Chapter 2

Exploring the Personal Factors that Mediate the Resilience of Students during Online Assessments

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Abstract

Trends in the Open Distance e-Learning (ODeL) environment are encapsulated in the shift from print-based to online delivery, both in teaching and learning as well as assessment practices. Lecturers and students may find the rapid transition to online delivery and e-assessment distracting and frustrating. The introduction of online technologies has centred consideration on the relevant contextual adjustments, neglecting the flexibility of students to adjust to the changes within the ODeL environment. This study explored the personal factors that mediate the resilience of students in the implementation of online assessment in the current ODeL environment. In order to characterise the personal factors of students, literature within the past decade in which advancement and the widespread use of educational online assessment practices have grown rapidly was reviewed. The strength-based approach was used as a lens to highlight constructs that depict the personal protective factors that have developed the strengths and capabilities of students in positive ways. The six key personal factors that emerged from the study could be targeted in terms of intervention. They can also provide data that could be used in future studies to explore the integration of personal factors and contextual resources in building the resilience of students in the ODeL environment.

Keywords: mediate, resilience, protective processes, personal factors, online assessment practices

1 Introduction

The Open Distance e-Learning (ODeL) framework uses contemporary innovation for teaching, learning and assessment to empower a combination of synchronous and asynchronous communication between students and lecturers who are physically isolated from one another (Ngubane-Mokiwa & Letseka 2015). The online system can be applied to e-learning of any scope, including assessments. However, it must be planned systematically. Flexibility in learning is therefore dependent on the openness of the system and the availability of learning resources distributed in various locations. Since the recruitment objective of higher education institutions is to increase diversity in its student body, the development of support programmes for students with diverse personality traits should be put in place to prepare students to adapt more easily to the context of their studies, despite adversity.

The e-learning framework is sought to be an innovative way of providing instruction to diverse students. It is learner-centred, an enabler of the learning process where technology is used like pen and paper in the education setting (Aparicio, Bacao & Oliveira 2016). Reference is made to the extent to which college students remain vigorous, committed, and absorbed in their studies while withstanding the challenges experienced within the ODeL context. However, the gap between students' attributes and their capacity to understand online assessment, goes unnoticed. Previous studies have reported a concern related to the number of students struggling with social, emotional, mental and behavioural problems that are possible risk factors affecting their well-being and impeding their success (Oberle 2018; Mushonga & Henneberger 2020; Moawad 2020). Within the context of this study, resilience focuses on how personal attributes can be resourceful when specific challenges ensue during online assessment. What is not clear is how processes like downloading of question papers, saving, and converting of scripts to a more acceptable and secured format, and uploading of answer sheets, which can be stressful, can be influenced by the personal factors affecting students' resilience. However, such attention shifts the academic paradigm away from narrow focus on multisystem, organisational resilience processes (Ungar 2021b) to strengths in student's inherent traits.

The purpose of this chapter is to identify the diverse personal traits as factors enabling students to manoeuvre the online assessments platforms. This paper begins by introducing the context of the study before a review of

literature. The findings lead to six key personal factors raised in the discussion. In closing, recommendations for future interventions relating to enhancing the resilience of students in the implementation of online assessment are outlined.

2 Literature Review

Resilience amongst students is said to be the result of a navigation technique that enables them to discover pathways that lead to resources that sustain their well-being and their physical and emotional ability to negotiate resources accurately (Ungar 2006; 2007; Masten 2011). In an ODeL context, there is a physical distance between students and the university, which suggests that it is the students' responsibility to take charge and negotiate the resources provided for their educational success and personal growth. Students come from diverse disadvantaged backgrounds with diverse capacities and experiences. I perceive such students to be helpless and crippled in managing their uncertainties in terms of their innovative capacities. However, students have diverse personalities and abilities to mitigate the e challenges that accompany online assessment practice. It is important that these factors be explored in order to understand resilience and to make recommendations on how to develop these traits in all students.

2.1 The Transformation to Online Assessment in Higher Education

Online assessment is a trend that is rapidly growing at an unexpected rate for both students and educators. Although the transition to online learning and assessment started gradually pre-Covid-19, to date, authors, researchers, theorists, and educators have defined how online assessment in developing and developed countries have impacted academics in many ways and from different perspectives and disciplines (Ngubane-Mokiwa & Letseka 2015; Makoe 2012; Kunene & Barnes 2017; Reedy, Pfitzner, Rook & Ellis 2021). Online assessments have proven to be more efficient than traditional forms of assessment, due to the fact that academics are able to reach a large number of students quickly and immediately, providing meaningful and timely feedback to students regarding the quality of their work (Ngubane-Mokiwa & Letseka 2015). On the contrary, research has paid little attention to connections between the personal factors of students and how they influence them in the

implementation of online assessments. This is demonstrated by the provision of a range of options for students' engagement in the provision of synchronous e-assessment practices through web-based technology, as discussed in the following paragraph.

2.2 Assessment Practices

Higher institution programmes and modules are developed based on specific learning outcomes that students need to achieve. The basic principle in implementing various assessment tools is to enable students to demonstrate their learning and development. Prior to the unprecedented Covid-19 pandemic, institutions across the higher education sector had already started to implement online delivery as a strategy to address challenges in their teaching and learning activities (Guangul *et al.* 2020). Increasingly flexible delivery modes were made available to university students globally to provide multiple pathways and opportunities through online assessment practices. Effective assessment techniques include projects, portfolios, self-assessments, continuous assessment, MCQ, take-home exams, and formative and summative assessment.

Although online assessment practices are found to be the best option to control academic integrity and can accommodate assessing all types of learning, it poses the risk of cheating (Gamage, Silva & Gunawardhana 2020) and plagiarism (Rowe 2004). For better management of academic integrity during online delivery and assessment Gamage *et al.* (2020) recommend that academic staff need to be equipped with procedural training that provides moral support for students. Online proctoring has the potential for students to take an online exam at a remote location while ensuring the integrity (security and trustworthiness) and reliability of the online exam (Hussein, Yusuf, Deb, Fong & Naidu 2020). Typically, proctoring is thought to involve supervision of an assessment by an instructor using the remote monitoring software as a countermeasure (Dendir & Maxwell 2020). However, online proctoring requires students to have access to suitable technological infrastructure, without which the option will not work reliably (Hussein *et al.* 2020).

Although online delivery was gradually rolled out at most institutions, the unprecedented Covid-19 pandemic fast-tracked conducting assessments remotely (Guangul *et al.* 2020). A variety of remote assessments are made available, using diverse innovative assessment practices to evaluate students'

online learning (Guangul *et al.* 2020). Previous formal examinations that were scheduled to take place as face-to-face examinations have now taken the form of take-home online examinations (Gamage *et al.* 2020). These exams can be completed by students in the comfort of their homes with access to subject notes, texts and resources (Morris 2010). Podcasts, e-portfolios and continuous assessment are utilised as forms of assessment. Morris (2010) contends that the benefits of podcasts are that it augments the clarification of specific details in the learning content and enhances understanding. In addition, Guangul *et al.* (2020) share alternatives to proctored remote exams to prepare students for online assessment practices. Proctored exams are done remotely by using various learning management software (Guangul *et al.* 2020). With time, different tools have been developed to assess at higher education institutions, but how effective they are implemented and how well they evaluate sustainability, and its impact are still an open question.

2.3 Personal Enabling Factors that Mediate Resilience

Personal protective factors are attributes that are intrinsic by virtue of their inherent predisposition or by external acquisition (Theron 2004). They can be in the form of processes, actions or objects that empower humans to meet life's challenges successfully, for example, systems that provide social, emotional, and material support (Masten 2005). Protective factors are resilience enablers that help to increase students' optimism as well as their positive emotional image, self-concept, good interpersonal relationships, and academic achievement (Oberle 2018). According to Masten (2001), resilience emphasises qualities rather than deficiencies. In the relevant available literature, Masten (2014) describes resilience as the ability of state of mind to solve problems that threaten health, prosperity, and success. State of mind could refer to the capacity to cope and adapt successfully to new situations. (Ungar 2011) defines resilience as the capacity to adapt, navigate and negotiate resources, despite adversity. The ability to adapt could be activated by means of stimulating a sense of curiosity and tapping into one's cognitive capacities.

Personal traits appear to have significant impact on how individuals interpret and deal with crises (Ledesma 2014). Research has identified additional factors present in people, including sympathy, understanding, scholarly fitness, toughness, feeling of cognisance, profound vitality, constructive emotionality, inspiration, and self-control (Masten 2001; 2005; Ungar 2004; Oberle

2018). On the contrary, documented studies reveal instances in which vulnerability in adapting to the ODeL circumstance generally worsen and resilience becomes less likely as risk factors multiply and persist (Obradović, Shaffer & Masten 2012). It should, however, be noted that resilient individuals are not immune to life's challenges; it has been shown that they have the capacity to adapt well in the face of adversity (Masten 2001) as they continue to strive and thrive in moving towards self-actualisation and positive learning outcomes.

Students require a high level of adaptability to realise qualities that promote resilience. It is assumed that students at the same institution share cultural practices and values that include, but are not limited to, problem-solving skills, critical thinking, a sense of humour, emotional intelligence, assertiveness, and orientation to time, as well as self-concept and self-esteem. State of mind and qualities that are produced early in life constitute the social foundation of students and influence the degree to which they will adjust to their interaction with the organisation, course programme, relationships with peers and lecturers and their individual impact on distance learning (Theron & Liebenberg 2015). Strengthening protective factors, in addition to reducing risk, may enhance the successful development of students, especially those from disadvantaged life circumstances (Jessor, Turbin & Costa 2017). Threats to an ability to adapt are described as risk, adversity, and disturbing life events. Masten (2001; 2014) and Hobfoll (2011) attribute psychological stress to relationships between students and their friends or lecturers as well as their household circumstances, including the absence of early nurturing, family stability and protection, as well as institutional systems, as predominant predictors of resilience in college students from high-risk environments.

2.4 Provision of Institutional Support to Students

The provision of student support contributes to developing learning through tutoring, discussion forums, blogs, podcasts, and assessment. These practices enhance student commitment and self-esteem, as well as establishing user-friendly information management systems. Considering the extent of collaboration and interaction required for effective online learning and assessment, integration of student support into assessment design should be accorded more attention rather than just delivery. This is to reduce students' anxiety about ICT. The study conducted by Van Wyk (2020) clearly outlines online academic support e-tools and collaborative learning efforts designed to achieve the

objectives for ODeL. Van Wyk identifies the following e-learning tools that are easily accessible for students: the online tutorial letter compiled with specific instructions related to attending online seminars, tasks and examinations, as well as support in the course, and a study guide that contains planned content for the module, all encapsulated in myUnisa for students to access at their convenience. Additional contextual academic supporting learning materials available include mass open online courses (MOOCs), open education resources (OER), YouTube videos and e-mails that were used during lockdown (Van Wyk 2020; Mphahlele 2020). Van den Berg (2020), Makoe (2012) and Mphahlele (2020) also allude to the use of e-blogs, LMS, interactive forums and social media, such as WhatsApp and Facebook as valuable resources within an Open Distance e-Learning context where others can observe, comment, and contribute. In some instances, lecturers might make use of electronic discussion forums to promote collaboration, synthesis, and reflection (Ngubane-Mokiwa 2017).

3 Purpose of the Study and Research Questions

Prior to the onset of the Covid-19 pandemic, there has been a test of organisational transition from blended to full digital instruction on the part of the higher education institutions globally and locally, and assessment practice has moved online at an alarming pace. The process had already started before Covid-19, but the advent of Covid-19 made it imperative to move assessment online. Before Covid-19, this was done to respond to the issues involving a number of students enrolled to be able to access their study environment and material wherever they are. Other reasons for the transition from pre-Covid-19 include the fact that lecturers are able to provide feedback on students' assignments through a click of a button from any location in the world through on-screen marking (Ngubane-Mokiwa 2017) and staff who are unable to attend their local campus due to health issues (Bhagat & Kim 2020).

Although online learning and assessment are challenging, there are benefits cited in the literature. Different resilience theories focus on inherent qualities that individuals possess, which include adaptation skills, the capacity to make realistic plans, the ability to carry out plans, the ability to manage one's feelings and impulses effectively and in a healthy manner, good communication skills, and confidence in one's strengths in the face of danger, and the way these assist them to defeat exposure to hazards in normal life (Zolkoski &

Bullock 2012). What we do not know is how individual students' personal factors influence their transition to online assessment. The purpose of this chapter is thus to explore personal factors that mediate the resilience of students when using different e-assessment practices. The key research questions that guided this research are:

- What are the inherent personal factors which mediate the resilience of students despite their life challenges?
- What are the acquired factors which mediate the resilience of students despite their life challenges?

The study will serve as a baseline for understanding the various character traits of the students. It will help institutions of higher learning moving forward, to make informed decisions about various students' attributes when planning interventions.

4 Theoretical Framework

This chapter draws on strength-based approaches that are rooted in the belief that (1) people have existing competencies to identify and address their own concerns; (2) people are capable of learning new skills and solving problems; and (3) people can be involved in the process of discovery and learning. Strength-based approaches present a new worldview that abstains from labelling and accepts control by the youth and their families to help themselves when faced with adversity (Saleebey 1996; 2008). The strength-based approach arises from findings related to positive psychological perspectives that move away from focusing on risks and maladaptation and instead strive to understand the factors that enable individuals to flourish and achieve using e-assessments (Oberle 2018). Although Ungar (2015) maintains that students are at risk due to their unmet mental, physical and psychological needs, strength-based approaches acknowledge the real problems that affect individuals and examine individuals in terms of their capacities, talents, competencies, possibilities, visions and hopes (Saleebey 1996). Saleebey (1996) is passionate in encouraging people to build on their strengths. He strongly believes that somewhere within all humans there is an urge to be heroic; to transcend circumstances; to develop their powers; to overcome adversity; and to stand up and be counted (Saleebey 2008).

Within the context of this study, the issue of resilience brings into consideration several questions such as: Why are some students underperforming, debilitated by setbacks, poor performance, stress and telephobia whereas others are able to navigate e-assessment practices and succeed with their studies? The implementation of assessments varies, depending on the teaching and learning environments and it is concerned with personal growth in affective areas of self-concept, values, and emotions (Mphahlele 2020). Processes that assist students to recognise and act on their strengths are relatively new in the field of ODeL and are adopted to improve student achievement (Galloway, Reynolds & Williamson 2020). Students should be made aware of available resources and processes to be followed and negotiated for them to control their online teaching, learning and assessment processes successfully. Students should be encouraged to identify their strengths and apply them in roles that suit them best; they should invent ways to apply their strengths to everyday teaching and learning. Mphahlele (2020) contends that when students are self-motivated to learn, have a strong sense of self-belief and are energised to perform, it will be easier for them to use mobile technologies to access course content and assessment activities and knowledge creation and sharing within the network of their peers.

5 Research Methodology

The research design used in this chapter is qualitative by nature. The study was conducted in a developmental sequence of key publications revealing the students' personal factors that mediate the resilience of students that can be prominent for enhancement of students in implementing online assessments in an ODeL context. This was done to get a good overview and understanding of the diversity of students' traits registered at Unisa. A distinction was then made between the significant enabling factors and basic assumptions in the contemporary and earlier versions of literature with regard to the resilience of students in the implementation of online assessments.

The literature search was conducted to identify research conducted on personal attributes of students from different perspectives and processes of remote assessment practices. Articles from 2010 to 2021 were searched from the database by using the key terms, 'online assessment' and 'resilience' to distinguish what has been undertaken and what needs to be undertaken, identify variables that are relevant to the topic, identify relationships between theory/

concepts and practice, avoid unintentional and unnecessary replication, identify contradictions and inconsistencies, and identify strengths and weaknesses of the various research approaches that have been utilized (Onwuegbuzie, Leech & Collins 2012). However, any relevant input outside the timeframe was also considered, depending on its validity. The findings of articles were perused to determine their relevance for the purpose of our study. The criterion for screening articles for further review was that both inherent and acquired personal factors that mediate the resilience of students should be distinguished from strength-based theory and are applicable to online assessment practices.

6 Analysis of Reviewed Data

Students' resilience has been examined over the years through a variety of constructs. This review was then used as a basis for analysing the overall strengths and limitations of students' personal factors with regard to informing intervention plans to promote the resilience of students in the implementation of online assessment. A review of student personal factors that mediate their resilience was evaluated and analysed systematically to elicit the distinct attributes through studies between the years 2010 to 2021. By reviewing the literature, the following student personal attributes, both inherent and acquired, were identified. I used the strength-based approach as a lens to organise, categorise and analyse data.

6.1 People have Existing Competencies to Identify and Address their Own Challenges

The strength-based initiatives help students to identify their natural talents, engage in productive activities to develop them into strengths, and empower students to mobilise their strengths in everyday situations (Saleebey 1996). Students need to display their willingness and preparedness to be involved in the process of discovery and learning. The following section reflects the results of the literature reviewed on core competencies as enablers that can help students to mediate their resilience.

6.1.1 Technological Competencies

Online assessment relies solely on technology and requires of students to be

literate in navigating technological devices to enhance their remote learning and assessment. Thus, technological competencies are compulsory skills students must possess to be successful in implementing online assessment. However, Albrahim (2020) argues that there is no imperative need for students to be technologically advanced. The technological skills required, specifically for online assessment, relate directly to the possession of, and accessibility to, physical resources (laptop, mobile phone, or tablet), as well as competencies in implementing e-assessment (downloading, converting paper to PDF and uploading answer script). Research argues that the fact that students use electronic devices for social networking does not mean they have the skill required for online assessments (Khan & Khan 2019). To actualise their potential ICT support and capacity building, efforts are required.

6.1.2 Self-directed Learning (SDL)

The study conducted by Bhandari, Chopra, and Singh (2020) argue that students should be focused, motivated and stress-free, have time-management skills, and be able to search learning resources for the successful implementation of online assessment through SDL. The SDL is consistent with the strength-based approach because it allows students to identify their personalised learning style by diagnosing their needs, learning goals, plan, ability, identifying e-learning materials, and implementing and evaluating the outcomes (Lalitha & Sreeja 2020; Geng, Law & Niu 2019). Hiemstra and Van Yperen (2015) acknowledge the significance of nurturing students' self-directed learning capabilities through student mentoring, tutoring and study skills classes, self-reflection, and goal-selection strategies to assess their learning needs. SDL processes contribute to the use of Internet communication technology for collaborative learning (Lee *et al.* 2014). Various educational research emphasises on learning motivation and its relationships between self-directed learning and technology (Geng, Law & Niu 2019).

SDL, in keeping with the strength-based approach, has a relationship with self-efficacy. According to Geng *et al.* (2019), self-directed students possess adequate self-efficacy traits in order to meet new challenges. Literature shows that sharing personal experiences with others also enhance self-reflection. It also helps in to encode knowledge in new ways (Butcher & Sumner 2011). Thus, these studies promote an integration of variables as protective factors and their effect on enhancing the resilience of students.

6.1.3 Motivation

The Self-Determination Theory (SDT) (Ryan & Deci 2020) distinguishes between two main types of motivation as two extreme points of a continuum: intrinsic motivation, also known as self-determined or autonomous motivation, and extrinsic motivation. SDT provides a framework for understanding the factors that promote motivation and healthy psychological and behavioural functioning (Ryan & Deci 2017). In line with the strength-based approach, students generally display willingness and preparedness to be involved in the process of discovery and learning if resources are available and accessible.

6.2 People are Capable of Learning New Skills and Solving Problems

Ledesma (2014) argues that personality factors appear to have a significant impact on how individuals interpret and deal with crises. The movement towards online assessment, including the use of online proctoring is becoming a major challenge to many higher education institutions. The scale of the movement to online exams was expedited by the unprecedented pandemic. To meet this challenge, many institutions outsourced the examination aspect of their education to online proctoring service providers. The situation provided a context where institutions' resistance to embrace online assessment was fast tracked, leading to drastically capacitating both academics and students on their technological educational skills (Reedy *et al.* 2021). The strength-based approach acknowledges that people have inherent competencies embedded in their personality, and these allow them to confront life's challenges (Saleebey 1996). However, strengths-based approaches are not without their critics. Negative emotions and mental illness may pose inherent vulnerabilities to narrow cognitive, attentional, and physiological resources to deal with an immediate threat (Rashid 2015).

6.2.1 Personality Traits

Personality can be defined as the combination of characteristics or qualities that form an individual's distinctive character. Articles reviewed on theories of personality provide an understanding on human behaviour and interaction with their environment. Personality traits can be articulated through different learning styles (auditory, visual, reading/writing, kinaesthetic) which facilitate

students' better understanding and learning, aiming to achieve the desirable learning outcomes or goals. Literature on learning styles provides additional evidence that the usual teaching styles should be redefined for online assessment where the styles corresponding to the capacities of students are accommodated (Idrizi, Filiposka & Trajkovik 2019; Costa *et al.* 2020). The strength-based approach acknowledges the role played by personality traits in the overall development and contends that networked learning and assessment materials should be aimed at the learning achievement and course satisfaction. In previous studies, most scholars investigated the relationship between personality and work satisfaction, and they found individuals with high agreeableness were easy to get along with and cooperated with others (Kohli & Bhatia 2021). The results of study conducted by Keshavarz and Hulus (2019) suggest that students' personality and learning styles play a significant role in increasing their motivation for using blended learning. Thus, based on these findings, it is suggested that in order to increase learners' motivation, teaching materials and methods should be tailored according to their needs.

6.2.2 Adaptability

From the articles reviewed, students require a high level of adaptability to realise qualities that promote success in online assessment. It is assumed that students at the same institution share cultural practices and values that include, but are not limited to, problem-solving skills, critical thinking, a sense of humour, emotional intelligence, assertiveness, and orientation to time, as well as self-concept and self-esteem. However, beyond this assumption, studies of resilience contend that the students' state of mind and qualities are produced early in life and constitute the social foundation, influencing the degree to which students will adjust to their interaction with the organisation, course programme, relationships with peers and lecturers and their individual impact on distance learning (Theron & Liebenberg 2015). Thus, strengthening protective factors, in addition to reducing risk, may enhance the successful development of students, especially those from disadvantaged life circumstances with minimal exposure to technological gadgets (Jessor *et al.* 2017).

6.2.3 Self-efficacy

Researchers have attributed self-regulated and self-directed learning, locus of

control, and academic self-efficacy as student-related factors that play an important role in student performance and readiness in online learning and assessment (Martin, Stamper & Flowers 2020). Students who have a strong sense of self-belief are energised to perform; they are motivated and believe in their ability to succeed (Bandura 1993; Mphahlele 2020). Mphahlele (2020) argues that academic resilience comprises self-belief (confidence), a sense of control, low anxiety (composure), and persistence (commitment) in their study.

Self-efficacy promotes an opportunity for students to feel competent to do things that make a real difference in their lives. The literature indicates that academic self-efficacy affects academic persistence, performance, and motivation. The strengths approach alludes that people are capable of learning new skills and solving problems (Saleebey 1996). Although Masten (2001) suggests that protective factors appear to be the building blocks of resilience, Oberle (2018) contends that the development of resilience depends on multiple transactions between the individual's internal and environmental protective factors.

6.3 People can be Involved in the Process of Discovery and Learning

Oberle (2018) asserts that resilience enablers serve as protective factors that improve students' optimism, positive emotional image, self-concept, good interpersonal relationships, and academic achievement. Positive interpersonal relationship is regarded as the core skill that predicts successful development and adjustment in the face of adversity (Liew *et al.* 2018). This is consistent with the assertion that students are keen to take charge of their responsibilities and have the desire to rise above adverse conditions; to build up their forces; to defeat difficulty; and to stand up and be counted (Saleebey 2008). Similarly, Walsh (2015) declares that social networks that are made up of mentors, friends and educators serve as protective factors that inspire energetic participation and enhance the resilience of students. Students who are able to form positive relationships with staff members and are given opportunities to make appropriate decisions about interventions and programmes are more likely to achieve better outcomes. Makoe (2012) also highlights the importance of the need for academics to embrace the digital learning process of their students and provide the desired support. However, it is important to acquire sufficient knowledge of personal traits that mediate the resilience of students to inform

planning and designing of online assessments and provide appropriate support.

7 Discussion of Findings

In this article an attempt has been made to outline the personal factors – inherent and acquired – that mediate the resilience of students in the implementation of online assessment within an ODeL context qualitatively. The central focus was on identifying personal factors that helped students to cope with the transition to synchronous online assessment. The findings reveal that students possess unique character traits that facilitate their resilience to navigate the contextual challenges of the ODeL environment. The study indicated that students' inherent factors are crucial in contextualising their resilience.

It is found that attributes such as good coping skills, assertiveness, subjective well-being, and relational competence contribute positively towards enhancing students' resilience. The SBP regards such traits as the positive personality traits needed to succeed (Saleebey 1996). Other factors noted are self-efficacy, self-confidence, and problem-solving skills (Ungar 2021a). It may be concluded that positive personality factors and higher thinking capacities of cognitive functioning are crucial resilience enablers. These traits are unique to individuals and are deemed generally imperative to succeed in life (Oberle 2018; Masten 2001). Research also revealed that people do best when they focus on their strengths, rather than on their weaknesses (Saleebey 2006). Similarly, the strength-based practice (SBP) pioneer, Saleebey (2008), believes that all humans have the urge, somewhere within themselves, to be heroic; to transcend circumstances; to develop their powers; to overcome adversity; and to stand up and be counted.

From the reviewed literature it can be deduced that the balance between a person's own traits (personality traits) that support adaptability, competencies, and skills (acquired technological skills, student support systems and social skills), and coping with levels of stress induced by online assessment are significant in promoting resiliency. Generally, resilience is used to describe how a system is managed to thrive on adversity (Ungar 2021a). Ongoing training and broadening of skills repertoires also empower student capacity to do well, increase their level of motivation and confidence, and promote creativity and knowledge skills to cope with online assessment practices (Bartusevičienė, Pazaver & Kitada 2021). Thus, exploring and understanding personal factors that mediate the resilience of students are significant

in implementing online assessment.

8 Conclusions and Recommendations

This study could contribute positively to the development of student support programmes to mediate student resilience in relation to the implementation of online assessment. It is also important for lecturers at the various education institutions to understand what determines students' resilience. The study bears evidence that students who do bounce back from adversity have connected to parts of their environment that provide support, encouragement and opportunities that nurture their development. Masten (2001) states that resilience does not come from rare and special qualities, but from the everyday magic of ordinary, normative human resources in the minds, brains, and bodies of individuals, and in their interpersonal relationships. Skills needed to deal successfully with one stressor in navigating various assessment processes in the ODeL context may differ from those needed to cope with another separate situational process.

In order to develop effective resilience-enhancing interventions that are informed by an understanding of these complexities, experts need to work together and carefully consider the promotion of computer literacy to empower students and to prepare them for online assessments. Computer literacy is significant and no longer a luxury, but a necessary skill to succeed with online learning and assessment. This could suggest that, although student attributes and technical competencies are significant, it should be taken into account when planning online assessments. Students should be provided access to support devices and services that can help them solve technical problems, especially during assessment. (Bartusevičienė *et al.* 2021) argue that ensuring the uplifting of students' personality traits and competencies in their technological skills is significant in alleviating their anxiety.

A plethora of literature focused on identifying the students' perception of the use of online assessment without paying attention to connections between the students' personal factors and online assessments, which is significant to this study (Astani, Ready & Duplaga 2010; Ncube 2015; Khan & Khan 2019; Das 2020; Wills & Hillier 2020; Muin & Hafidah 2021; Topuz 2021). While acknowledging that no human is invulnerable or able to conquer all levels of stressors that place one at risk of succumbing to stress or failing, online assessment programmes require increased student participation in the

ODeL space (Ngubane-Mokiwa 2017; Bhagat & Kim 2020; Mphahlele 2020). It is suggested that higher education institutions need to accommodate with regard to comprehensive support that take into account the different personal factors that mediate the resilience of students.

Acknowledgements
The author acknowledges her mentor, Prof. Tlale LDN, who provided guidance in the development of the chapter.

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