31 320	1 005	22 250	8 065	2 090
Total SADC	**1 680 861**	**45 527**	**1 410 749**	**210 857**	**80 630**

1.2 #OpenUpYourThinking SADC Researchers' Challenge

Drawing on the initiative's success, JET Education Services (JET) fine-tuned the processes, functions, workflows and capabilities that made the interactive experience work seamlessly for participants, and the methodology was adopted by other organisations who wished to undertake similar projects (Keevy et al, 2021). With collaboration and support from the United Nations Educational, Scientific and Cultural Organization Regional Office for Southern Africa (UNESCO ROSA), Open Society Foundations (OSF), and the South African Research Chairs Initiative Chair in Global Change and Social Learning Systems' Transforming Education for Sustainable Futures project at Rhodes University, JET launched the second iteration of the initiative for SADC, subsequently dubbed #OpenUpYourThinking SADC Researchers' Challenge, as a collective response to research on the pandemic's effects on education in the SADC region.

The initial focus was across three thematic areas, but this very rapidly expanded to six as interest grew from various stakeholders including UNESCO, OSF, and several SADC universities, all of whom felt that this initiative would have a positive impact on the education community's response to the COVID-19 pandemic across the globe. The SADC Researchers' Challenge was launched in the third week of May 2020 with six teams of researchers across the SADC region. Each team was made up of a lead researcher (or theme lead), co-leads, peer reviewers and selected researchers, all of whom were volunteers. Each theme (summarised below) culminated in a final detailed report and a one-page infographic that were released to the public over September/October 2020[1]: all can be accessed on the JET website at https://www.jet.org.za/covid-19-research-response/sadc-research-challenge/themes. The emerging findings from these thematic streams fed into relevant debates in the SADC region. The skills and abilities of young researchers across disciplines and SADC countries were strengthened, and they were given an opportunity to elevate their voices and learn from each other.

As with the South African bootcamp, the research aimed, through the establishment of cross-cutting partnerships with partner organisations and universities, to:

a. produce agile research outputs in real time that influence and support decision-making during and after the COVID-19 pandemic; and

b. strengthen the research skills and abilities of young researchers who could acquire a passion for education and an ability to make meaningful contributions in their future careers.

The purpose of this paper is to consolidate and share the knowledge generated from this Research Challenge in an effort to:

1. Promote learning and collective reflection to better understand how education and training systems in the SADC region were affected by and responded to COVID-19 between May and September 2020 during the first wave of the pandemic in the region. (We acknowledge that the pandemic has since entered a second and, in some countries, a third wave, with further negative societal, economic and educational consequences. The findings of the research are, however, still pertinent, given that various Member States' responses to the second/third wave were similar to those in the first wave);

2. Illustrate the interconnectedness of the issues explored and how they could be solved more effectively when viewed through a holistic lens;

3. Provide evidence that could contribute to decision-making processes, strategies and operations during pandemics and other disasters in the SADC region; and

4. Generate lessons learnt, good practices and recommendations that could further strengthen the design and implementation of the research methodology and approach used, especially when there is neither adequate time nor resources to undertake fully fledged research studies.

Notwithstanding the value of the learning that occurred during the SADC Researchers' Challenge (as evidenced in this report's subsequent chapters), an understanding of how knowledge was cultivated and how the researchers experienced the Challenge are just as important for future iterations of the process.

The research was conducted in close collaboration with seasoned and well-respected researchers from 35 universities located across the SADC region (see Table 3).

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1 With the exception of the Theme 1 report, which was finalised and released in May 2021.

Table 2: #OpenUpYourThinking SADC Researchers' Challenge (JET, 2020)

Theme 1	Theme 2	Theme 3
Education for Sustainable Development: COVID-19 education response intersections with the food, water, and economic (livelihoods) crisis	Teachers' Readiness for Remote Teaching During the COVID-19 Emergency in Selected SADC Countries	Exploring Educational Lives of the Excluded Youth under COVID-19 in the SADC Region
Approach: A systemic, relational approach for regenerative responses	**Approach:** Mixed methods design	**Approach:** Phenomenological exploratory nested study
Sample: 81 interviews and 55 online questionnaires	**Sample:** 295 participants (71 interview and 224 online survey participants)	**Sample:** 89 youth participants interviewed online
Theme Lead: Prof Heila Lotz-Sisitka **Co-Lead:** Dr Injairu Kulundu- Bolus	**Theme Lead:** Dr Charmaine Villet **Co-Lead:** Gift Masaiti	**Theme Lead:** Dr Manoah Muchanga
Peer Reviewers: Alexander Leicht, Dr Rafael Mitchell, Dr Experencia Jalasi, Dr Cecilia Njenga, Dr Robin Sannasee	**Peer Reviewers:** Dierdre Williams, Dr Justin Lupele	**Peer Reviewers:** Dr Justin Lupele, Phinith Chanthalangsy
Lead organisation: Rhodes University	**Lead organisation:** University of Namibia	**Lead organisation:** University of Zambia
Researchers: 12	**Researchers:** 17	**Researchers:** 9
Theme 4	Theme 5	Theme 6
The Barriers and Facilitators of Global Citizenship Education (GCED) to Exercise Collective Intention in the Fight Against COVID-19	Intersecting Perspectives on Transforming Education for Sustainable Futures – Vocational Education & Training (VET) & COVID-19 in Southern Africa	Fake News about COVID-19: The impact on high school learners in Southern Africa
Approach: Desktop research for rapid reviews, online surveys and interviews for data collection	**Approach:** Case studies, desktop research, online interviews	**Approach**: Desktop research, quantitative online surveys in selected SADC countries
Sample: 9 participants participated in the study including seven students from a university in Malawi, one student from a South African university and a staff member from a South African university	**Sample:** Local examples of livelihood enterprises	**Sample:** 313 high school learners from Eswatini, Malawi, Zimbabwe
Theme Lead: Prof José Frantz	**Theme Lead:** Dr Presha Ramsarup **Co-Leads:** Nicola Jenki, Emmanuel Ojo	Senior Researcher: Dr Jane Hofmeyr **Theme Lead**: Brendah Siamanjime Chuma
Peer Reviewers: Gordon Mitchell, Cecilia Barberi, Deepika Joon, Yvette Kaboza	**Peer Reviewers:** Stefan Thomas, Khaya Tyatya	**Peer Reviewers:** Al-Amin Yusuph, Prof Sosten Chiotha, Tshepo Motsepe
Lead organisation: University of the Western Cape	**Lead organisation:** University of Witwatersrand (REAL)	**Lead organisation:** JET
Researchers: 7	**Researchers:** 9	**Researchers:** 6

Table 3: SADC universities that participated in the #OpenUpYourThinking Researchers' Challenge

Botswana	Eswatini	Malawi	Mauritius	Mozambique
University of Botswana	University of Eswatini	Catholic University of Malawi	King's College of London	Universidade Rovuma*
	Limkokwing University of Creative Technology	University of Malawi	Open University of Mauritius	UniLicungo
	Eswatini Christian Medical University	Lilongwe University of Agriculture and Natural Resources		
		Mzuzu University		

Namibia	South Africa	Tanzania	Zambia	Zimbabwe
Namibia University of Science and Technology	Stellenbosch University	Open University of Tanzania	University of Zambia*	Zimbabwe Open University
University of Namibia*	University of Western Cape*	Dar Es Salaam University	Copperbelt University	Women's University in Africa
Namibia University of Science and Technology	University of Pretoria			Lupane State University
	Nelson Mandela University			Africa University
	Northwest University			Midlands State University
	Rhodes University*			University of Zimbabwe
	University of Cape Town			
	University of KwaZulu-Natal			
	University of Pretoria			
	University of the Witwatersrand*			

* Lead University

The strategic alliance of the SADC universities in this study fostered an opportunity for these universities to practically implement the two key recommendations of the Vice-Chancellors' Round Table on the Role of Universities in the Sustainable Development Goals (SDGs) that was held in Zimbabwe in October 2019. The purpose of the Round Table was to strengthen research capacities of Southern Africans as well as reinforce collaboration among universities, and in doing so, transform teaching, research and community outreach in the SADC region.

1.3   The new virtual research context

The online methodology used for this research (see Figure 1) allowed for all participants to work from their homes, and the effective use of online publishing and social media enabled their research to feed into national and regional debates. The research teams were made up of young, aspiring research volunteers across the SADC region. Over a six-week period, they worked in close collaboration with seasoned and well-respected researchers from a wide range of universities located in SADC countries and were supported by credible research support structures.
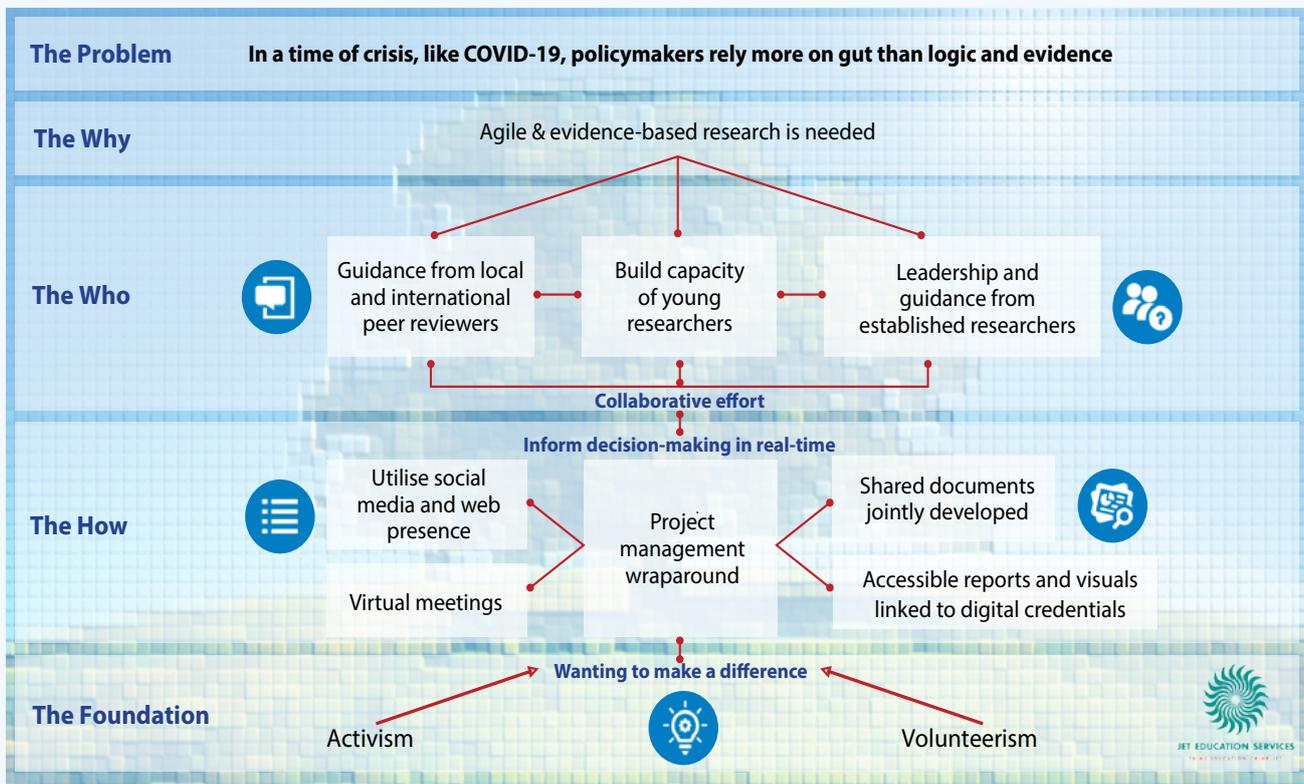
Figure 1: The JET Research Bootcamp methodology

1.4   The research team

The call to action, which went out in the first week of May 2020, targeted young researchers at universities located in the SADC region. By 14 May 2020, JET had received over 423 applications from candidates wanting to be part of the Researchers' Challenge. After an intensive selection process, 75 research volunteers spread across ten SADC countries (see Table 4) were recruited although 15 were unable to continue to the end (see section 1.5.3).

Though the majority of the volunteer researchers were students, either engaged in master's or doctoral studies or had completed their qualification, about a fifth of the volunteers were in full-time employment. It was apparent that people recognised the opportunity for personal growth and wanted to be able to meaningfully contribute to knowledge generation in the face of the COVID-19 pandemic, to make a difference during a time of social crisis and adversity.

Table 4: Participation and drop-out rates per SADC region

Country	# Participating Researchers	# Drop-outs
1. Botswana	8	4
2. Malawi	10	1
3. Namibia	3	1
4. South Africa	16	4
5. Swaziland	12	2
6. Zambia	8	2
7. Zimbabwe	8	1
8. Mauritius	2	0
9. Mozambique	6	0
10. Tanzania	2	0
Grand Total	**75**	**15**

Before COVID-19, I was on the road to becoming an environmental policy analyst. However, my dreams, like those of many youths, are on pause. …I have friends, nieces, and cousins…who are sitting at home feeling powerless. However, this is against the tenants of global citizenship. No one individual should be made to feel powerless. For me, this pandemic is not the be-it-end-all. It has shown us that we are stronger when we act together…and…think of ways…of how local solutions can contribute positively to COVID-19… (Honours Student in Environmental Sciences, Malawi)

We want to help others, but there are too many constraints that restrict our samaritanism [sic]. With bottomless needs not being met, there is a sea of skilful people willing to volunteer their services. I believe in voicing my opinion and utilising my skills and if we could, we can assemble more competent young South Africans to fight this battle together. We could move mountains and heal this nation from the invisible enemies, the toxins that invade our people, and demons that corrupt our minds. Only then could we progress as one, portraying the spirit of Ubuntu. (Honours Student in Medical Bioscience, South Africa)

During the national lockdown in Botswana, I was in my rural home village (that is neighbouring a village where there is a confirmed case of COVID-19). …My lived experiences… have [the] potential to understand how the pandemic [has] impacted diverse societal groups and how educators should rethink, rewrite, and engage learners during instruction. (Ph.D. Student in Environmental Education, Botswana)

As SADC researchers we need to be able to think ahead and quickly, just as everything around the pandemic is changing quickly too. For SADC to come out of the COVID-19 pandemic at a much better position than it was before, it requires Researchers' Challenge where researchers like me will #OpenUpOurThinking and deliberate strategies that will address the pandemic holistically without leaving anyone behind. (Honours Student in Agriculture Economics, Swaziland)

As a practicing practitioner who is mostly into infectious disease, COVID-19 has a direct effect on my day-to-day operations as not only is that my MDR TB patients are at risk of getting infection but COVID-19 share a lot of similarities though…most of its pathophysiology is unknown… Across social media platforms, many statements have been issued by both scientists and non-scientists. Many conspiracy theories have been put forward and generally, the world is still confused... (Medical Doctor and Researcher, Zimbabwe)

As a speech and language therapist…working with mainstream children with Special Education Needs, I have first-hand experience in what is going on at home. My observations of the different learning environments, that is, the homes of children and accounts of the challenges faced by parents can bring valuable input …on teachers' preparation for distance learning… (Speech and Language Therapist, Mauritius)

In my role as Education Manager…, I established and have been coordinating a Working Group of academics and grassroots practitioners in Cape Town working on sustainability education (formal and informal). Our group is keen on identifying ways to map and learn from each other's experiences. …We want to be able to better support one another through being familiar with each other's work in our shared interests of sustainability (social, environmental, economic) and common resilience (of individuals, households, neighbourhoods, and systems). (Education Manager with a Master's in Environmental Science, South Africa)

1.5   Conducting the research

The Challenge was intentionally kept short to coincide with the beginning and easing of the COVID-19 lockdown in the SADC region at the time.
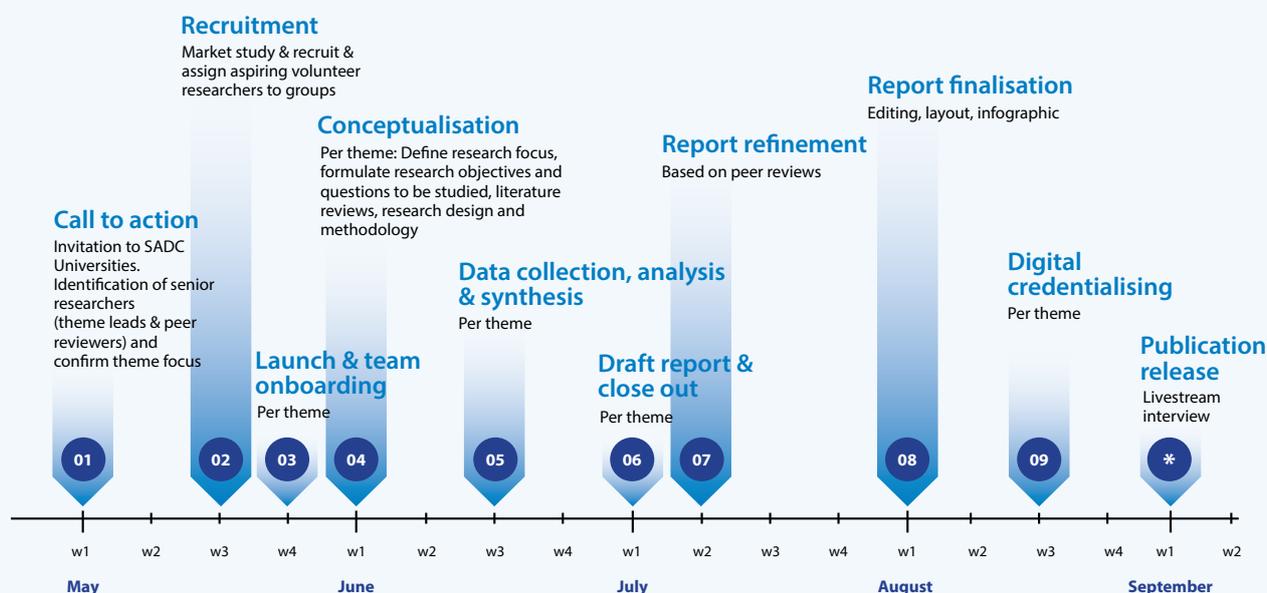
Recruitment
Market study & recruit & assign aspiring volunteer researchers to groups

Conceptualisation
Per theme: Define research focus, formulate research objectives and questions to be studied, literature reviews, research design and methodology

Report finalisation
Editing, layout, infographic

Report refinement
Based on peer reviews

Call to action
Invitation to SADC Universities. Identification of senior researchers (theme leads & peer reviewers) and confirm theme focus

Data collection, analysis & synthesis
Per theme

Digital credentialising
Per theme

Launch & team onboarding
Per theme

Draft report & close out
Per theme

Publication release
Livestream interview

01   02   03   04   05   06   07   08   09   *

w1 w2 w3 w4 w1 w2 w3 w4 w1 w2 w3 w4 w1 w2 w3 w4 w1 w2

May   **June**   **July**   **August**   **September**

Figure 2: #OpenUpYourThinking SADC Researchers' Challenge Timeline

In the 45-calendar-day period, from conceptualising the research to the first draft report prepared, research teams (theme leads, co-leads and team members) met online for one to two hours per session. In their own time, the team members researched, explored, engaged with and synthesised ideas, and wrote. Between 50 and 80 hours was spent on this work over the six weeks. The experience was intense and taxing but rewarding. One theme lead said, 'We produced a dissertation within a month.'

The time needed to finalise the report (including editing, design, and layout) varied from report to report, but by 1 October 2020 all the reports and infographics as well as live-streamed interviews had been completed for Themes 2 to 6 and widely distributed on social media (websites, Twitter, Facebook, LinkedIn, YouTube). Theme 1 was completed in May 2021.

1.5.1   Capacity building

The pairing of less experienced researchers with more seasoned researchers was a deliberate effort to support the growth and learning of younger researchers from different social milieus, cultures and even disciplines and encourage them to think through multiple challenges and collectively problem-solve. Of course, the timeframe limited this to some extent, and novice researchers felt that more support should be offered in future iterations of this Challenge:

> *I would recommend that the researchers that are less knowledgeable receive more support... in terms of methods on how to conduct the research; that the required researcher training is a more scaffolded process to ensure that the novice researchers do actually understand what is required from them; that there is equality and equity in the work requested and the credit given; that there is a platform for the novice researchers to air their concerns and what they are unsure about; and that there be more monitoring and evaluation of the novice researchers' involvement and how much they are learning and actually doing.* (Theme 4 Researcher, South Africa)

On the whole, capacity building took the form of exposure to researcher networks and research professionals across the globe, and the young researchers were directly and purposively guided by their theme leads and co-leads as well as the peer reviewers in terms of methodological approaches, survey development, data collection, writing skills, verification procedures, referencing and understanding consent procedures. The young researchers also benefitted from being part of an innovative online approach that facilitates peer-to-peer learning. The purely online methodology pushed researchers not only to test their technology competencies but also paved the way for quick, collective problem-solving with researchers from other countries. Furthermore, reflecting beyond their country boundaries allowed the researchers to craft regional perspectives that were grounded in their own realities.

1.5.2   Digital credentials

Each participating researcher was acknowledged as a key contributor to the respective research report and was awarded a digital credential. The credential affirms that the researcher participated in the research and can be included in a participant's curriculum vitae.

1.5.3   Researchers' experiences and insights

Overall, the young researchers felt that the Researchers' Challenge was a positive learning experience and pushed them beyond their comfort levels. One researcher said that 'the experience has indeed been a "challenge"; we've had to think on our feet and adopt unorthodox methods. It's been quite a unique learning experience.' Many researchers said they would welcome the opportunity to engage in similar challenges in the future. They noted that the pandemic restricted the methodologies they could adopt: the research was mostly limited to a combination of online surveys and desktop research. As one researcher put it, 'The depth from more face-to-face engagements could have added much more insights about the why…the circumstances of COVID did not allow us to probe as deep as we could.'

For others, however, the pressure proved too overwhelming, and 20% of the researchers dropped out. Reasons included not coping with the demands of the project, having to juggle the project work with their own studies or work and/or personal circumstances. This placed an additional burden on the remaining team members and increased their stress levels. This was further compounded, in some instances, by the mixed preparedness and commitment levels of the team members.

The six diverse research teams brought varying research experiences, interests and levels of familiarity with specific subject areas to inform the discovery process. However, managing six teams of researchers of varied abilities within such a short timeframe was not an easy task and required intense coordination and planning. Despite this, the theme leads, co-leads, and the JET research support teams were able to apply various agile strategies and techniques to bring the teams together.

Researchers and facilitators indicated that they see value in JET conducting projects such as this regularly as an effective and efficient means for young researchers to gain practical and mentored experience. As one researcher put it,

> *I feel education is the area in which we can have more in-depth research on how we can make learning fun and interactive instead of the traditional set-up of classroom and teacher. We need to have more frequent bootcamps to develop and refine the teachers' experience and the learner experience because learning is about experiences… It made me feel like my voice mattered and that someone was listening.* (Theme 4 Researcher, Botswana)

After completing the Researchers' Challenge, some of the peer reviewers and senior researchers who participated in it were beginning to apply some of the thinking and approaches used in their own research work and teaching because they saw the benefits first-hand.

1.6   Concluding comments

In the words of the UNESCO Global Education Coalition, '2020 is not just the year when the world came to a halt, faced with the worst pandemic in over a century. It is also the year that saw the biggest education disruption in history, which forced, at its peak, nearly 1.6 billion students out of their classrooms in more than 190 countries. That represents over 90% of the world's student population' (UNESCO, 2020a). Moreover, the education disruption as a result of COVID-19 has dramatically exacerbated learning inequalities across the globe. In most, if not all, countries, school closures have disproportionately harmed students from socioeconomically disadvantaged backgrounds, raising concerns about the long-run implications of learning inequalities.

The #OpenUpYourThinking SADC Researchers' Challenge provided a new lens (COVID-19) through which to explore the education challenges facing policymakers and practitioners and also sought to develop new research methodologies and build research capacities in the SADC region when access to people and resources was limited and mostly online. The need to problem-solve through collaboration was an implicit principle that underpinned this initiative.

The ongoing online support and coaching delivered during the execution of the research methodology as well as the agile online management platforms that were adopted as part of this Challenge were the starting points for bringing together the investigative processes across the six themes, all the while reflecting through a 'multi-solving' lens. Put simply, the research showed how collaborating, sharing problems and sharing experiences across systems can highlight common challenges and encourage researchers to think through possible solutions in a more agile and streamlined manner.

It is on this note that the findings from across the six themes are synthesised as cross-cutting themes in Chapter 2, with key recommendations for immediate and long-term action steps via the levers of change put forward in Chapter 3.

The #OpenUpYourThinking SADC Researchers' Challenge provided a new lens (COVID-19) through which to explore the education challenges facing policymakers and practitioners

2

MAKING MEANING OF THE FINDINGS

2.1   Introduction

> *…the COVID-19 pandemic requires us to think in radically new ways about existing systems and how they have been operating. It requires us to 'build forward better', giving attention to social justice and sustainability in recovering from the pandemic, and it requires us to act more collectively, systemically, and inter- and multi-sectorally in response to the heightened sustainable development challenges revealed by the pandemic.* **(Lotz-Sistika et al, 2021a, 2)**

> *You cannot do anything with your smartphone if you do not have electricity. You cannot do anything with your smartphone if you do not have internet connectivity, if you do not have network coverage. That is somehow beyond the power of the teacher or the power of the school.* **(Villet et al, 2020a, 13)**

These two quotes set the stage for presenting the findings of the #OpenUpYourThinking SADC Researchers' Challenge and the associated analysis. The SADC is part of Africa, a continent that is beset by poverty and violent conflicts, where development is ongoing, but success is not yet universally within grasp. While pockets of change for the better give glimmers of hope, and wealthier countries offer support according to political will, poverty and inequality frame the SADC context. Conducted at a particular moment in time, the research reflects that each SADC country experienced the ravages of the pandemic to a large extent similarly, moving through uncharted waters and facing common challenges but with differing degrees of stress.

This chapter synthesises the findings and provides an analysis in the form of a review of what was discovered across the six research themes. All six research themes emphasised the importance of education as the bedrock for the development of youth and to cope with the impact of the pandemic. The research paper, *Education for sustainable development and COVID-19 in Southern Africa: intersecting perspectives on why water, food and livelihoods matter in transforming education for sustainable futures* (Lotz-Sisitka et al, 2021a, 2021b), in conjunction with what is outlined in *Education for Sustainable Futures* (Ramsarup et al, 2020), states that in the remote areas of Southern Africa, education equates to meaningful development and that education is essential for the sustainable growth of any nation, and especially for the youth. It is thus important to keep some form of education going in a crisis situation.

The findings identify a range of problems in the SADC region exacerbated by the pandemic. Analysing the findings created an opportunity to group similar ones and identify commonalities amongst them. Firstly, many of the findings focus on the **ability of individuals** to cope with the pandemic, which tied closely to the level of skills each had and how they used their skills to cope. A second group of findings relates to the basics to sustain life, such as access to food and water and the ability to make a living, viewed within **a framework of inequality (the poverty trap)** and how governments responded to the pandemic. Governments' responses appear to have been uneven, with some problems requiring a multi-pronged solution that requires time and resources, something a pandemic does not allow for. Other problem areas could be addressed immediately. For example, the lack of clean water for all citizens is a major concern across the region and highlights inequality and lack of access to resources as well as the urban rural divide. It is a problem that existed before the pandemic and is now of even greater concern when access to water for basic hygiene underpins a way to control the spread of the disease. The third group of findings concerns how **information about the pandemic** is received and sent, both at a systems and individual level, and considers access to information and false news.

The research revealed a slice of life in the SADC from different perspectives, and the commonalities across the six themes form a picture of common systems and issues that impact individuals and their lives. While not hitherto unknown, during the pandemic these issues assumed a greater significance. It is clear that COVID-19 has hit all aspects of normal life, and nothing is the same. Unsurprisingly, inequality was a consistent major issue or thread running through all the research findings, and this led to the development of a framework or multi-faceted lens to assist policymakers and others to reflect on what to do next. Inequality is a multi-level problem that requires different thinking to address it and its consequences. (By inequality, we mean 'the dichotomy between rural and urban economies, as well as across regions, and in the distribution of socioeconomic and physical facilities, for example, electricity, water and sanitation, health centres and schools' [Odusola, Cornia, Bhorat & Conceição, 2017, 31–32]).

In the SADC, the poor living conditions in which many people reside are apparent for all to see. Poverty and lack of resources were mentioned throughout the research papers in relation to inequality. Discussions on the pandemic have to be framed within the broad parameter of inequality as all responses in the pandemic are tempered by it. As was adopted globally, the SADC governments' immediate solution to the pandemic was to encourage people to stay away from work and to close educational institutions. Lockdowns were put in place

to stop person-to-person and cross-country transmissions. But the pandemic is far from over, and weak, malnourished, immunosuppressed populations living in poverty with little or no hygiene, sanitation or running water will always be highly susceptible to new or re-emerging emerging infectious diseases (Rossa, Croweb & Tyndall, 2015). Lotz-Sisitka et al (2021b, 40) highlight the impact of lockdowns and the way that SADC governments dealt with the uneven access to food, water, electricity, housing, resources and jobs. 'The same people who have issues with losing their livelihoods, are the same people who have issues with securing food, who don't have access to education on different platforms, and are the ones struggling with access to clean and safe water.'

The United Nations Economic Commission for Africa highlighted the fact that the effects of the pandemic entrench this inequality.

> *While the immediate health impact is still evolving, the indirect consequences beyond health already bring a heavy toll. These include food insecurity, lack of medical supplies, loss of income and livelihood, difficulties in applying sanitary and physical distancing measures, a looming debt crisis, as well as related political and security risks.* (United Nations Economic Commission for Africa, 2020, 2)

Furthermore, within the SADC, there is also inequality between countries, with South Africa enjoying more resources and better economic opportunities than other countries. The research findings show that the pandemic has intensified this inequality too, and this needs to be considered in any collaborative work that is undertaken in the future.

At the time of writing this synopsis, the findings still have relevance: COVID-19 is still here and will be for a considerable amount of time.

Reflecting on the research, the individual (youth) and education institutions were central subjects. Youth, for the purposes of this research were defined as being between 10 and 35 years of age, with the majority being from 16 to 20 years old. Perhaps not surprisingly, youth were found to be more knowledgeable about the symptoms and preventative measures of COVID-19 than about what caused it and where it originated, mainly because of their access to media (Muchanga et al, 2020). The findings showed that some youth believed in conspiracy theories, myths, and religious explanations as reasons for the pandemic, without any rational basis. But universally, they knew about handwashing and social distancing as a means to keep the virus away.

Directly impacting youth was the role teachers and lecturers played in supporting learning during times of lockdown. The research showed that teachers in rural areas were not necessarily able to deliver emergency remote teaching (ERT) as there was a lack of connectivity and also limited technical skills to deliver what was needed, even though this was provided in most countries.

> *Findings indicated that ERT was provided in most participating countries using different means such as online lessons, radio, television, printed materials, and or blended learning packages. (Villet, et al, 2020a, 31)*

Lecturers were in a better position being better skilled in ERT and more able to provide the necessary data to students to assist them in accessing online content.

The young researchers presented country specific problems, challenges and some solutions that have been synthesised into collective SADC findings in this report. They give voice to how the pandemic, in part, has affected communities and how it has been managed. Emerging from the findings are possible new research topics on which SADC universities can work together to build a greater understanding of the impact of the pandemic in an African context. These new research paths could align, for example, with the United Nations (UN) SDGs, which aim to 'end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity' (United Nations Development Programme [UNDP], 2021a). Whatever new research is chosen, it should resonate with SDG Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development as this holds the opportunity for harnessing the synergy and energy needed to work together for the good of all.

Inequality is a multi-level problem that requires different thinking to address it and its consequences

2.2   Collaboration to problem-solve

On 29 January 2021, the President of Mozambique, Filipe Jacinto Nyusi, and the SADC Chairperson reflected that the region was under an intense second wave.

> *Following up surging of COVID-19 cases, we must intensify cooperation and collaboration between Member States, through increased data sharing, policy harmonisation and standardisation, pooled procurement of essential medical and non-medical equipment to address the pandemic in a more effective way…*
>
> *In addition to health measures, we should continue to embark on common regional strategies, harmonised and synchronised initiatives; including electronic platforms to monitor the safe cross border movement of people, vehicles, and goods, as well as implementing National action plans that address social consequences.*
>
> *Let me conclude by calling upon all fellow citizens of the Southern Africa Development Community (SADC) to redouble their collective and individual commitment, as only by working together we will overcome the COVID-19 pandemic — the major challenge of our lifetime.* (SADC, 2021)

The message is clear that through collaboration SADC can begin to overcome COVID-19. The steps apply to all SADC countries and will be interpreted according to country need, but there is a universal voice that says it is time to face the real problems that the pandemic has laid bare for all to see.

As 2021 moves ahead, the possibilities of a vaccine have materialised and distributions across Africa are planned for and in place. When the pandemic will be over is not known but understanding what the effects of a pandemic are and a response to it are critical to preparing for future waves and possibly new strains. From the overall recommendations, the ones that resonate strongly with the findings have been listed in Figure 4 below. They are also the ones that should be considered first for immediate action. With action will come change, hopefully for the better.

The research findings show that the problems of poverty, inequality, food security, water and infrastructure and other socioeconomic issues that have beset Africa for many years are deeply entrenched. To address these problems, and if the pandemic is to be controlled and its effects mitigated, collaboration could be the starting point and must include building on any viable country-based partnerships. The history of how governments are working in SADC has shown that collaboration is possible: '…a region that has gained a lot of experience in promoting regional co-operation and integration' (SADC, n.d.).

But the range of challenges and agendas that each government faces, in each country, has the potential to delay processes, notwithstanding the opportunities it brings:

> *The diversity of governance actors and of agendas complicates addressing urban issues but can also be seen as an opportunity for leveraging additional skills and resources through collaborative urban governance processes that bring different stakeholders together to develop and implement more holistic and inclusive strategies.* (Smit, 2018)

In Africa, the pace of 'ambitious attempts at systemic change is often characterised as a steady crawl' (Kanya, 2020). But the immediacy of the existential threat posed by the pandemic called for high-speed agility and necessitated that political alignment and cultural resolve not stand in the way. The pandemic has shifted the cultural context almost beyond recognition. Suddenly, previous obstacles to change are being discussed, and those that were seemingly insurmountable, for example, access to clean water, are urgently addressed, thus establishing a new norm.

There are a number of factors and systems that, if considered holistically and if a collective plan for change is then actioned, would help individuals and communities to cope better during a pandemic or similar disaster. The logistics of looking at and then actioning a programme for change is an immense challenge and needs strong collaboration, both intra- and inter-country. This is why collaboration to problem-solve is suggested as the overarching tenet in the framework (or Lens for Change) shown below.
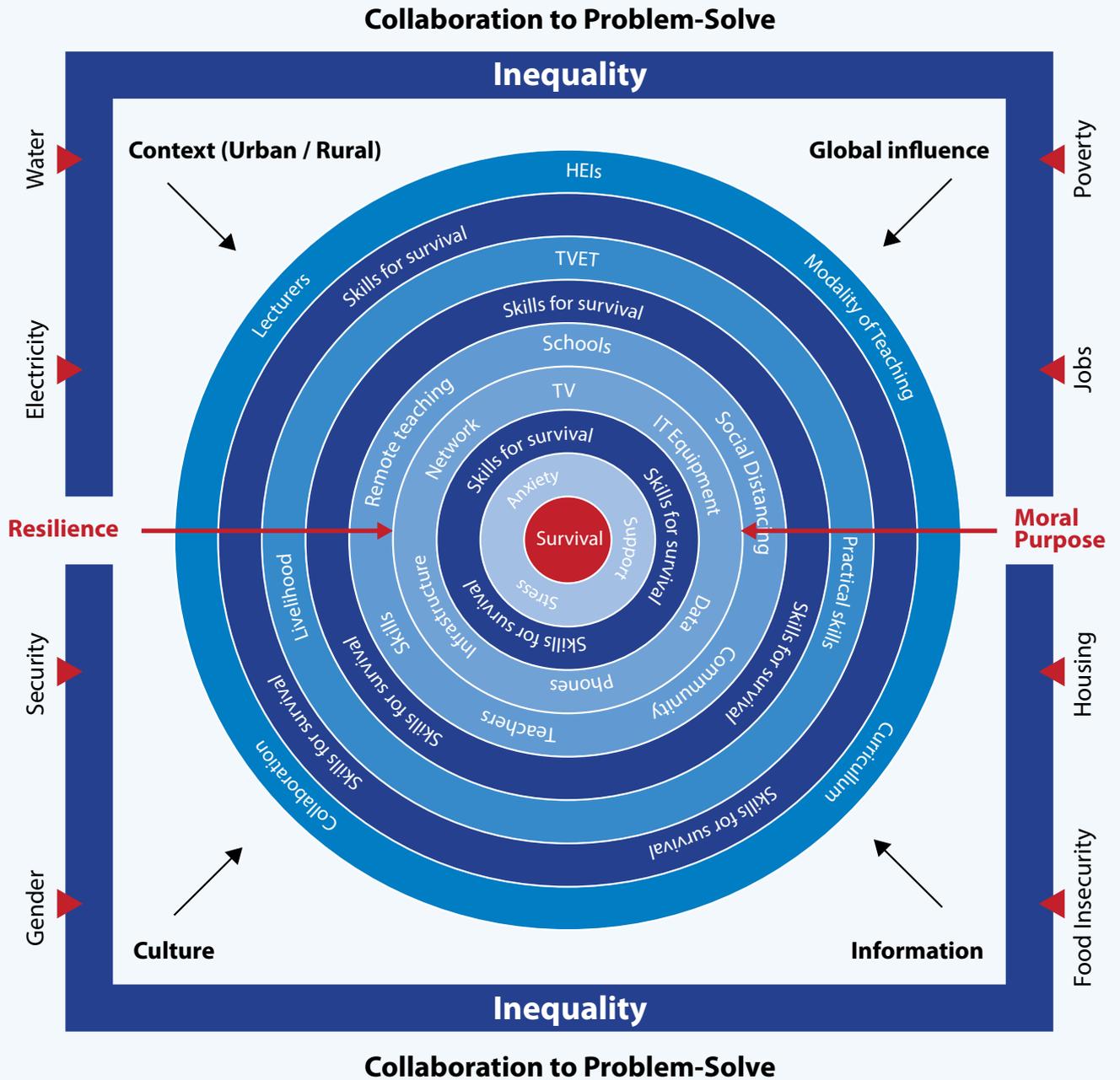
Figure 3: #OpenUpYourThinking SADC Researchers' Challenge – A Lens for Change

The Lens for Change is based on two major features that were evident in the findings and are central for survival in a pandemic: how an individual responds and how government systems support communities. Working and cooperating across government systems, and even across countries, are crucial to the ability of society, in this case African society, to respond meaningfully to the pandemic. Collaboration across countries provides a multilateral, multi-disciplinary and multi-sectoral response with, hopefully, agreed, meaningful action for change. However, Lotz-Sisitka et al (2021b) stated that in their research, '...many of our respondents refer to the importance of partnerships, but also to the lack of adequate inter-sectoral cooperation necessary to combat the worst impacts of the COVID-19 crisis' (27).

Lotz-Sisitka et al (2021a) examined systems in depth, from mega to micro and were able to show how they connect and integrate. Each of these systems and the problems associated with them are written into the UN SDGs. There are obvious linkages between the impact of COVID-19 and the achievement of the UN SDGs by 2030. The pandemic has forced us to take a step back from the achievement of the SDGs, for example, SDG 6, which focuses on access to clean water and sanitation, and SDG 2, which aims for zero hunger. It is likely that the SDGs will have to have their deadlines and processes reassessed in terms of what is needed in the world, and specifically in Africa, after the pandemic. Timelines will have to change. The 2030 targets will have to be redefined, possibly starting with food security and water availability, which are key to survival. SDG 8 has set a target of economic growth and decent work to be accessed by all by 2030 (UNDP, 2021a). With a pandemic that has decimated livelihoods and lives, and generally turned what was normal on its head, it can be inferred that it is unlikely that this goal will be achieved without considerable effort.

The interconnectedness of all the SDGs is sharply emphasised and, as reported by Lotz-Sisitka et al (2021a, 32)

> *Overall, our findings confirm the impact of the COVID-19 pandemic on the SDGs in Southern Africa…also showing the interrelated nature and intersectional dynamics of the impact of COVID-19 on the many dimensions of life and livelihoods.*

The Lens for Change, as a framework for looking at the impact of COVID-19 on the individual and systems, highlights the need for improvements and change, especially in education. Research and analysis of the findings should be deepened to expand our understanding of what we need to do in the next stage of action, especially in education:

> *We are rather wanting to develop a deeper level of analysis that looks towards structural and systemic transformation of education, which would benefit work across all of the SDGs and beyond.* (Lotz-Sisitka et al, 2021b, 31)

The findings of the #OpenUpYourThinking SADC Researchers' Challenge are discussed in this synopsis in relation to the framework of this Lens for Change.

The Lens for Change is based on two major features that were evident in the findings and are central for survival in a pandemic: how an individual responds and how government systems support communities.

2.3   Responses to the pandemic and capacity to deliver

2.3.1   Individuals

Resilience and moral purpose were routinely identified by researchers as behavioural attributes of individuals who were coping with the pandemic. Individuals were found to experience the pandemic either determined to survive or as passive beings overcome by the threat that is upon them. Those who were managing to survive were found to have certain skills, which they used effectively. These skills helping people to survive were premised on being proactive and looking for solutions within self and others. Individuals who do this consistently are resilient. Resilience, or more specifically, psychological resilience, is understood as 'the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress—such as family and relationship problems, serious health problems, or workplace and financial stressors' (American Psychological Association, 2012).

Resilient people are aware of how they respond in situations of stress and adversity as they are in tune with their emotional reactions. Furthermore, they can usually understand and interpret the reactions of those around them. Resilient people can maintain control of a situation and usually think of new ways to tackle problems; in other words, being able to problem-solve, to have insight, to be innovative and to seek help from the broader community are characteristics of those who tend to cope better in a crisis, and by extension, these individuals exhibit reduced anxiety and stress levels (American Psychological Association, 2012). In the research, anxiety and stress were common amongst a majority of people who were interviewed. Those who were less stressed included entrepreneurs who sought solutions in situations of extreme challenge. One major finding was that psychosocial support for those in dire stress was not easily available in rural communities, if at all.

The importance of resilience cannot be underestimated as a response to a disaster such as the COVID-19 pandemic which attacked from all fronts. Resilience is especially important where inequality is a norm and access to resources is extremely limited. The research found, moreover, that individuals who were coping with, and surviving, the pandemic showed not just resilience, but also moral purpose.

Moral purpose is defined as a 'value that, when articulated, appeals to the innate sense held by some individuals of what is right and what is worthwhile' (Mourkogiannis, 2005, 1). The educationist, Michael Fullan, explained moral purpose as being 'principled behaviour connected to something greater than ourselves that relates to human and social development' (2002, 1).

Knowing what is worthwhile and working for the betterment of all, not just oneself, is sorely needed in a time when both individual and society's survival is under threat, when the fabric of society is being torn apart. The research showed that many individuals who were resilient and had some exposure to formal education or skills training akin to their business needs, had problem-solving skills and were able to find or create income-producing work; notably, most did so within a paradigm of moral purpose. This is not to say that those without exposure to education are not resilient, but it does underline a fact that education in some form seems to have helped certain individuals to develop their own income-producing activities during this pandemic. Interestingly, the resilience of teachers was a specific concern as the research showed that there was a reluctance to engage with ERT, either because the infrastructure was not there or because of fear of the pandemic, which in turn led to a lack of motivation to acquire the necessary skills to deliver ERT:

> *Teachers' fear of the pandemic also contributed to their reluctance to be trained in ERT. The unequal distribution of teaching equipment, internet and connectivity, the rural/urban divide, the gaps between the rich and the poor, all affected the possibilities of training and quality ERT provision across the board.* (Villet, et al, 2020a, 31)

Considering the importance of teachers in keeping some form of learning going as a norm within the community, the resilience of teachers to be innovative and find ways to keep learning going raises a concern.

Moral purpose was a contributing force in the work of people identified as resilient: they saw their activities as necessary for their own survival as well as that of the family and community. Villet et al (2020a, 34) stated:

> *This pandemic made us realise how connected we all are to the global world and to each other… Unless we substantially reform the ways in which we conduct education, the demands of the global world will remain out of reach of most African and SADC youth, and the social tragedies of our cities and rural areas will deepen. Moral purpose must drive our efforts to create an educational culture that will be better for all of us and our children.*

That moral purpose and resilience were the cornerstones of how individuals were able to cope and survive is a major finding in the research.

Resilience and moral purpose were routinely identified by researchers as behavioural attributes of individuals who were coping with the pandemic.

2.3.2   Education and government systems

Interestingly, the SADC region was relatively quick to respond to the pandemic by closing borders and putting in place lockdowns with varying rules and controls. By April 2020, measures were actively in place. Writing in *Southern Africa Today* on 3 April 2020, Kumbirai Nhongo said:

> *Extraordinary times call for extraordinary measures and the SADC region is doing just that to combat the novel coronavirus that causes COVID-19. The priority for SADC Member States in their response to COVID-19 has focused on the health and wellbeing of the public and has involved efforts to strengthen the public health systems while implementing measures to curtail the spread of the virus, amid concerns that national medical facilities could be overwhelmed as the virus spreads.*
> (2020, 1)

One critical finding from the Research Challenge was that, across the SADC, people tended to respond similarly, with most relying heavily on their governments to lead the way. Yet the expected government responses were hampered by underlying structural and everyday living issues, present before COVID-19 took hold. There is an observed general weakness in governments that work in silos and not necessarily collaboratively across departments. The pandemic does not respect the bureaucracy of silos and hierarchical structures.

It must also be acknowledged that it is the youth who are bearing the brunt of the disruption in education caused by the pandemic, and it is also the youth that could provide the answers to what should happen next. But the longer that government departments and specifically educational institutions are not functioning fully, the greater the damage to the psychological welfare of children and young adults, and to communities as a whole.

The research also reflected on how educational institutions responded to the pandemic. In particular, three levels of the education system, schools, TVET colleges and higher education institutions (HEIs), were scrutinised carefully, and connections between them, not just in the conventional way, but as institutions that should be 'leading and supporting' and providing survival and coping skills training, were analysed.

The findings show that helping individuals to cope effectively was missing from the practice and the curriculum at each level. In the Lens for Change framework, 'Skills for Survival' is an essential element and is shown as a connecting factor between the levels of education. Furthermore, when examining the preparedness of educational institutions to cope with the pandemic, one critical finding was that insufficient information was shared in HEIs on how to systematically manage the pandemic. Frantz et al (2020a) found the availability of crisis response plans and multi-stakeholder task units was identified as a key factor that could significantly facilitate responsiveness. The implication is that the level of responsiveness by HEIs was hampered by the lack of coherent and comprehensive response plans. In addition, governments were apparently slow to engage with HEIs, forcing them to make their own decisions on how to cope with the government lockdowns and the student body. The larger community, on the other hand, was well briefed via media outlets. This was particularly evident in South Africa where the government held many media briefings that were broadcast on national television.

In the sector of the education system that is responsible for upskilling of teachers, and unlike colleagues in the HEIs, Villet et al (2020a, 34) found that teachers were not prepared for the introduction of ERT, and there was an evident difference between teachers in the rural and urban areas:

> *Evidence drawn from this research clearly indicated that some learners, students, teachers and teacher educators could not navigate 'the jungle' or enter 'a brave new world' of online teaching and learning due to unaffordability of data and unavailability of internet connectivity and network coverage, including a lack of access to basic amenities such as electricity and clean, running water.*

In SADC, a majority of teachers work in the rural areas, and so the educational progress of many learners was severely hampered by not receiving any support via online learning. Access to television was not universally possible in rural areas, and so even briefings about the pandemic were not seen by all. In communities, teachers are often not living in the same geographical areas as the schools in which they teach. This situation exasperated any opportunities for teaching (du Plessis & Mestry, 2019).

Schools

Each research report looked at formal education in the SADC and the challenges that arose as schools and other learning centres closed and isolation from peers became a norm. While the studies of all pupils were compromised, it was found by Muchanga et al (2020) that female learners were more adversely affected. For example, they were given more chores to do while being at home, and when an opportunity to learn through television channels presented itself, girl pupils were not necessarily able to engage as the family chores came first. In addition, Muchanga et al (2020) found that female learners feared sexual abuse and possible pregnancy while confined to being at home during the day. This was confirmed in a finding by Lotz-Sisitka et al (2021b) where a respondent wrote in a questionnaire:

> *There are issues on girls and women. Many girls and some women have fallen into the trap of sexual abuse as they try to fend for themselves. Some girls have gone into early marriages with some feeling that they will find what they are looking for.*

This quote highlights the many difficulties facing youth, especially females, living in stressed and poor conditions exacerbated by the pandemic. Some countries, like South Africa, assumed that learners would have access to television and places where they could listen to lessons, but this was not strictly true. It was found, in many cases, there was a lack of access to e-learning infrastructure and knowledge and how to use new technologies, compounded by a lack of electricity and television/radio signals, preventing access to learning opportunities. In wealthier communities, access to television and online learning was not a challenge, and learners progressed in their studies. Noticeably, the gap between advantaged and disadvantaged pupils in covering the curriculum and their overall studies had widened during the pandemic (Villet et al, 2020a).

The lack of electricity and resources was common to all SADC countries, specifically in the rural areas. In South Africa, based on the interviews conducted, teachers and learners from the more disadvantaged rural schools indicated that teaching and learning stopped for them when schools closed. Governments moved to address this with the establishment of remote teaching channels. However, Villet et al's (2020a) findings on teachers' readiness for remote teaching and the possibilities for addressing associated challenges showed that many teachers felt demotivated to learn when at home and lacked self-discipline.

Even though governments felt that remote teaching was the only answer at the time, teachers expressed feelings of anxiety and exclusion and did not see that remote teaching was an opportunity to do something different, possibly better and more appropriate. 'In SADC countries, 42% have opted for television broadcasting of classes, for both primary and secondary level, whilst 21% are using radio channels to broadcast classes' (Villet et al, 2020a, 2). There was a substantive move to apply different platforms to reach pupils. Demotivated teachers were pushed to move into distance learning in an effort to reach all children, even though it was recognised that lessons would not reach everyone (Villet et al, 2020a).

Villet et al (2020a) found that any training provided to teachers to help them change to remote teaching tended to be of a technical nature, such as how to use computers for Zoom meetings, or Google Meet, but there was no psychosocial support, which was the essential ingredient to enable teachers to feel more confident when addressing pupils and family members and also to directly help pupils. Even though SADC government departments rallied to the call for distance learning, not enough was done to prepare all teachers and to support them throughout the process. Thus, the move to remote learning has heightened inequality. It has also increased the divide between government and private schools (Anciano, Cooper-Knock, Dube, Majola & Papane, 2020), the latter having more funding available to provide the necessary resources.

On the few occasions where remote teaching was a success, teachers said that working from home saved on travel costs and travel time and brought many teachers into better and more regular contact with parents. They also had more time to prepare lessons. Teachers who had a high level of technical skills adapted well and used the opportunity to interact more intensely with their students (Villet, et al, 2020a).

According to the International Task Force on Teachers for Education 2030, nearly 63 million primary and secondary school teachers across the world were affected by the pandemic. Pupils who were due to write local and international exams were severely affected, and some were not able to write at all (2020). Remote teaching has not necessarily helped these pupils and 2020/21 may produce, in part, a lost generation across the SADC region (United Nations Children's Emergency Fund, 2020).

In Namibia, 'the national television and radio services were called upon to make time slots for broadcasting lessons to learners available. Information technology (IT) companies such as Telecom and Mobile Telecommunication Company (MTC) were enlisted to supply internet devices and data bundles at reduced costs to students and teachers' (Villet et al, 2020a). However, in Tanzania, limited remote learning took place, even with government intervention to assist with internet access and in collaboration with the private sector (Villet et al, 2020a).

One of the prominent steps taken was ERT as a temporary solution to the problem of schooling during the pandemic. This took the form of an effort to create an avenue for teaching and learning across Southern Africa (Moore et al, 2020; Villet et al, 2020a). However, the use of ERT as a way forward comes with challenges of access to infrastructure such as internet access, computers, and a constant electricity supply; and accessing radio and television modes of teaching at specific times was a challenge in the remote areas of Southern Africa (Villet et al, 2020a).

Nine countries (Eswatini, Malawi, Mauritius, Mozambique, Namibia, Tanzania, South Africa, Zambia, and Zimbabwe) among the 16 SADC Member States were researched as to their readiness for an ERT mode of teaching during COVID-19. Villet et al (2020b) concluded that technology does provide the means to address some inequalities in education and that there was a realisation amongst countries that they were more globally connected than was thought. There was a further realisation that learning remotely would become a new norm.

> *With few exceptions, the playbook to assure learning continuity was broadly the same: provision educational content through a technology portal, whether the internet, TV or radio. Perhaps this was the only option in light of the restrictions on in-person contact. …Was there a model that would have given greater weight to inclusion and equity by being less reliant on technology that is far from universally accessible?* (Tawil, 2020)

To fully realise the benefits of technology as a means to averting interruptions to education, teachers and learners need to be ready to adopt remote and online learning, and the necessary infrastructure needs to be in place. The moral purpose to provide young people with good quality education should be the driver that ensures this happens.

An example of this, and of global connectedness, is demonstrated by *The Global Partnership for Education*[2] (GPE) that allocated a grant to Malawi for the training of teachers in open and distance learning modalities (GPE, 2020, as cited in Villet et al, 2020a), as well as providing for the preparation of schools for safe reopening and the development of teacher kits (with protective equipment) to support education in Zimbabwe during the pandemic (GPE, 2020, as cited in Villet, et al, 2020). Some countries are perceived as being more needy than others by the international community, in terms of extremely high registered levels of poverty and similarly poor infrastructure across all education institutions.

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2   https://www.globalpartnership.org
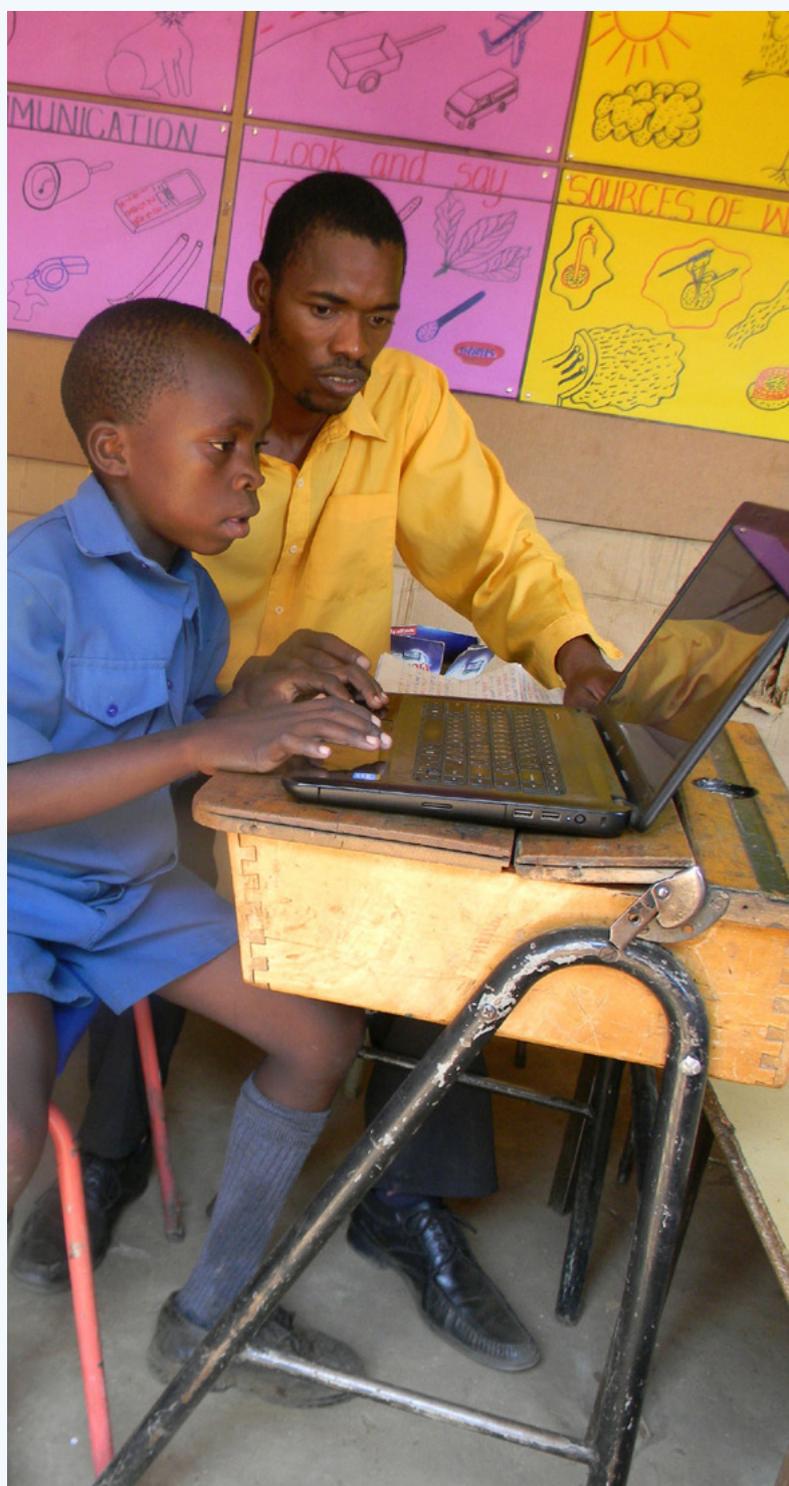
Tertiary education

TVET colleges

During a disaster such as a pandemic, it is especially important for young people to be able to earn some money to ensure their survival, and vocational or practical skills play an important role. Moreover, TVET systems appear to be central to a 'build back better' approach, as having relevant vocational skills has been shown to lead to income-producing work and enhanced entrepreneurial activities (Ramsarup et al (2020, 29). However, vocational skills training as stand-alone courses rather than as components of formal, accredited courses are not generally offered by TVET colleges.

As reported by Ramsarup et al (2020, 32), the skills used in running the selected case study businesses did not necessarily require formal qualifications but had been picked up by youth in a variety of ways, from attending formal education to experience of everyday living. The researchers showed how the individuals involved in the selected jobs responded to the initial stages of COVID-19 lockdown, and thereafter how they maintained or adapted to new opportunities as they arose. In all cases, how individuals supported their livelihoods was examined. The case studies were:

- Soap producer, Mozambique.

- Recycled bottle top basket, and plastic bag and floor wax entrepreneurs in Lusaka, Zambia.

- Informal metalworkers, Mbare Siay So in Harare, Zimbabwe.

- Tuckshop owners in Francistown, Botswana.

- Small-scale farmers in Cape Town, South Africa and Lusaka, Zambia.

- TVET educators in Mozambique and Eswatini.

First and foremost, the youth involved in these income-producing ventures were highly adaptable and resilient individuals. They all had had some form of formal education, from basic to more advanced, and they were motivated to make money in order to subsist. The researchers concluded that their coping and survival skills had not been learnt from a formal TVET college curriculum.

Ramsarup et al (2020, 32) used a framework developed by Guile and Unwin (2019) to display the skills and knowledge needed for the work undertaken in the case studies, and two of these are shown in the table below, as examples.

The entrepreneurs had sufficient knowledge and skills to undertake the tasks at hand and had obtained these, not from a formal training institution but from other sources. The entrepreneurs had gained skills from having some exposure to the general education system and others in the community, which was sufficient to encourage each to try their hand at developing a product to sell. For the future, TVET colleges are well positioned to provide skills training in many different ways to encourage entrepreneurship, but this will require thinking outside of the box.

Occupation	Task	Skills and Knowledge	Theoretical knowledge	Technical tools
Soap Maker	• Making soap from coconut waste. • Measuring ingredients.	Understanding of: • Ingredient qualities and sequence of mixing. • Setting time for soap. • Fire boiling intensity.	• Soap production training. • Reading of manuals. • Watching videos.	• Cooking pan. • Soap moulds and dishes. • Measuring and cutting blades. • Buckets.
Basket Maker	• Making of handbags from plastic waste.	• Knowing how to knit baskets from strips of plastic bags.	• Workshop training. • Tailoring training.	• Knitting needles.

A common thread across the findings in all the themes is that education systems in the SADC did not provide enough basic skills training to enable individuals to subsist, let alone build more intricate, adaptive forms of knowledge. Ramsarup et al (2020, 34) found that young people who were able to survive during the pandemic had the following attributes:

- The adaptive capacity to withstand a crisis such as the pandemic and the associated economic and logistical impacts – critical for people's livelihoods;

- The ability to adapt and adjust their practices to seek new opportunities;

- The recognition that waste or by-products from manufacturing could be a valuable source of materials or ingredients for products that generate an income – the pandemic reiterated and, in some instances, initiated green economic practices;

- Access to online channels for trade or learning.

They also found that:

- For online learning, the processes for delivering vocational instruction, enhanced IT infrastructure and access to computers, smartphones and data/Wi-Fi for students are crucial.

- Technical, interpersonal, and embodied (physical conduct) dimensions of expertise mean adaptability and survival. (Ramsarup et al, 2020, 35)

These findings cut across four of the six research themes and reflect issues that relate to the individual at a personal level and to the availability of resources necessary for coping and survival.

Ramsarup et al concluded that 'individuals need…to learn or implement financial interventions to reduce their vulnerability' (2020, 34). Youth, if possible, should seek to acquire more skills at the post-school level for better self-preservation, as their survival after the pandemic will be equally challenging. The more skilled an individual is, the less likely is their need for reliance on others.

Ramsarup et al (2020) found that across the SADC region, where vocational skills training was offered, a more proactive response to the pandemic was evident, supported by success stories that were being reported in the media. Unfortunately, however, many TVET colleges were caught unawares by the pandemic and did not adapt and respond quickly enough. This differed across SADC countries, but even in South Africa, which has the largest number of TVET colleges, there was a delayed response.

In contrast, in Botswana's TVET colleges, the response to the pandemic was proactive and positive. The colleges mobilised valuable resources to counteract the influence of the pandemic and produced skilled, hands-on, marketable human capital, capable of and equipped with competitive knowledge to impact the economy of the country (Mosinyi, 2020). The colleges provided appropriate skills training at the required level. But even in Botswana, unplanned electricity outages and lack of access to resources, wide-spread problems across the SADC region, hindered progress and remote teaching in many TVET colleges. Similar to school pupils, youth were unable to learn because they could not access the trade and learning channels on television nor attend the colleges in person.

In Eswatini, the research showed that the process of e-teaching and e-learning was common practice in some schools but not in TVET colleges. An opportunity for the colleges to focus on blended, digital learning when face-to-face learning is not possible existed, but it took time to implement the change, and the need during the pandemic was immediate and unrelenting. The main challenge was, at the time of the research, to develop skills-based courses further and change teaching from face-to-face sessions to online lessons. Unfortunately, this did not happen.

In Mozambique, 181 TVET colleges closed due to the COVID-19 pandemic (Ramsarup et al, 2020, 26). The practical classes requiring physical contact in the field or laboratory work were particularly affected. Courses that could have been taught by distance were impeded as there were no IT resources in place, and the learners also did not have IT access. Connectivity was a real challenge because of data costs, and this led to a disparity in the teaching and learning process, especially for rural-based learners. Learning new skills and distance learning was more challenging for youth and vulnerable people in general (Ramsarup et al, 2020, 26). Youth in rural areas fell behind in their studies, further entrenching existing inequality.

In other SADC countries, TVET colleges were closed. Several colleges tried to change direction using media platforms such as Moodle and WhatsApp to share documents and content material. This proved to be an ongoing challenge. Overall, the research showed that TVET colleges were being left behind, were not able to change quickly to e-learning, and governments responded to the needs of basic and higher education first (Mafolo, 2020).

Clear responses to TVET were difficult to discern; generally, more emphasis seems to have been dedicated to basic and higher education in terms of national responses – also, poorly covered in local media (Ramsarup et al, 2020).

Overall, researchers noted that the pandemic in Botswana, Eswatini, Mozambique and South Africa had a significant impact on TVET colleges. Significant disruptions were experienced all round as the mechanisms for changing the way in which knowledge and skills are acquired were not in place.

UNESCO, the World Bank Group and the International Labour Organization conducted an online survey (3 April to 15 May 2020) with 186 respondents from Africa, and the findings resonate with those of the Research Challenge: TVET colleges provided limited training remotely, even where there were expertise and resources to do so, and only managed to offer face-to-face teaching once in a while. The conclusion drawn from the survey was that while TVET colleges are essential to provide skills for survival, they are ill equipped to deliver distance learning, and often this method is not the right one for the skills that are being taught. Generally, blended-learning methods are required, and the vocational skills displayed in the case studies were not provided by TVET colleges.

Universities

HEIs were a subject of the research as the main interface between formal institutions and the workforce. It was thus important to examine their response to the pandemic, from academic and labour perspectives. Citing Torres (2015), Frantz et al (2020a) state:

> *The main mission of HEIs is not only to produce new knowledge but to preserve historical knowledge accumulated by civilisations, societies, communities, and individuals. Innovation, that is, the ability to create knowledge through interdisciplinary, multidisciplinary, or transdisciplinary efforts for the social good is the central element of HEIs. Thus, HEIs contribute to the training and education of the labour force to participate as global citizens in competitive markets.*

For the future, TVET colleges are well positioned to provide skills training in many different ways to encourage entrepreneurship, but this will require thinking outside of the box.

Frantz et al (2020a) focused on looking at the barriers and facilitators of Global Citizen Education (GCED) in all spheres of higher education (universities) as it relates to the collective intention to manage COVID-19. GCED is defined as:

> *...the shared intention of global citizenship education (GCED) is to facilitate the acquisition and assimilation of citizenship skills to engage in and with society in a respectful, considerate and solution-focused approach.* (Franz et al, 2020a)

It was further described as aiming to 'equip citizens to be engaged in and with society in a respectful, considerate and solution-focused approach that considers and accommodates the vulnerable and marginalised' (Frantz et al, 2020a). The issues of food insecurity, access to water and environmental challenges are some of the many urgent global issues that need to be addressed. Finding solutions to these problems is ongoing and country specific, as is how the world responds to these problems in Africa as a whole. Being part of a local and a global network could help to manage the pandemic and eradicate the virus. Universities globally have established partnerships for research, but were the SADC universities ready for collaboration to solve the crisis caused by the pandemic, and how did they respond?

A finding was that GCED in the SADC is largely based on Global North strategies and a southern agency was not present. It is known that Africa plays an important part in the global village, but Africa's voices are seldom heard in the sphere of global citizen debates. Does that mean that SADC universities are not engaged with GCED? The research indicates a willingness by universities to be part of global conversations and evidence of the start of developing a global citizenship identity, not yet completely defined.

Frantz et al (2020a) also found that HEIs were engaged with GCED but not yet at a level of strong commitment. Responding to COVID-19 needs a both regional and collective approach by SADC HEIs. But Frantz et al (2020a) found a lack of coordination across SADC HEIs relating to the pandemic.

This lack of coordination in HEIs was partly due to the inequalities identified between universities in the SADC and also when compared globally. The inequalities were most glaringly apparent in access to resources. For example, SADC universities had limited access to IT equipment and opportunities for learning remotely. Also, when students were sent to their homes, mainly in rural areas, the possibility of communicating with lecturers diminished to nearly nothing due to the lack of connectivity and associated resources.

Unlike TVET colleges, which provide some practical skills training, the course content in HEIs is mainly theoretical and academic. The traditional mode of teaching and learning in universities is through lectures, coupled with written assignments and presentations. The HEI curriculum can, in large part, be delivered through distance learning. The research, however, showed that it was the lack of infrastructure that hindered distance learning, rather than the lack of data, which was supplied to students by the universities. Like school teachers, lecturers were prepared to change to remote learning but were not universally shown how to do this. Furthermore, in rural areas, where communities are primarily concerned with survival and infrastructure is inadequate, remote learning is a challenge. 'Providing strictly online teaching and learning may not be an option for students in resource-constrained contexts. This requires creative thinking in providing options to ALL students.' (Frantz et al, 2020b)

Another finding was that the inequality between SADC universities created feelings of inadequacy among peers, both lecturers and students, across the institutions. This would be most acutely felt in the case of collaborative research projects. To illustrate this, researchers reflected on how the South African government has put in place the National Student Financial Aid Scheme to assist students with paying their fees, as well as the Funza Lushaka Bursary Scheme for those undertaking teacher training. The assistance incudes, as deemed necessary, the provision of technological devices and data at lower rates, and accommodation for postgraduate and international students on campuses (Frantz et al, 2020a). Similar funding opportunities were not evident in most SADC HEIs.

In Malawi, part-time HEI students who learn in their free time have had their study times disrupted, with no form of learning remotely or otherwise available. Namibian students, adhering to the protocols of COVID-19 set up by the government, have found learning difficult to access and follow. Students are at risk of contracting the virus easily (Frantz et al, 2020a), and in this context, having no access to lessons seems low on the list of priorities.

Overall, South African universities are better resourced compared to other universities in SADC, but even these institutions were faced with enormous challenges:

> *Residences in South African universities were closed within a 72-hour period due to the declaration of a national state of disaster, and some students had to return to their adverse and resource-constrained family and community contexts. This had implications for students who were required to learn remotely as their home environments were not conducive to learning.* (Franz et al, 2020a)

Notably, levels of anxiety and demotivation amongst staff and students in HEIs were high, and there were levels of frustration concerning missed classes and content not covered when lockdowns happened. Intensive training to skill lecturers for remote teaching during and after the pandemic was perceived as the way forward and was a positive outcome for the University of Zambia, which embraced the challenge. But training was not universally available in all HEIs across SADC. However, even without training, all HEIs agreed to use remote teaching, where possible, and to try and catch up by providing support through television/radio programmes and take-home packages for parents or caregivers. If the pandemic continues, it will be necessary to devise new ways of further capacitating parents, caregivers and community leaders to support distance learning:

> *…universities demonstrated flexibility and agility in the urgency and the speeds with which digitisation and modernisation were embraced to ensure that the academic year could continue.* (Frantz et al, 2020a)

Muchanga et al (2020, 11) also found that HEIs wanted to and did use e-learning techniques and platforms such as Zoom and Skype during the pandemic to answer students' requests not to lose progress in learning. However, students without access to connectivity and technology were at a disadvantage. 'This risk is especially significant for those socioeconomically discriminated against and excluded youth with no access to Information Communication Technologies that various governments were using as intervention strategies to ensure continuity of learning.' (Muchanga et al (2020, 11)

Similar to Frantz et al (2020a), they found that IT equipment is more readily available in HEIs in better resourced countries. They made the point that how youth react to e-learning is important for it to succeed. If lecturers adapt course content with the purpose of ensuring it is accessible to students, then there is less likelihood of long-term negative consequences, such as withdrawal by students because of difficulties in accessing and applying what is learnt.

Muchanga et al (2020) confirmed that a large portion of youth are excluded from learning because of home circumstances, and the disparity between the poor and those with resources is widening. Frantz et al concluded that it is essential that HEIs move purposefully into distance learning, using multi types of platforms: 'Increased digitisation and modernisation of modes of delivery will increase participation in higher education and develop shared, open-resources' (2020b).

The research also showed that HEIs need to take the voices of their students into account, responding to the problems raised by students and partnering with them to adapt. Youth need to be part of the decision-making process in HEIs as they are better equipped to deal with technology and can provide insights into what content to provide (United Nations Inter-Agency Network on Youth Development, 2020).

2.4   The poverty trap: access to food, water and livelihood

2.4.1   Poverty

The first goal of the SDGs concerns poverty. The goal is 'to end poverty in all its forms everywhere' (United Nations Department of Economic and Social Affairs, n.d.) In doing this,

> *It also aims to ensure social protection for the poor and vulnerable, increase access to basic services and support people harmed by climate-related extreme events and other economic, social, and environmental shocks and disasters.* (Commonwealth of Learning, 2021)

According to The World Bank (2021), the greatest poverty levels are found in southern Asia and Africa, where over 80% of the population live on less than $1.90 a day, and the majority are under 18 years of age. The poverty trap has been deepened by the pandemic and should be addressed first and foremost. For example, in 2020, it was recorded that there was a 39.7% poverty rate in Eswatini, which caused undue stress in a situation where dealing with the pandemic was also paramount. It is envisaged that this rate could increase dramatically if the pandemic is long term (Lotz-Sisitka et al, 2021b, 96). The same can be said for all SADC countries where there are different levels of poverty and dealing with this challenge as well as the pandemic is taking its toll.

Poverty is exacerbated when any source of income from a livelihood diminishes or disappears. This is an obvious statement, but during the pandemic lockdowns stopped people going to work and earning money immediately. They also stopped the informal trader on street corners, the domestic worker who cleaned houses, and the small shop owner who provided the bread and milk, to name but a few. As the extent of the lockdowns increased, so large and small companies closed, and many jobs ceased without any hope of being resuscitated. When the pandemic started to ease, not all jobs reappeared. The blow to poverty-ridden African, including SADC, economies was immediate and devastating.

The Researchers' Challenge took place during the first lockdowns (May to June 2020) when the closure of educational institutions was underway. The researchers observed that work and the potential to earn money was not evident on a grand scale. Only supermarkets and selected food outlets continued to trade, but food supplies were not as plentiful. Family incomes were drastically reduced, and the impact was immediate and unsettling (Lotz-Sisitka et al, 2021b, 99).

2.4.2   Food and water

With a sudden reduction in income and consequently available food, many people, both young and old, would go for weeks without eating proper meals. Young people were particularly hard hit as many pupils relied on school feeding schemes for their main meal. With school closures, the pressure of feeding young people fell back onto already income-constrained families. For example, the research conducted on Zambia found that the COVID-19 pandemic reduced access to food and created levels of uncertainty and anxiety about what the future would hold. At the time of the research, it was not known how long the pandemic would last. Stress levels were extremely high, especially in remote villages where there was uncertainty as to how all would cope with less food, related directly to a reduced income stream (Phiri et al, 2020) and the need for extra food brought about by the closure of schools. For example, in Eswatini, 'Some families now have one meal a day and others sleep on an empty stomach' (Lotz-Sisitka et al, 2021a, 22).

Moreover, local and international non-governmental organisations (NGOs) that traditionally support poor, rural areas, including with the provision of food, were closed down or had a reduced presence because of the pandemic. It is projected that NGOs may find themselves in a worse situation as the pandemic takes a stronger hold, and their funding is diverted to support the provision of basics such as food and water.

In Lesotho, finding food was doubly difficult as the country relies on receiving resources from its neighbour, South Africa:

> *There is a lot of dependency on neighbouring states for food, which led to shortage of most supplies during the lockdown. There was also a clear indication that most people are only consumers and not taking part in production, which was evident when lockdown measures were enforced, leading to some families going without food before the government food basket could be supplied to them.* (Lotz-Sisitka et al, 2021a, 25)

In South Africa, even as a supplier of food to other countries, food insecurity continues to be felt, mostly in rural areas:

> *Food insecurity is by far the worst impact on people in our rural communities whose siblings or parents worked somewhere and now do not have an income due to some being laid off, others being on unpaid leave. People have had to scrape through for food.*
> (Lotz-Sisitka et al, 2021, 22)

> *COVID-19 impacts have led to severe and widespread increases in global food insecurity, affecting vulnerable households in almost every country, with impacts expected to continue through 2021 and into 2022.*
> (World Food Bank, 2021)

With little food to live on, communities are at a greater risk of catching the virus as poor nutrition leads to a compromised immune system and therefore greater vulnerability to illness.

Alongside the challenge of finding food is the challenge of finding clean, drinkable water. 'Water is life' and is certainly as precious as food. During the pandemic, access to water became urgent for all communities. To avoid catching the virus, washing hands with soap and water was advised. A collective adherence to the protocol of using clean water to wash one's hands resonated strongly in SADC as a whole. The research showed that people living in the rural communities found it difficult to access a constant source of clean water (and soap), and so were not able to adhere to the required protocol to stop the spread of the disease. For example, it was found in Zimbabwe:

> *At the end this community has lost its crop due to lack of water for irrigation while at the same time there is shortage of water to allow appropriate washing of hands. All of this is happening while children are out of school, putting pressure on the little food and water supply available to the households.*
> (Lotz-Sisitka, 2021a, 23)

Across Africa in general, including the SADC region, water is a treasured and scarce resource and with the extra pressure from more people being at home and needing washing and drinking water, water resources were reduced to a trickle. In addition, the research on *Education for Sustainable Development* found that in the cities, the constant use of water to wash hands caused water bills to increase, alongside the economic hardships from losing income. For example, in Botswana:

> *Because of higher cost of living in terms of water bills and foodstuff, the economic livelihood had been negatively impacted because I had to spend part of my savings on food and daily sustenance of my family.*
> (Questionnaire respondent, 2020a, cited in Lotz-Sisitka et al, 2021, 25)

The UNDP projected that in the year 2050, at least one in four people will suffer periodic water scarcity across many of the underdeveloped nations due to increased drought, water stress (demand out-strips supply) and desertification (land becomes more arid). The impact of COVID-19 will make the whole issue even more difficult to manage (UNDP Seoul Policy Centre, 2021).

With little food to live on, communities are at a greater risk of catching the virus as poor nutrition leads to a compromised immune system and therefore greater vulnerability to illness.

2.4.3   Livelihoods

In a pandemic, survival becomes foremost in everyone's mind. Ramsarup et al (2020) reported that VET, especially for the youth, is critically important in a time when employment opportunities are curtailed, as VET teaches livelihood skills that can be used to generate an income. For example, it was found that those with vocational skills and a fair dose of resilience were able to subsist by 'initiating green economic practices via the recognition that waste or by-products from manufacturing could be a valuable source of materials or ingredients for products that generate an income' (Ramsarup et al, 2020, 34).

The research on Education for sustainable development: COVID-19 education response intersections with the food, water and economic (livelihoods) crisis across all SADC countries posited a need for a greater emphasis on sustainable livelihoods through green and decent work that will underpin people's ability to earn an income and thus improve their well-being. The research highlighted that those who were successful in developing their own saleable products or services did so from a base level where they could read, had rudimentary mechanical skills, often had attended training courses and were noticeably adaptable. Education, even at a basic level, was evident among those who succeeded in generating an income from waste and/or by-products, added to which were the necessary attribute of resilience, an ability to focus and problem-solve in a time of a crisis, and a collaborative nature. Individuals who succeeded in creating sources of income were empowered as a result of 'taking responsibility for learning, initiating action, and having the ability to overcome challenges' (Ramsarup et al, 2020, 31).

In the six case studies presented in the research, having access to and being able to use the internet and/or social media was a common and requisite skill. For example, WhatsApp was a vital communication tool for small-scale initiatives. Online or face-to-face communication proved to be as important as knowledge-based skills in some businesses. Trust was built between customers and entrepreneurs as the latter believed that customers would buy what they requested and then stocked:

> *…tuck shop owners noted that the food they sold was determined by customer requests. They thus need to trust that the selling of these foods will generate a sustainable income.*
> (Ramsarup et al, 2020, 34)

Central to success in all the case studies was expertise in developing relationships (social capital), drawing on families, friends, and community networks (Oxfam, 2014) to both enhance skills and knowledge but also to ensure an income and their livelihoods.

The findings from Ramsarup's and Oxfam's research (Oxfam, 2013) are important for HEIs and TVET colleges to consider, as to whether they are providing the type of education that is needed.

> *The case studies highlight that vocational skills, knowledge, learning and expertise play a significant role for the interviewees in terms of their ability to adapt and survive during the most severe period of Covid-19 restrictions.*
> (Ramsarup et al, 2020, 34)

The findings raise a question as to whether HEIs and TVET colleges are focused on providing the sort of education that is needed in our current circumstances and going forward. The COVID-19 pandemic has provided an opportunity for HEIs and TVET colleges to rethink the competences and skills they impart to students; a reflection on what skills are taught in the curriculum is needed.

2.5   Access to information – real or fake?

When fake news started to infiltrate, the South African government responded with a collaboration 'between the private sector, non-governmental organisations and government agencies [which] saw the establishment of an anti-misinformation initiative' (Hofmeyr, 2020, 12) and fact-checking and verification of information. Within communities, information on how to deal with the pandemic came mainly from social media outlets such as television and WhatsApp. In the research on the spread of fake news in Southern Africa, the survey findings from respondents in Eswatini, Malawi and Zimbabwe indicated that '91% reported that the information made them feel anxious' and 'learners had mixed feelings about going back to school' (Hofmeyr, 2020, 9). These findings confirm that individuals were stressed and not certain what to do next. The research also found that when advice was given, it was deemed rational and sensible, but the messages were not adequate considering the under-resourced contexts in many countries, especially the rural settings, and the lack of skills to interpret what news was being spread (Hofmeyr, 2020, 14). The SADC, and indeed all African countries, needed a nuanced response with a layered and measured approach to a) address the major issue of inequality and associated resource differences, both in broad society and in institutions, and b) to inform people about what to do during the pandemic. The request to physically/socially distance, wash your hands and keep away from crowds is almost impossible to adhere to in the jam-packed living conditions found in informal or peri-urban areas in SADC countries (Smit, 2020); it is more in keeping with better resourced, first world societies and yet is seen as essential to controlling the spread of COVID-19.

It is a fundamental human right for governments to provide Information about the pandemic to all members of society. To do so requires many channels for acquiring information to be available:

1.   *Public access to information serves public health and economic goals and should be seen as part of the response and not as an external burden.*

2.   *The right to information is a fundamental human right. The experience of many countries shows that it is possible to maintain right to information systems during a health emergency.*

3.   *States are under a positive obligation to disclose on a proactive basis key emergency-related health, budgetary, policy-making, procurement, economic, benefits-related, and other information.* (UNESCO, 2020b, 1)

Hofmeyr and the research team (Hofmeyr, 2020) looked specifically at fake news and its impact on high school learners in SADC countries in terms of how information is received in schools, but more importantly, whether the information is fake or authentic. Fake news is defined by Wardle (2016) as:

1.   *Authentic material used in the wrong context.*

2.   *Imposter news sites based on clones of trusted news sites.*

3.   *Fake news sites created to deliberately manipulate and falsify information.*

4.   *Fake information presented in graphics, images, and video designed to be highly shareable and so convincing that their authenticity is not questioned.*

5.   *Manipulated content where images and videos have been deliberately altered.*

6.   *Parody content on social media where social commentary is given on specific issues and companies.*

With this broad idea of fake news in mind, the research was conducted over a short, set period of time in mid-2020. In early 2020, the source and impact of the pandemic, which was still relatively unknown, set the stage for fake news and conspiracy theories to flourish as world-wide everyone was grappling with how to manage the virus, and a vaccine was still not fully developed. At the time of the research stories were circulating about where the virus came from and why. There were the conspiracy theories that were listened to and often believed, depending on where you lived, the access you had to news and what media coverage came your way (Zakaria, 2020).

Three Southern Africa countries (Eswatini, Malawi and Zimbabwe) were central in the research process and respondents in these three countries were youth in the 16-19 years age-group. Of the respondents, 52% were male and 48% were female. This sample group was willing and keen to answer questions about the pandemic and whether the news they heard or read was true or fake. It was found that pupils who were at home and had access to the internet became aware of fake news but lacked the critical thinking and literacy skills to distinguish between what is false and what is true and how to check pandemic stories and details.

An important finding was that 84% of the respondents in the 16-19 years age-group understood what fake news means and knew what the consequences are of spreading fake news during the pandemic were. The younger pupils in the 12-15 years age bracket were not able to discern what was fake news and therefore were very vulnerable and could spread fake news very easily. The research did not find any differences between the age ranges of youth and the levels of knowledge on how fake news is spread. It was suggested that a more in-depth study is required to ascertain if younger or older teenagers have some ideas and knowledge on how fake news is spread (Hofmeyr, 2020).

The research found that level of education and age were the two main factors contributing to the spread and acceptance of fake news (Guess, Nagler & Tucker, 2019; Rampersad & Althiyabi, 2020), which suggests that media studies may be a useful curriculum addition in schools. Another finding was that high school pupils get their information through social media platforms and the traditional media, such as newspapers and radio. These were the main sources of information used by youth during lockdowns. The World Health Organization has highlighted that the consequences of misleading information are the spread of fear and anxiety (World Health Organization, 2020). Counselling, post COVID-19, was proposed for school pupils as a support mechanism on how to recognise, avert, and be aware of the consequences of spreading fake news.

The responses to the survey on fake news came from individuals who had access to technology, connectivity and data. This means that the findings are not a true representation of all youth, as they exclude those living in rural areas. The findings must thus be treated with caution. Rural-based youth are likely to feel more isolated from news in general and may be more susceptible to fake news. In rural regions, isolation from news and other sources of information during a pandemic is a real problem. While teachers and parents may be thought to provide sources for checking the veracity of information, a finding from the survey (Hofmeyr, 2021, 12) conducted with a small sample of parents/caregivers and teachers found that they themselves were unsure if they could identify fake news.

An important finding was that 84% of the respondents in the 16-19 years age-group understood what fake news means and knew what the consequences are of spreading fake news during the pandemic were.

2.6   Concluding comments

Referring back to the Lens for Change (Figure 3) and reflecting on the findings, it was shown that coping with the pandemic has to be addressed at the levels of the individual and of systems, all viewed within a framework of inequality. The Lens highlighted several interrelated factors, from environmental concerns to the capacity of educational institutions to respond to the pandemic. Overall, the impact on education and educational institutions was a common thread in all the research. The findings were discussed under three distinct headings: Responses to the pandemic and capacity to deliver; The poverty trap; and Access to information.

The first section covered the impact of the structure and policies of educational institutions on learners and systems during COVID-19. It was learnt that turning around these institutions to meet the challenge of a pandemic is not easy, nor fast, but there are clear pathways that can be followed. All the findings point to educational institutions, in the future, developing a blended learning approach for students, and if possible, now as the pandemic is still not over. The question as to why institutions were not able to adjust quickly relates to some extent to the levels of inequality across the region, where the majority of youth are living in poor rural conditions, which hinders education being delivered to them at home, remotely, in a situation of crisis.

The main educational institution examined was the school, which is only able to deliver good education if teachers are well skilled, motivated and have the necessary Infrastructure to help them deliver. It was shown that in a pandemic, the weaknesses of the schooling system were laid bare, starting with the lack of skills in teachers who were required to adapt and deliver education via ERT, as schools were closed and contact with pupils was nil to minimal. Generally, the SADC education systems did not train teachers to deliver ERT but used television and the radio as a means of communicating and delivering lessons, with varying degrees of success. It was urban teachers who were more able to teach via ERT as they had the infrastructure and ability to find how to access and use technology. It was also shown that there was a reluctance by some teachers to engage with the new technology, and the necessary technology was not available. Because the pandemic spread quickly and was unknown, schools were not able to respond and to service communities ranging from urban to rural. The present school systems were seen as inadequate to cope after the closure of schools and not able to offer something different:

Unequal access to educational opportunity (including effective teaching) due to limited electricity supply, poverty and geographical area (rural and township) affected the participants. (Villet et al, 2020b)

Institutional structures generally do not embrace change quickly, and it took time for schools to even begin to react consistently to their closure. Writing lessons for broadcast also took time. During that initial period of the pandemic the rise of false news was apparent. An anticipated role of any structure would be not to allow misinformation or disinformation to spread.

The use of social media platforms to spread news quickly was evident in the research with the most popular being WhatsApp. When schools are closed the use of platforms such as WhatsApp and Facebook replace the television and radio and are the main means of sending out messages.

To effect change quickly is not straightforward as the modus operandi of an educational institution is by its nature bureaucratic. To overcome the potential inertia, the Lens for Change highlights the individual who is resilient, a good collaborator, a problem solver, plus is flexible, adaptable and is driven by moral purpose, as one who can survive. The environment in which this individual best survives has access to technological resources, especially the internet.

With regard to the systems, the research shows that being educated is necessary and wanted by citizens across the SADC. Not having access to education, not being able to build and receive knowledge and skills hinders personal growth and socioeconomic development. However, there are systemic aspects that can be addressed without spending huge amounts of money. Education is one system where small changes can make a difference, almost immediately. For example, the well-being of youth, as pupils or students, can be addressed and improved on by ensuring counselling is available in schools. Schools have a responsibility to help children to deal with fear and anxiety, as it arises, as well as to teach them how to learn, do schoolwork and be a sociable being. This is equally true for students in TVET colleges and HEIs.

The second set of findings related to what was referred to as the poverty trap. The findings highlighted how systems must change to increase the capacity of individuals to work and survive in a new world, after the pandemic. It is a world of partnerships, survival techniques, entrepreneurship, and technology. But the grip of poverty is very apparent and is referred to often in the findings. The Lens for Change shows us that the inequality that is generated by the lack or scarcity of resources in rural areas and the need for food security and water access cannot be ignored. A multi-solving approach that tackles a range of problems at one time is required and was recommended.

The last section of the findings concerned the way information, especially false news, was disseminated. The research findings confirm that youth generally are aware of what is true, but at the same time some are open to conspiracy theories and cultural influences. There is a lack of checking of facts, and often youth will spread false news without any consideration from whence it came.

> *…older teenagers are most aware of fake news but lack the critical thinking and literacies skills to distinguish between what is false and what is true. This means that they can share false information and makes them very vulnerable to the impact of misleading and harmful posts.* (Hofmeyr, 2020, 15)

It was also found that for governments there is a balancing act between freedom of speech and trying to legislate against the distribution of false news. The more legislation there is, the more citizens will question if governments are trying to hide something. This is turn could cause anxiety and stress.

To counter false news, the government has a major responsibility to keep all informed about what is happening and to do so frequently. Using the education system as well as regular media briefings to keep youth informed is vital. This means using television and community radios, the latter being listened to most frequently.

The next chapter sets down some of the recommendations emerging from the research and possible pathways to start a change process happening.

To counter false news, the government has a major responsibility to keep all informed about what is happening and to do so frequently.
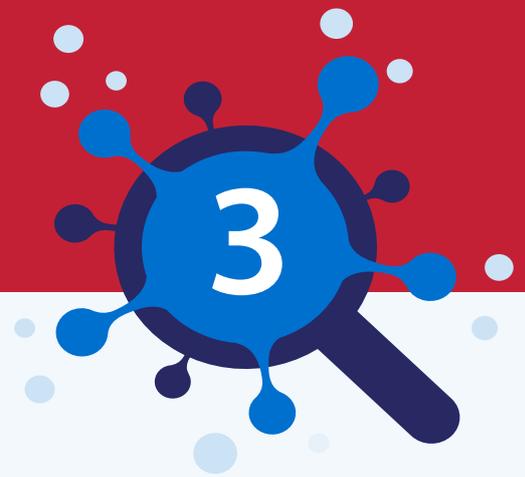
WAY FORWARD AND LEVERS FOR CHANGE

3.1   Giving voice to researchers

Based on their findings, the researchers made some suggestions on what to do next, and these have been grouped as Steps for Action in Figure 4. These steps reflect a moment in time and therefore cannot be considered as definitive answers, but they reflect the voices of the researchers and give a practical and realistic edge to the findings. When examined further, the suggestions indicate systemic problems, and an in-depth examination across a broader spectrum as to what is causing them is required. Analysing systems brings complexity, as no system stands on its own but is interwoven with government policy directives and bureaucracy. The systems are further complicated by the fabric of society, which is about how everyone lives and exists. Within this mix are identifiable levers for change, or leverage points. These are discussed in the second part of this chapter.

Lotz-Sisitka et al (2021b, 19) cite Donella Meadows (1999), who made the important point many years ago that leverage points can be found at several levels of the system, which leads to change being effected. Leverage points, as Meadows explains, are

> *…places in a complex system…where a small shift in one thing can produce big changes in everything… Leverage points are points of power.* (Meadows, 1999, 1 cited in Lotz-Sisitka et al, 2021b, 15)

Recognising and working with leverage points, or levers for change, can be part of multilateralism, where a group of countries work together towards a common goal. An example is the UN working with member countries to achieve common goals, such as the SDGs. It has achieved some form of success, and it is what SADC could consider in this time of a pandemic. Cross-country work requires a consideration of macro systems as levers for change, discussed below.

Appendix A gives the full list of recommendations that have been grouped under five Steps for Change: **1) Development of individuals to withstand a pandemic; 2) Building back systems to cope with a pandemic; 3) Changing institutions: TVET colleges and HEIs; 4) Changing the mindset; and 5) Developing partnerships.** These Steps for Change add to what the Lens for Change, with its strong emphasis on education institutions, depicts. The findings and recommendations from this research help us to reflect on how the pandemic has affected life in the SADC and what has been learnt or observed, which in turn should

lead us 'to do things better'. COVID-19 is not a pandemic that is disappearing fast as new waves of the disease continue to rear their heads across the SADC and the world. Continuous action is needed to combat the disease and to alter the way we respond to it, for the benefit of all. A sample of action associated with the Five Steps is shown in Figure 4 and relate to what could be considered first to address and cope with the impact of the pandemic.

Of the five Steps for Action, one of the most challenging is Changing the Mindset. Getting individuals to think and act differently is always difficult, and the recommendations clearly identify the need to begin a rethinking process, with a focus on changing education practice. Rethinking the hierarchy of education is important. Creative, vocational skills training at TVET colleges to develop resilient, driven individuals who see opportunities in everyday resources should be seen as equally important as the education delivered by HEIs. The mindset change also encourages the voice of youth to be heard in finding their own solutions for sustainable livelihoods. Too often education institutions offer curricula and deliver courses based on top-down decisions. With the emphasis on technology and ensuring distance courses are in place in the future, listening to the voice of youth, who understand and extensively use technology, is essential to the process of reimagining education.

The Action Steps are not sequential but serve to group the recommended actions into themes for consideration by policymakers and education implementers. Ideally, if steps could be actioned simultaneously, the impact of and movement for change would be more intense.

Forming platforms where youth will not feel so isolated and estranged from their peers and friends is a major consideration for the future that is at odds with the developing response by education institutions to create online, distance education and individual learning programmes, which at this point in time will be accessed by a few. It is a logical move in line with global trends but does not deal with the individual's basic need for socialisation. In a paradigm of isolation and separation, resilience is tested to the limit.

> *It is whereby you have no one to help you, you are on your own because of social distance, we are all being by ourselves, not being together.*
> (Muchanga et al, 2020, 37)

Forming platforms where youth will not feel so isolated and estranged from their peers and friends is a major consideration for the future that is at odds with the developing response by education institutions to create online, distance education and individual learning programmes, which at this point in time will be accessed by a few.

STEP 1	**Development of individuals to withstand a pandemic**	• Mainstream Psychosocial Support (PSS) counselling services, not just about the pandemic but on how to cope with everyday trauma and how to build resilience, urgently (Muchanga et al, 2020) • Create lifelong learning opportunities and the ability to acquire new skills quickly, for survival (Frantz et al, 2020a) • Create reflective opportunities for education stakeholders to understand and build up a sense of the importance of moral purpose (Villet et al, 2020a)
STEP 2	**Building back systems to cope with a pandemic**	• Install electricity and connectivity in rural areas and villages, make data bundles affordable and available, and focus on reducing poverty levels (Muchanga et al, 2020) • Develop immediately, a regional strategy for provision of education during emergencies with a focus on poor, vulnerable, excluded/marginalised children, young people, and their teachers (Villet et al, 2020a) • Adapt and support decentralised models of education delivery, possibly a long-term strategy (Villet et al, 2020a)

STEP 3	**Changing institutions: TVET colleges and HEIs**	• Re-engineer the curriculum of relevant courses in HEIs, by recognising the shift from a knowledge-based economy to an innovation economy, to be practical and appropriate for the new paradigm (Frantz et al, 2020a)
		• TVET needs to be rethought and reinvented in terms of:
		  - Reforming curricula
		  - Increasing the focus on occupational programmes
		  - Building and enhancing partnerships with local communities, industry, and government
		  - Becoming responsive to 21st century skills – specifically digitisation (Ramsarup et al, 2020)
		• Provide informal learning, skills and training programmes for economic relief (Lotz-Sisitka et al, 2021a)
		• Train teachers on e-learning; combine blended learning, face-to-face learning and e-learning as a pilot (Muchanga et al, 2020)

STEP 4	**Changing the mindset**	• Involve youth in implementing policies during COVID-19. It is by involving youth that change will happen. (Muchanga et al, 2020) • Vocational learning opportunities provided by NGOs and community colleges or adult training centres could respond to local vocational needs and offer different, relevant pathways to enhanced education (Ramsarup et al, 2020) • Adopt and support decentralised models of education delivery that will ensure equal access to quality education for all (Villet et al, 2020a)
STEP 5	**Developing partnerships**	• Build new relationships and partnerships for education and social learning based on advanced solidarity and community participation (Lotz-Sisitka et al, 2021a) • Collaboration of HEIs should be valued over competitiveness; Universities should demonstrate collegiality and citizenship by working together to solve problems (now and ongoing) (Frantz et al, 2020a) • Beyond criminalising the spread and distribution of false information, governmental and non-governmental partners should develop joint anti-misinformation initiatives to create awareness about fake news, debunk myths about COVID-19, and support fact-checking organisations (Hofmeyr, 2020)

Figure 4: Steps for Action
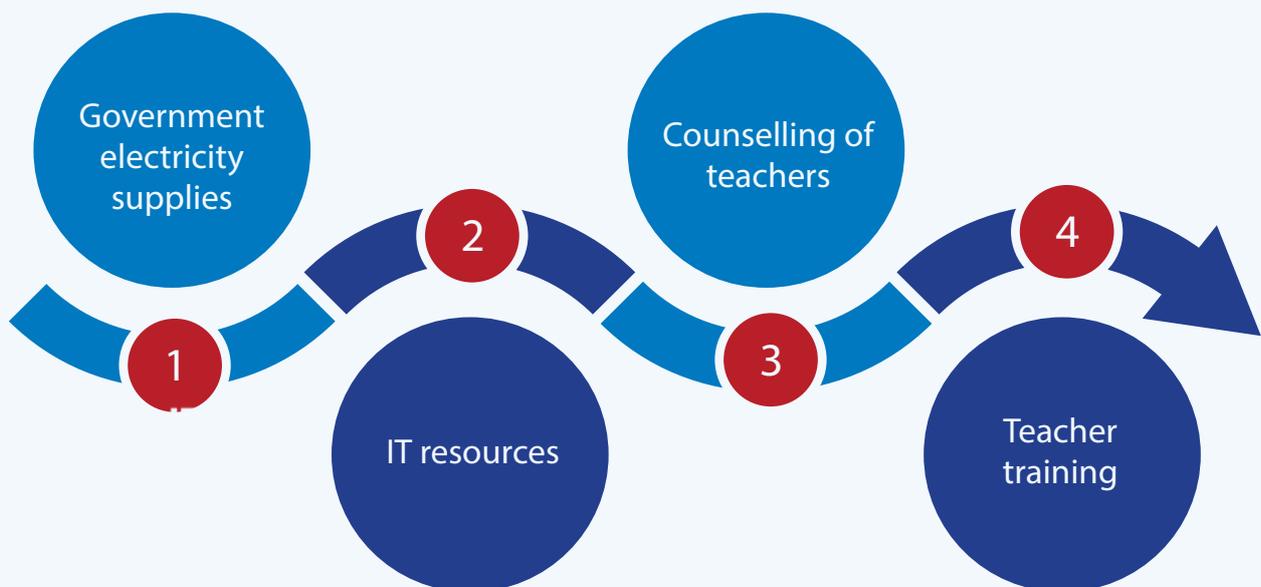
3.2   Identifying levers for change

In Chapter 2, system mismanagement or inertia were identified as problems that needed to be solved so as to address the pandemic holistically. There are no 'stand-alone' systems. All systems are integrated and related to others. Therein lies the first challenge. Where does one start to make a change and how does change happen? Does one start on one system or on several at the same time? Is one system easier to change when compared to others?

A practical example would be to consider school operations and training of teachers, not as separate entities, but as one interconnecting system. Villet et al (2020b) found in their research that for all SADC countries:

- Rural/township students, learners and teachers had the least access to IT tools, equipment, infrastructure, internet, connectivity, electricity, and training to conduct and support remote teaching.

- Teachers experienced a lack of psychosocial, environmental, and content readiness support.

From the statements, the systems that can be considered for action are shown below.

Each system operates on its own, implemented by different government departments, in different places and with different levels of human capacity. But to solve the problems identified, they need to work together. It is about moving out of bureaucratic silos to a different way of working and being. Cutting across all systems is the rural/urban economic divide levels of inequality that define the SADC. The situation requires a multi-solving approach (Climate Interactive, 2021), using maximum human capacity, flexibility, and a deep understanding of human need and driven by moral purpose. Multi-solving is applying problem-solving to all systems at once in order to achieve the best outcome for all.

Government electricity supplies

1

2

IT resources

Counselling of teachers

3

4

Teacher training

Lotz-Sisitka et al (2021b, 45) drew attention to systems theory and associated leverage points (as indicated above). They identified four levels of systems that are interconnected and shape each other through 'relations of emergence' (Lotz-Sisitka et al (2021a, 10). These systems are shown below.

All the research findings can be placed in at least one of the four systems described, and what is key is to look for the leverage points that can be used to effect change, while at the same time answering the question: What are the common levers for change across these systems in individual countries and the SADC, and can they be actioned collectively?

A major finding, stating the obvious but confirmed by the research, was that in a pandemic there is increased poverty, lack of food and water and loss of income. These findings relate to policies, different government departments, institutions and communities and cut across Mega, Macro, Meso and even Micro systems. From understanding the global pandemic, to adjusting policies, to mobilising food suppliers, to offering food parcels to individuals through an NGO scheme, change can be initiated at each of the system levels. But change is more easily achieved at the micro level. In this system, change can happen immediately and is likely to be measurable as fewer layers of complexity are in play (Lotz-Sisitka et al, 2021a).

Changing a policy directive or writing new policy is more difficult, requires extensive consultation, is time consuming and only when the policy is in place can it set a direction for a nation. Through a chain reaction, long or short, solutions to challenges can be found. For example, by ensuring that all children receive a meal at school and that there is fresh running water in communities, a few major problems begin to be addressed; but there is a knock-on effect as giving meals to children and installing water pipes requires funding from government, which in a pandemic, may be constrained due to many competing demands.

Mega — Global capitalism, neo-liberal economic hegemony, climate change, geo-history and global pandemics such as COVID-19

Macro — Larger institutions and structures (e.g. national policies and economies, schooling system)

Meso — Institutional forms, organisation and cultures, functional roles, and practices

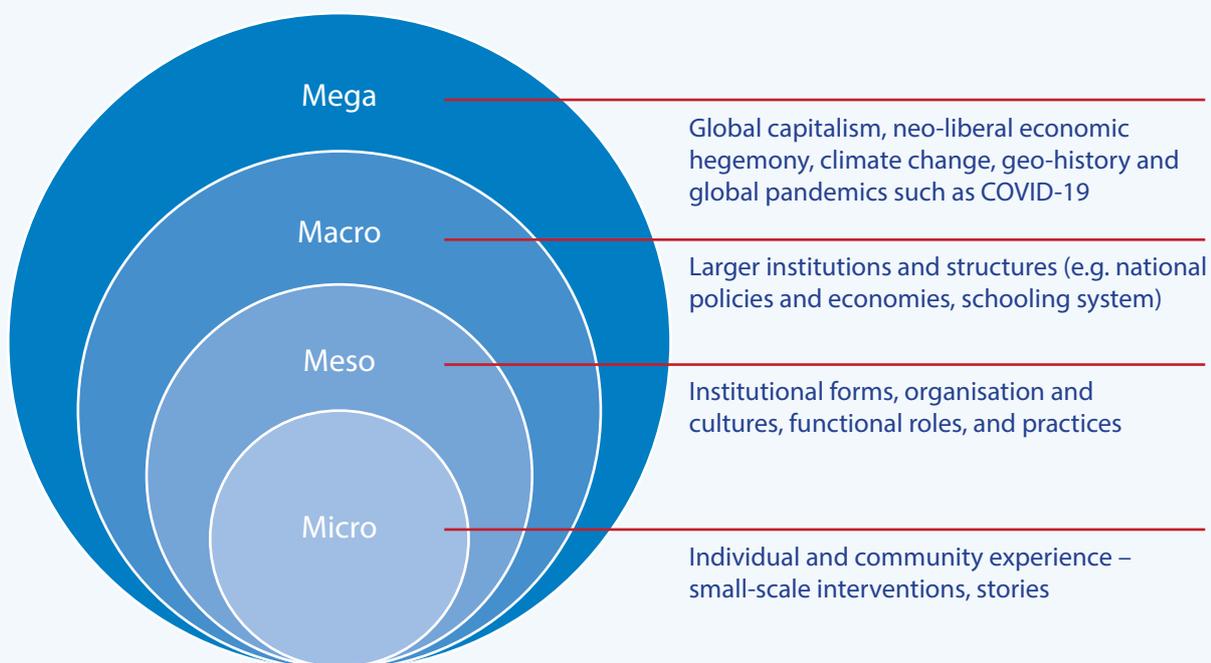**Micro** — Individual and community experience – small-scale interventions, stories

Figure 5: Four Systems (adapted from Urie Bronfenbrenner, 1979, as cited by Lotz-Sisitka et al, 2021a)

Intrinsically tied to actioning change and leveraging a system is judgement and decision-making, which differ in and between countries, from leadership to leadership. Decision-making takes time, but if agreement between the departments that deal with these systems is found, then a plan can be put in place and actioned. The collective action is the lever for change. Lotz-Sisitka et al (2021a, 2) stated:

> **The COVID-19 pandemic has revealed the interconnected nature of people around the world… This amplifies the need for values that emphasise relationality and solidarity.**

The countries in the SADC are connected and could, if they subscribe to the values of relationality and solidarity, together try to solve major issues affecting the region. The SADC countries border onto one another in different configurations; and movement from country to country is not uncommon. Given this, a focused solidarity approach to solving challenges may offer new thinking on the way to proceed.

The SADC is also connected to the rest of the world but has its own unique ethos. The notion of *ubuntu* (which means caring for humanity), resonates with its citizens, even in the most basic of ways. Frantz et al (2020a) showed this when examining the conditions for developing a global citizenship identity and noted that staff and students in the higher education environment in the SADC:

- Demonstrate intergroup empathy;
- Value diversity and social justice;
- Act in response to empathy towards others;
- Engage in intergroup helping; and
- Identify with environmental sustainability.

This reinforces the notion that levers for change should be built from a base of collaboration and care, which are inherent in the African worldview.

But what are the levers for change? The recommended levers for change presented below provide examples of what can be done and suggestions for a way forward. They are not the only leverage points but are the obvious ones, based on the research findings. Further discussion and more research are needed to expand on what is suggested or even to move in a different direction. What is recommended is based on a small sample of interviews and readings.

3.2.1   Micro system levers

CREATE CONDITIONS IN ALL EDUCATION SYSTEMS THAT BUILD AND DEVELOP MORAL PURPOSE AND RESILIENCE

The micro system is about individuals and their responses to a crisis such as a pandemic. The conditions in which the majority of SADC youth live are poor and lacking in resources, and this was reflected in the levels of anxiety that youth felt and expressed when they were unable to go to school, or university/college and also not able to access lessons online. Poverty levels increased as family jobs were lost, and money was scarce. Many youths felt isolated and were not able to see a way forward. Levels of trauma and uncertainty were evident.

But individuals responded to the crisis in different ways. Ramsarup et al (2020) showed how a section of youth demonstrated resilience and were guided by moral purpose as they looked for opportunities to make some money. Data collected from case studies on small-scale farmers in South Africa and Zambia who used the time to grow crops for sale, to soap producers in Mozambique, to tuckshop owners in Botswana showed that with resilience and determination, people survived.

This raises the question as to whether SADC education systems, specifically TVET colleges, adequately develop entrepreneurs and provide the necessary skills, for example, how to turn waste into products that could be sold. Or is it the community and the levels of poverty that hone people's skills, with necessity being the mother of invention? Similarly, some teachers showed levels of resilience and a desire to become trained in the use of distance teaching methods. Even though some were reluctant to try new paradigms, there was a cohort ready to learn how to use platforms such as Zoom and also how to use computers for lesson delivery.

Keeping in place the National COVID-19 task forces was identified as another lever for change:

> **…to ensure partnerships and coordinated action address emergency remote teaching and learning, and specifically issues of access to IT equipment such as laptop computers and smartphones, easy access to internet and connectivity (zero-rated data for education), access to electricity, health, and sanitation standards (as a common good) for all schools and training institutions, among others. (Villet et al, 2020b)**

Similarly, a lever for change could be upskilling teachers in the area of psychosocial support and how to access relevant information. In this lever, it is the individual teacher's response and ability to cope that will promote and nurture change on an individual to individual (teacher to learner) basis. This is a prelude to working collectively at the institutional level.

Another area where a lever of change could be brought into play concerns students and lecturers at HEIs. If there is an agreement between individuals to share research on crisis management and responses to a pandemic or a similar disaster quickly and frequently, and this translates into media briefings that inform the general public, then this would be a lever for change.

Overall, the micro level levers require individuals to react more positively in times of crises and find ways to survive through trauma counselling, training to develop relevant skills and building awareness.

3.2.2   Meso system levers

ENSURE EDUCATIONAL INSTITUTIONS PROVIDE STUDENTS AND LECTURERS WITH THE SKILLS TO CREATE A LIVING

The meso system consists of individuals, groups and the systems they interact with. The research dealt mainly with educational institutions as systems. Ramsarup et al (2020) suggested that TVET colleges, which are central to a skills-based economy, could radically rethink their curricula to focus on:

- Occupational programmes;

- Building partnerships with communities, industry and government; and

- Helping individuals to access trade opportunities through digitalisation.

The restructuring of TVET colleges as a lever of change is recommended and essential if the youth are to be skilled to cope during and after the pandemic.

Restructuring the modus operandi of all education institutions to reflect the new reality induced by COVID-19 underpinned the research findings. What is taught needs to be relevant to what is currently needed and to the future. As Frantz et al (2020a) put it, 'More desirable outcomes were achieved where there is a high level of alignment between strategic positions and implementation strategies.'

Transforming systems in order to solve problems requires a collaborative approach, within countries or between countries. Education starts in the home and progresses

through the primary and secondary to the post-school education systems. There are leverage points for transformation at the intersection of each stage or system.

For example, consider HEIs that are starting to be involved in addressing global citizenship via internationalisation of the curriculum through a dedicated office. A dedicated office in turn shows an intent to pursue the SDGs, which will lead to further re-shaping of the curriculum, to include GCED, for quality delivery in materials and lectures. The development and operations of this office are seen as worthwhile by students when what they do is part of the assessment process. The office and its work then become a lever for change through which the HEI can start to move into a more global setting, changing the curriculum and expanding its vision.

A lever for change in TVET colleges could be when a collective of relevant stakeholders persuade and pressurise educational leaders to transform the colleges' focus to include more on essential skills training, with an associated relevant curriculum, and to use that lever for change to extend into transforming schools to acknowledge skills training, so there is a link between the various levels of education.

ENSURE EDUCATIONAL INSTITUTIONS PROVIDE STUDENTS AND LECTURERS WITH THE ENVIRONMENT AND SKILLS TO CREATE A HEALTHY WAY OF LIVING

Individuals, groups and systems interrelate in and with the environment at the meso system level. Improving the environment is another lever for change and can be actioned by the interrelated activities of greening, combating climate change and developing cleaner environments. The research proposed changes in VET/TVET institutions to make them healthier places for groups of students and lecturers alike:

- Green Campus: reduce the ecological and carbon footprint of students and staff on campuses.

- Green Curriculum: create a new curriculum and train lecturers and students on renewable energy and energy efficiency technologies.

- Green Community: employ a cascading model that involves companies training college stakeholders on how to reduce the carbon footprint on TVET campuses and how to implement green projects to improve the living conditions in surrounding communities.

- Green Culture: change the mindsets and build capacity of lecturers to prepare TVET students for a green industrial labour market where they can apply knowledge and skills learnt.

In South Africa, several TVET colleges have started looking at greening projects with the intention that they become central to the curriculum. Lobbying and persuading college leadership to follow this route is being actively followed. HEIs have also been involved in environmental projects that have a positive impact on the environment such as producing hand sanitiser and water-saving techniques (Lotz-Sisitka et al, 2021b), as shown below:

> *….our role has been to educate teachers and students on water harvesting techniques. And during the Covid-19 lockdown, universities…. have provided the alcohol-based hands washing and sanitisers to the people, schools to be included.*
>
> *…to erect water reservoirs on campus and also drill boreholes to augment municipal water supply and also cushion the students and college community in the event of a water outage.*
>
> *Training Industrial and Mechanical Engineers that can provide technical support in water infrastructure, and that the university also offers water quality testing services to the community.*

Local communities can be brought into the discussion of greening and can become volunteers in projects that affect their homes and living conditions. Green thinking leads to a better environment for living and certainly this mindset change, accompanied by basic skills training, could be a good combination to bring about change for individuals at the micro system level.

This lever fits with SDG 13: Take urgent action to combat climate change and its impacts, and it requires educational institutions to change their curricula and the way they operate to create a greener, healthier environment in which to live and work.

An added impact of this lever is that it could lead to better land sustainability, which would lead to better food security that is needed to combat the impact of a pandemic.

3.2.3   *Macro system levers*

> **CHANGE 'THE LOT' OF THE YOUTH THROUGH EMPLOYMENT INITIATIVES AND APPROPRIATE INFORMATION SHARING**

Youth are in the majority across the SADC region. They are the present and the future. Policy changes would have a major impact on how youth are considered and dealt with. At the time of the research the number of youths recorded per country and therefore affected by COVID-19, was captured in the following table.

> *COVID-19 generally created unprecedented hysteria which seemed to have resulted in a dystopia for many youth in their final year of study and whose trajectories were severely affected by the many learning disruptions consequent to the pandemic.* (Muchanga et al, 2020, 62)

The impact of this pandemic is large and far-reaching. Consideration must be given by policymakers to the overall impact of affected youth when the pandemic is eventually under control. Policy-level decisions affect transformation in the broader society. A macro system level is about applying change on a bigger scale. Macro systems consider larger group structures and institutions working together. A macro system response is necessary to get youth back on track to become employable, active citizens.

So how can 'the lot' of youth be changed? Policymakers should create, as a priority, opportunities for youth to learn and earn. They can be interns, apprentices, and trainees with the opportunity to earn some money and become less anxious about survival. Sandwich degree courses could be offered at a university, whereby the institution offers learning opportunities in set semesters and also a set period of time working in a related industry, usually for six months or a year. The sandwich degree allows for skills development as well as academic achievement.

It is envisaged that a change in policy with support from national government can make this happen at a level that aims to balance improving the economy with increasing relevant skills and qualifications of youth. A marketing campaign to promote information about these employment and training opportunities would be a necessity.

SN	Countries	Number of learers	% distribution by gender	
			F	G
1	DR Congo	19,185,425.00	46.4	53.6
2	Tanzania	13,861,603.00	49.9	50.1
3	Angola	8,692,733.00	45.1	54.9
4	Zambia	3,501,816.00	50.3	49.7
5	Mozambique	7,993,520/00	47.9	52.1
6	Malawi	6,855,636.00	49.9	50.1
7	Zimbabwe	4,130,348.00	49.6	50.4
8	Botswana	595,707.00	50.6	49.4
9	Nambibia	748,375.00	51.6	48.4
10	Eswatini	377,935.00	48.4	51.6
11	South Africa	14,612,546.00	50.5	49.5
	Total	**80,555,644.00**	**48.5**	**51.5**

Table 5: Youth affected by COVID-19
Source: UNESCO, 2020a

In setting up a new norm for teaching and learning, it is important to remember that there are physically challenged youth whose needs cannot be addressed directly by distance learning. As spoken of in other sectors, any change in teaching and learning practice brings with it challenges:

> *…COVID-19 was a disruption to the continuity and routine of the regular classes that they were missing. Learners also indicated missing the in-person aspect of learning where they were able to see their teachers and ask questions for clarity. The new means of learning and teaching has caused stress for learners due to an overburdening workload because additional work had to be completed while attempting to catch up with pre-COVID-19 backlog.* (Muchanga et al, 2020, 50)

Policymakers need to consider a variety of aspects to get education systems up and running again, while simultaneously considering that the health of staff and students is at risk with the pandemic still running through the communities. Prolonged lockdown brings with it the increased risk of depression and mental anxieties, and there is no guarantee that students and pupils will return to studying when the pandemic is over. Furthermore, 'The excluded youth, especially the females, are also vulnerable to other potential risks that might emanate from prolonged school lockdown'. (Muchanga et al, 2020, 50)

It is suggested that the 16 countries in the SADC region need

> *…to undertake detailed baseline studies to inform investment in quality online learning strategies that are inclusive for all, including youth with disabilities. As much as COVID-19 has caused educational havoc across the region, it also offers learning opportunities which can be explored for regional and country context use.*
>
> *The focus for the SADC educational system should, therefore, be on addressing the underlying compounding factors for the current form of e-learning exclusion that had caught many countries unprepared.* (Muchanga et al, 2020, 50)

Youth employment helps youth to acquire new skills and encourages motivation and a willingness to achieve. The sustainability of communities is increased and demotivation amongst youth decreases. Supported by the private sector, this could be an initiative in every country across the SADC. Government initiatives and support structures could dictate a major way to collaborate.

The levers of change are thus government policies that encourage private and public sectors to set in place opportunities for trainee, intern and apprentice placements. In other words, to set up ways to skill and employ youth to lessen poverty levels and improve economic conditions.

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DEVELOP A NETWORK OF UNIVERSITIES AND RESEARCH PARTNERS IN SADC COUNTRIES TO COLLABORATE AND PROMOTE GLOBAL CITIZENSHIP EDUCATION

</div>

Change at macro level entails transforming large systems. For example, collaboration in research across the SADC region allows countries to look outwards as well as reflect inwards. Researchers could collaborate through debates on new ideas that could encourage education thinkers, policymakers and planners to inform a better way forward. The pandemic has shown that SADC can learn from cooperating and working together on key lessons that will help them and the continent of Africa respond to other similar challenges should they occur in the future.

Universities should be leaders in the education debate, not from their traditional position of custodians of knowledge, but as partners with other institutions to research and create a better education system at all levels (suggestions for possible new research by the young researchers is shown in Appendix C). Frantz et al (2020b) found from a rapid review that HEIs should:

- *Recognise the shift from a knowledge-based economy to an innovation economy;*

- *Be socially just, equitable and facilitate diversity and inclusivity; and*

- *Promote contextual relevance in research and knowledge production.*

To do this, university structures and functions must be encouraged to transform after the COVID-19 pandemic has disappeared. Being equipped to respond more quickly and have readily available plans to address crises and influence government thinking is no longer an option. These measures must be in place. Universities are leaders and should be proactive. Collaborative thinking and working on plans together creates a platform for systems change and is a major recommendation of the research report.

This lever for change then, at the macro level, is to collaborate across countries and across systems of research so as to nurture and develop a SADC regional research response to improve countries' economies through innovation, collaboration and problem-solving. It involves institutions and government policymakers and implementers who have to think at a higher level of what is needed and what level of research should be supported. It is entirely different from normal research and should be conducted with oversight from cross-country advisory teams and experienced individuals. This research needs to stand up to scrutiny by global players and to offer insight for the global scene. Overall, the impact of the research will be reflected in regional improvement and better global engagements.

Appendix B outlines some suggested and possible actions points for policymakers, teachers, researchers, communities and HEIs. These are detailed recommendations that can be gleaned from the research and have a logic to them. This is not a finite set of actions but rather some examples for immediate consideration.

3.3   Closing comments

The findings of the #OpenUpYourThinking Researchers' Challenge lead firstly to a set of immediate Steps for Action that can be taken up. They are measurable and will resonate well with policymakers and those involved in educational institutions.

The second level of recommendations involves identifying levers for change, and these are more nuanced, requiring deep systems thinking and involvement of different levels of stakeholders. Five levers for change at different system levels emerged from the research findings. Two levers are at the meso level and entail changing the role of education institutions as recommended in the research. Reflection and strategic planning on the use of the identified levers involving all relevant stakeholders is the recommended starting point. The selected levers have the potential to transform systems for the benefit of both the individual and the many. By placing and actioning the recommended levers of change centrally, it is envisaged there will be many areas of impact. Governments will find actioning at the micro and meso levels much easier than at the macro level, which requires more stakeholders to be involved and has layers of complexity requiring different ways of working and thinking.

Systems thinking, through identifying levers of change, can lead to new ways of organising and doing things, including in education. Through actioning the levers for change, education systems can be better prepared for future crises, sustaining learning and individual growth.

In the international field Michael Fullan (2016), a leading thinker in education, has developed a pragmatic approach to systems thinking. He has identified eight elements of sustainability that leaders need to address so that change can occur and become embedded. There is clear alignment between his propositions and those suggested by Lotz-Sisitka et al (2021) who examined the ways systems need to change to transform education for a sustainable future. Fullan's (2016, 10-14) eight elements are:

Public service with a moral purpose	Moral purpose must transcend the individual to become a quality of organisations and the system itself.
Commitment to changing context at all levels	Changing whole systems means changing the entire context in which people work.
Lateral capacity building through networks	Lateral capacity means deliberate strategies where peers learn from each other – across schools…
New vertical co-dependent relationships	There will always be a tension between local and vertical authority. Systems thinking means that both parties are empowered and move towards mutual influence.
Deep learning	Sustainability requires continuous improvement, adaptation and collective problem solving in the face of complex challenges that keep arising. Going beyond the standards plateau by definition requires deeper solutions.
Dual commitment to short-term and long-term results	Short term progress can be accomplished at the expense of the mid- to long-term, but this need not necessarily be the case…intervene in situations…all the while seeking deeper change which could pay off down the road.
Cyclical energising	Sustainability…is cyclical for two reasons. One has to do with energy and the other with periodic plateaus where additional time and ingenuity are required for the next adaptive breakthrough.
The long level of leadership	If a system is to be transformed, leadership at all levels must be the primary engine…we need a system laced with leaders who are trained to think in bigger terms and to act in ways that affect larger parts of the system.

These eight points for systems thinking underpin what the researchers have recommended. In all recommendations there is a call for leaders to give direction, to act fast and to do things differently. Nothing will change unless leaders act, and Fullan's recognition that leaders at all levels are essential in the systems thinking approach confirms what is sometimes not said directly. Leaders who can think from micro to macro levels are required to give flesh to ideas and to produce new ways of doing and being, especially in education. Fullan also confirms the importance of moral purpose, not only at an individual level but also as an organisational mantra. To change a society during and after a pandemic, commitment to a greater ideal for the good of all is necessary. Even though individual survival is paramount, consideration for others as this journey is travelled is part of creating collaborative communities that embody the spirit of *ubuntu*. This resonates with the research recommendations.

Inevitably, changing a system cannot be done in isolation. It requires the whole system to change, and Fullan sees this as 'changing the context at all levels' (2016). If changes are made to HEIs and TVET colleges, then changes to the schooling system will be inevitable. It will be impossible to hold one system back in the change process, and systems thinkers know this as they see the bigger picture.

Lotz-Sisitka et al (2021a) give a further new perspective on how the recommendations (Steps for Action and Change Levers) can be taken forward. These recommendations provide direction and the best ways to work and also clearly define the levels and changes that can be addressed at the same time. Essentially, systems thinking can be seen as the basis for transformation and lever(s) for change as mechanisms to kick-start the process. Ensuring that the right levers of change have been chosen is a result of deep systems thinking. Addressing the dire consequences of the pandemic through raising questions and working at different systemic levels at the same time, has hopefully, engendered the energy and a strong purpose for change. Research internationally supports what was found by the SADC research team. Changing systems to sustain change, then, is a given.

However, to make the change process seem simplistic is not to give it the deep attention it deserves. This synthesis and drawing out of the recommendations acknowledge that what is presented in this synopsis is based on research using a small data set, collected in a specific moment in time and interpreted through a certain lens. The findings are the reflection of individuals across SADC countries that have different cultural, financial and transformation parameters; but are they enough to give direction for transformation? Each country will need to decide what is possible and what needs more examination.

Research is only as useful as the willingness of changemakers in government systems and institutions to make a difference.

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APPENDIX A: Recommendations – Five steps for change

Step 1: Development of Individuals to withstand a pandemic

- Create educational approaches to help to build resilience (Lotz-Sisitka et al, 2021a) in all stakeholders.

- Strengthen peoples' ability to respond, their agency and capabilities for addressing immediate challenges as well as longer term opportunities for change and transformation of society (Lotz-Sisitka et al, 2021).

- Mainstream Psychosocial Support (PSS) counselling services, not just about the pandemic but on how to cope with everyday trauma and how to build resilience, urgently (Muchanga et al, 2020).

- Create lifelong learning opportunities and the ability to acquire new skills quickly for survival (Frantz et al, 2020a).

- Provide informal learning, skills training and other programme for economic relief (Lotz-Sisitka et al, 2021a).

- Develop parents' capacity (and resilience) to support their children. Build on what is already in place in the immediate- and medium- term (Villet et al, 2020a).

- Focus all training for teacher/learners on PSS competencies for coping during a crisis and motivate all to continue on their academic paths; link this to parents as well (Villet et al, 2020a).

- Encourage groups of activists and volunteers to tackle fake news problems in their communities through social media conversations (Hofmeyr, 2020).

- Create reflective opportunities for education stakeholders to understand and build up a sense of the importance of moral purpose (Villet et al, 2020a).

Step 2: Building back systems to cope with a pandemic

- Install electricity and connectivity in rural areas and villages, make data bundles affordable and available, and focus on reducing poverty levels (Muchanga et al, 2020).

- Keep national COVID-19 task forces in place to ensure attainment of quality education for all, as a common good (Villet et al, 2020a).

- Urgently develop a regional strategy for provision of education during emergencies with a focus on poor, vulnerable, excluded/marginalised children, young people and their teachers (Villet et al, 2020a).

- Adapt and support decentralised models of education delivery, possibly as a long-term strategy (Villet et al, 2020a).

- Governments should redouble their efforts to counteract false information through well considered, comprehensive communication strategies, using every means possible to display and disseminate accurate information about the novel coronavirus and how to prevent infection (Hofmeyr, 2020).

Step 3: Changing institutions: TVET Colleges and HEIs

- Immediately develop crisis response plans and establish multi-stakeholder task units to facilitate responsiveness (Frantz et al, 2020a).

- Recognise the shift from a knowledge-based economy to an innovation economy and re-engineer the curriculum of relevant courses so that they are practical and appropriate for the new paradigm (Frantz et al, 2020a).

- Recognise the importance of being socially just and equitable institutions that facilitate diversity and inclusivity (Frantz et al, 2020a).

- Strengthen, rethink and reinvent TVET in terms of:
    - o   Reforming curricula;
    - o   Increasing the focus on occupational programmes;
    - o   Building and enhancing partnerships with local communities, industry and government; and
    - o   Becoming responsive to 21st century skills – specifically digitisation (Ramsarup et al, 2020).

- Provide informal learning, skills and training programmes for economic relief (Lotz-Sisitka et al, 2021).

- Start school/college/university radio stations to cater for those at home (Muchanga et al, 2020).

- Train teachers on e-learning: combine blended learning, face-to-face learning and e-learning as a pilot (Muchanga et al, 2020).

- Increase digitisation and modernisation of modes of delivery to increase participation in higher education and develop shared, open resources (Frantz et al, 2020a).

- National education departments should ensure that key media education literacies are included in initial teacher education and continuing teacher professional development programmes so that new and serving teachers learn these essential 21st century skills (Hofmeyr, 2020).

Step 4: Changing the mindset

- Involve youth in implementing policies during COVID-19. It is by involving youth that change will happen (Muchanga et al, 2020).

- Use youth to sort out what is nonsense in news (false news) and what is not. They are able to access various levels of news coverage (Hofmeyr, 2020).

- Vocational learning opportunities provided by non-governmental organisations and community colleges, or adult training centres could respond to local vocational needs and offer different, relevant pathways to enhanced education (Ramsarup et al, 2020).

- National education departments need to review their school curricula to make sure that they include the development of critical thinking and key literacy skills so that learners understand how to detect false information and the dangers of spreading it to enable them to best manage the digital age (Hofmeyr, 2020).

- Decentralised models of education delivery that will ensure equal access to quality education for all should be adopted and supported (Villet et al, 2020a).

Step 5: Developing partnerships

- Build new relationships and partnerships for education and social learning based on advanced solidarity and community participation (Lotz-Sisitka et al, 2021a).

- Devise means to develop parents' capacity to support their children – build on what is already in place (Villet et al, 2020a).

- Value collaboration of HEIs over competitiveness: universities should demonstrate collegiality and citizenship by working together to solve problems – now and ongoing (Frantz et al, 2020a).

- Rapid sharing of research is vital as it can save lives in a pandemic (Frantz et al, 2020a).

- Continuous (collaborative) research efforts are needed to inform policymakers about updated, suitable, complete and adequate information on resolving challenges – associated with new models of learning and teaching (Ramsarup et al, 2020).

- Sharing of resources and strategies is integral to instructors' success in teaching online (Frantz et al, 2020a).

- Beyond criminalising the spread and distribution of false information, governmental and non-governmental partners should develop joint anti-misinformation initiatives to create awareness about fake news, debunk myths about COVID-19 and support fact-checking organisations (Hofmeyr, 2020).

APPENDIX B: Levers for change

These are examples of how levers for change can stimulate action by various groupings.

	Lever 1 Create conditions in all education institutions that build value, including moral purpose and resilience	Lever 2 Educational institutions skill students (and lecturers) to earn a living	Lever 3 Educational institutions provide students (and lecturers) with the environment and skills to create a healthy way of living	
Policymakers	Ensure policies across departments convey the same values, messages. Develop an advocacy campaign around values and caring. Build engagements with NGOs to provide supplementary support and include this in documents.	Convene a meeting with HEIs and TVET colleges to discuss and agree on curriculum changes that focus on capacity building of students with skills for survival.	Environmental policies must be written and disseminated for implementation from HEIs to schools. TVET colleges to lead the initiative.	
HEIs (universities)	Coursework and practice to reflect value statements and application, including diversity and inclusion.	Courses are applicable to a new world. Partnerships across the SADC reflect, where possible, common course objectives. (Open source). Building new from a pandemic to be a focal point.	All courses reflect concerns and increased awareness of the need for a greener economy and lifestyle.	
TVET colleges	Coursework and practice to reflect value statements and application.	Curriculum is revamped to consider training in survival skills and problem-solving. IT platforms in place for connection to others.	Curriculum is revamped to consider training in green awareness and environmental challenges. Resources align with the new curriculum.	
Researchers	All research to reflect values and practices to inform change parameters.	Research on survival skills and how to develop them and where to become a priority for researchers. Active fund raising to be done.	Research on environmental issues and how to develop appropriate skills to become a priority for researchers. Active fund raising to be done.	
Teachers	All pre- and post- training for teachers to reflect values of building resilience and moral purpose, among others.	Survival skills to be included in school activities and food gardens to become essential additions to all rural schools.	Environmental challenges included in curriculum and how to overcome these to be part of school teaching and learning. How to conserve water and use food gardens optimally to be a focal point in rural schools and supported by classroom and school activities.	
Communities	Campaigns on psychosocial support and resilience building to be considered.	Communities volunteer and are trained to build gardens, fix water pipes and generally to become an extra pair of hands for schools.		

	Lever 4 Change 'the lot' of the youth through education initiatives and appropriate information sharing	Lever 5 All education institutions build on-line platforms for teaching and learning (computers/mobile phones)	Lever 6 A network of HEIs and research partners working collaboratively across the SADC region
Policymakers	Convene a conference of youth, intra- and inter- SADC countries, to hear the voice of youth and to inform implementation plans. Conference outcomes to be shared across government departments.	Funding policies for all reflect a change to support the 4IR agenda. Curriculum across all levels to incorporate IT platforms. Government department to learn to communicate across and within using IT efficiently. Centres for teaching and learning to be built and resourced as a matter of urgency after the pandemic.	Convene a meeting of HEI deans and others to develop a way forward for collaboration. Ensure regular meetings. Policymakers to share the policies prepared across the SADC.
HEIs (universities)	Curriculum to be revamped to be less academic and more innovative. Building Better to be a mantra.	Fast development of platforms and learning sites in rural areas to be priorities so that students can access work under all conditions.	Start with a collaboration: virtual meeting with local HEIs to discuss how collaboration will develop and expand research. Develop a charter for all HEIs to work towards, based on how to deal with a pandemic before, during and after it hits.
TVET colleges	More active engagement with youth and communities on the benefits of what TVET colleges can and should offer. Support from the government to be actively sought by TVET college heads.	TVET colleges to develop fast and to use resources that are 4IR compliant. All students to attend courses on the use of IT resources – a central theme of the colleges.	Collaborating with HEIs to exchange approaches and knowledge on the needs of youth to be central in thinking of colleges. Look for TVET partnerships across the SADC.
Researchers	Use young researchers in all activities, either as leads or part of teams, to reflect the voice of youth (the largest part of African society).	Work with HEIs and others to become empowered and skilled in IT and also to get access to resources.	Connect across and in their own universities. Expand discussion across faculties where information is to be shared. Develop rules for collaboration.
Teachers	Set up systems of formalised learning for youth in pairs and groups so they do not feel isolated and build this into post-pandemic activities, as a norm.	All pre- and post- training of teachers to have a central focus on IT and use of this in all subject areas. Teachers learn to be proficient in use of IT – major intervention for after the pandemic.	Teachers to become partners to HEIs in relevant research and to build units of collaboration across schools themselves.
Communities	Identify centres for youth meetings and capacity building and work with youth, through churches or NGOs, to empower but mostly to hear their voices. Offer counselling during and after the pandemic.	Where possible, lobby the government and NGOs to work in communities on basic cell phone skills and computer skills after the pandemic and to do this on an ongoing basis to build a better future.	HEIs to ensure the voice of communities, especially in rural areas, is heard and recognised in the research.

APPENDIX C: Suggestions for further research

There were several suggestions from the researchers on possible further research that could enhance understanding of what occurred in the SADC region during the pandemic. Some suggested topics for further research are as follows:

- What are the skills and the development required to unleash the latent possibilities in the green economy across the SADC?

- Explore, identify and suggest ways to stop sector-wide systemic injustice faced by girls and women in the SADC.

- Through researching across SADC HEIs, develop models and a practical lens for Global Citizenship Education (GCED) to become entrenched in HEIs.

- Research, explore and make recommendations on decentralised models of education delivery that will ensure all our children have access to equal quality education.

- What regional lens and strategies are needed for continued provision of quality education during emergencies, with a focus on poor, vulnerable, excluded children, young people and teachers?

- What insights into sustainability practices, knowledge and expertise are found in the non-formal vocational education and training (VET) sector, and how can these be harnessed and built on?

- What mechanisms to support and sustain livelihood enterprises have emerged during the pandemic, and how can they be sustained and expanded on?