Chapter 1

A Self-Assessment of Academic Empowerment in the Transition to the Digital Space with the ASSET© Framework

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Abstract

Just as a flower cannot blossom without sunshine, so too academics at Higher Education Institutions (HEIs) cannot be successful in the sudden transition from face-to-face lectures to adopting an online learning space, necessitated by the Covid-19 pandemic without, amongst other prerequisites, re-skilling. These unprecedented times required of academics to adapt to this unexpected change, sometimes with minimal digital teaching skills and capabilities. This sudden shift was compounded by the forced work-from-home (WFH) scenario, which brought with it its own set of challenges. It became evident that academics need to equip themselves with a new skills set for successful navigation of the online teaching, learning and assessment spaces now created. When educating online, where lecturers no longer have immediate face-to-face engagement with their students, the academic skills set is vastly different from the skills set required in a traditional face-to-face environment. Bringing these skills together has led to the development of the ASSET© (Academic SkillSET) framework for online teaching, learning and assessment. The framework outlines eight basic skills that academics need to develop/possess to support a smooth transition from the face-to-face to the online space, which will most likely find its balance in a blended space post the pandemic. This paper aims to validate the framework developed with a selected group of academics at a South African Higher Education Institution.

Keywords: academic skills, online learning, digital space, transition

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Introduction

The sudden transition from face-to-face lectures to adopting an online learning space, necessitated by the Covid-19 pandemic, required that academics at higher education institutions (HEIs) adapt to this unexpected change, with minimal digital teaching skills and capabilities. This sudden shift was compounded by the forced work-from-home (WFH) scenario, which brought with it its own set of challenges. Through the facilitation of Digital Teaching and Assessment workshops, during the pandemic, the researcher has been exposed to the challenges faced by academics at HEIs in the modification of the learning spaces they traditionally worked with. It became evident that academics lacked the skills, capabilities and mindset for successful navigation of the online teaching, learning and assessment spaces now created. When educating online, where lecturers no longer have immediate, face-to-face engagement with their students, the researcher came to the realization that the academic skills set required during online teaching, learning and assessment is vastly different from the skills set required in a traditional, face-to-face environment. Through the validation of this framework, this study will assist academics individually to identify their strengths and weaknesses in the online space, as well as provide institutions with a gauge of their collective academic capital.

Background

While the researcher acknowledges that online learning has been around for a number of years, the unprecedented recent events gave rise to remote teaching and emergency online learning (Singh *et al.* 2020). Typically, there has been a lot of resistance to the adoption of online teaching (Mitchell, Parlamis & Claiborne 2014; Rienties 2014; Vivolo 2016; Veronica 2020), by academics. However, in these unprecedented times, academics were left with no choice – even if they resisted the online space – but to transition, in an effort to save the academic year. The researcher identified that lecturers need to recognise that they are not operating as before; many academics are teaching from their personal spaces, and this will have its challenges – there may be a baby crying in the background during a lecture, or disruption if technology fails. Thus, the framework was developed from the researcher's interaction with academics at the ground level and includes practical rather than theoretical elements.

The first and foremost skill required to succeed in the online environment is that of *digital literacy* – the skills required to navigate the online space;

connect with students and colleagues; as well as the ability to access information through digital platforms like the internet, social media, and mobile devices. Academics need to become familiar with tools to professionalise their online delivery of lectures and actively engage students in the virtual learning space.
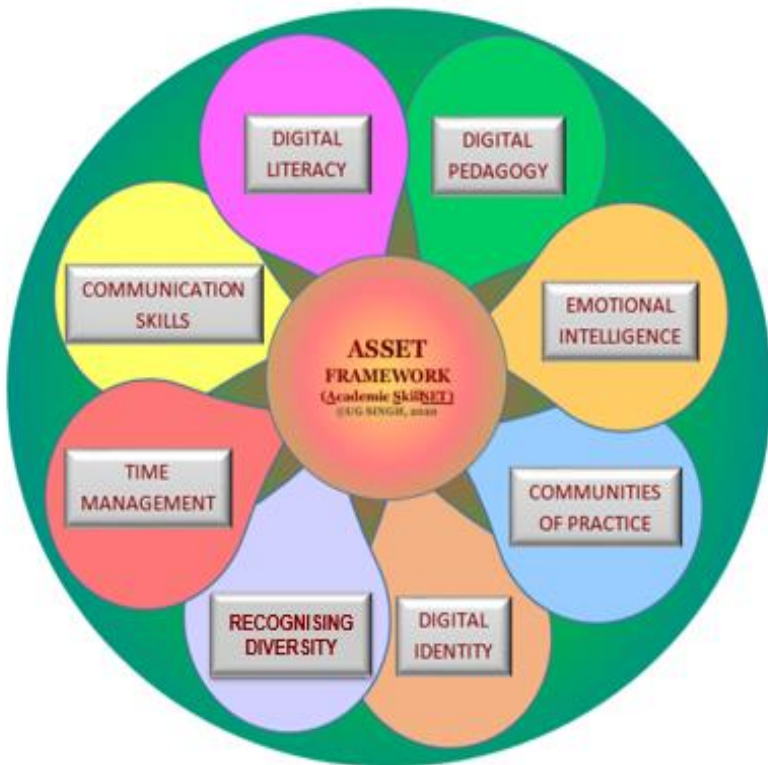

Figure 1: The ASSET Framework

The second skill necessary is that of *digital pedagogy* – commonly referred to as the application of contemporary digital technologies in teaching and learning. The third skill, *communication skills,* while being important in

the face-to-face environment, is even more essential in an online learning environment as students require regular, clear and concise instruction. Success for the online academic requires the development of a strong *emotional intelligence* (Skill 4) as being cognizant of students' emotions, well-being, and struggles, can reduce interpersonal conflicts and contribute to the students' emotional and social development. Further, academics must also be kinder and more patient with each other during these unprecedented times. Effective *time management* (Skill 5) is essential when delivering an online course, as time is a finite resource and lack of time management may result in burnout for the academic. Supporting one another is critical in this environment, so if someone has learnt one useful tool, it is important to try and share this knowledge with others in your discipline, institution and academic network, thus developing *communities of practice* (Skill 6). *Recognising diversity* (Skill 7) in the online environment can aid in promoting student growth and reflection, foster a sense of empathy for others, and bring about open-mindedness, thus ensuring an inclusive environment for all of our students. Academics have to manage their *digital identity* (Skill 8) and master useful tools to navigate online teaching cautiously but in an exploratory manner. The extension of the digital identity skill extends to inducting students in their online learning space and teaching their students new skills to ensure success in online learning such as harnessing persistence, independence, technical skills reading and writing skills, motivation, time management, communication skills and empathy.

Thus, it can be seen that the ASSET Framework outlines eight essential skills which make up the 'new' academic skills set required to engage successfully in online teaching, learning, and assessment spaces. These skills extend beyond just knowing and learning the technology.

This research aims to validate the framework developed by outlining the minimum skills required by academics to embrace the digital environment during the unprecedented shift to online teaching, learning and assessment. The study is based on the researcher's own experience and interaction with faculty during the early stages of the pandemic. Bringing these skills together has led the researcher to develop the ASSET© (Academic SkillSET) framework for online teaching, learning and assessment. The initial version of this framework outlines eight basic skills that academics need to develop/possess to support a smooth transition from the face-to-face to the online space, which will most likely find its balance in a blended space post the pandemic. The final aim is to develop this into an electronic framework that academics can use to evaluate

their own ASSET© value automatically in the digital teaching, learning and assessment space. This chapter focuses on the assessment of academics' digital skills to survive in the digital space they were forced to work in, irrespective of the digital platform(s) they chose to adopt.

Literature

Human history has often been flooded with pandemic diseases that leave catastrophic ruins and bring about havoc in their wake (McLaren & Jandric, 2020; WHO 2020; Chaka 2020). These ancient human plagues and the Covid-19 illness of the current pandemic for the novel coronavirus disease are not an exception (WHO 2020; UNESCO, 2020). Covid-19 disrupted every sector in the economy, including higher education (Boggs *et al.* 2021). Both students and staff involuntarily had to transition to the online space, adopting varying forms of emergency remote teaching, emergency online teaching, and uncontrolled online assessments in an attempt to save the academic year (Adedoyin & Soykan 2020; Xie, Siau & Nah 2020). Some higher education institutions (HEIs) around the world accessed and embraced e-learning almost seamlessly, using online educational tools and resources to ensure the continuity of delivery of teaching and learning during the pandemic (Chaka 2020). However, despite the location of HEIs, it seems that the common challenges experienced by academics worldwide in this unprecedented shift to the online environment include the well-known issues of access to data and devices, connectivity, lack of a conducive working space, and limited social interaction (Bhagat & Kim 2020; Cleophas 2020; Paterson 2021; Smalley 2021). Additionally, many academics are suffering from burnout, fatigue and social isolation, as well as anxiety and fear of the pandemic (Flaherty 2020; Van Niekerk & Van Gent 2021). While the mental health challenges facing academics have gained prominence in the media in the recent past (Nguyen 2020), the pressure placed on academics during the pandemic has starkly highlighted the need for a systemic approach to change. Additionally, many academics were not ready to transition to the online environment due to a lack of digital readiness and inadequate digital competencies. Others struggled due to deficiencies in infrastructure, inexperience, the information gap, and the complex environment at home (Murgatrotd 2020). Transitioning from the digital readiness of teachers to the eventual execution of successful online teaching and learning infrastructures is a gap that needs to be strategically

filled. Encouragingly, according to Ali (2020), 'large-scale, efforts to utilize technology uniformly to support remote learning, distance education and online learning during the Covid-19 pandemic are emerging and evolving quickly'.

Kereluik *et al.* (2013) identify the essential skills academics require to be successful in the online environment as the knowledge of technology, creativity, innovativeness, problem-solving, and digital information and communication technologies. Similarly, Chalkiadaki (2018) highlights the need for academics to possess digital capital, which includes individual, social, organization of information, and digital literacy skills. He explains each of these skills as individual skills, including self-confidence, creativity, problem-solving and critical thinking adaptability, managing complex situations, and taking risks; social skills that include communication and collaboration (skills of speaking and writing in mother tongue and foreign languages, etc.), cultural and global awareness (being able to know different cultures, being able to appreciate their values, being capable of establishing cross-cultural relations, etc., leadership (incentive, taking initiatives, entrepreneurship, power to have influence); organization of information skills include learning (self-reflection, self-assessment, self-learning, e-learning, independent learning, knowledge structuring), information management (information literacy, access to data, data management, data analysis, adapting data to new situations, knowledge of content); and digital capital to include digital literacy and using media and information technologies, digital tools, knowledge of tools for establishing mutual communication, thinking critically while using digital devices. In the move to the online space, the skill of using technology effectively and competently is most significant in the field of designing interactive online learning (Voogt & Roblin 2010; Griffin *et al.* 2012; *Dicerbo 2014*;). This is supported by Joynes *et al.* (2019), who state that the skills of using information technologies need to be a significant part of the education process in the twenty-first century. Specifically in the online environment, the ability to use technologically interactive tools is imperative (National Academies of Science 2012; World Economic Forum Report 2015; OECD 2005). Ultimately, digital capital literacy is one of the mandatory survival skills academics should have to thrive in the new normal days of the pandemic and beyond.

From the student perspective, the significant factors that dealt with African students' ability to engage online included unavailability of the access to network and devices; lack of technological competency; and low levels of

emotional and social capital. The study by Singh and Nair (2021) suggests there is a significant need to ponder on the pillars proposed by the Khan octagonal e-learning framework, which comprises eight components: institutional, pedagogical, technological, interface design, evaluation, management, resource support and ethics. Rajkoomar and Raju (2016) posit that each component of the framework signifies a category of issues that needs to be tackled to create a meaningful learning experience.

Singh and Nair (2021) suggest that the Khan framework remains a holistic structure to analyse the effect of African higher education's abrupt shift to online teaching, learning and assessment in an unprecedented situation like Covid-19. The typical Khan framework can be adapted to enable educators to choose the appropriate tools and infrastructure for online learning environments.

Blewett (2016) suggests that the five digital-age pedagogies that enhance the affordances of technology, techno-savvy students' approaches to learning, and the development of key 21st-century soft skills force academics to move away from the passive ways of teaching (consumption) to the more active approaches (curation, conversation, correction, creation and chaos).

Methods

This study adopts a quantitative methodology where the conceptual framework developed was tested on a selected group of academics at a South African HEI. Participants in the study were selected through purposive sampling. The target population of the study was 85 academics who attended training sessions offered by the researcher on digital teaching and assessment in 2020. An online survey was designed to present the eight categories of skills identified in the ASSET framework, and the extent to which an academic meets each skills category is measured through a set of carefully developed criteria following the researcher's interaction with and digital empowerment of over 1 500 academics in the early stages of the pandemic. Gatekeeper consent and ethical clearance was obtained as per Protocol Reference Number: HSSREC/ 00002193/2020. The questionnaire was distributed through the institution's notice system. The final sample obtained was 47 academics. Participation was completely voluntary and respondents were assured that their identity, as well as that of the institution, will be confidential.

Results
Demographics
The demographic profile of the 47 respondents in this study, as summarised in Table 1, were mainly digital immigrants – between the ages of 41 to 60 (65.9%), majority male (66%), lecturer level (44.7%) academics. All respondents held a postgraduate degree (100%), with a small percentage being on contract (25.5%) tenureship. Just over half (57.5%) of them had more than 10 years' experience in academia.

Table 1: Demographic Profile of Respondents

Variable	Categories	N(%)
GENDER	*Male*	31 (66.0)
	Female	16 (34.0)
AGE	*21-30*	3 (6.4)
	31-40	9 (19.1)
	41-50	12 (25.5)
	51-60	19 (40.4)
	>60	4 (8.5)
ACADEMIC ROLE	*Full professor*	3 (6.4)
	Associate professor	9 (19.1)
	Senior lecturer	8 (17.0)
	Lecturer	21 (44.7)
	Tutor	4 (8.5)
EXPERIENCE IN ACADEMIA	*up to 5 years*	12 (25.5)
	6-10 years	8 (17.0)
	11-15 years	6 (12.8)
	16+ years	21 (44.7)
TENURE	*Permanent*	35 (74.5)
	Contract	12 (25.5)
QUALIFICATION	*Postgraduate degree*	47 (100)

Online Teaching Background

To ascertain the background which these academics possessed in online teaching, the research explored their experience (Figure 2), measured in number of years and proficiency (Figure 3), using a self-rating measurement of 'Novice', 'Intermediate', or 'Expert', in online teaching.
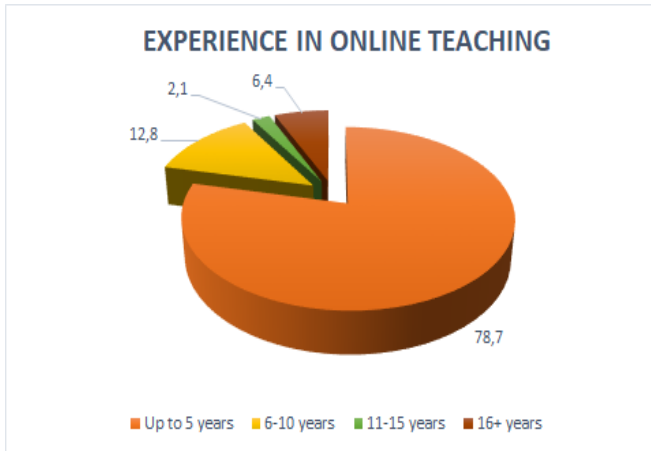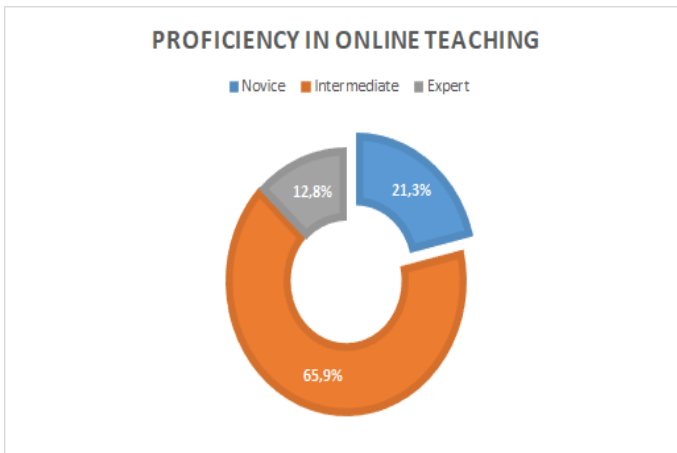

Figure 2: Experience

Figure 3: Proficiency

It was noted that while a significant 21 (44.7%) have in excess of 15 years' experience in academia, p=.010, only a significant 37 (78.7%) have up to five years' experience in online teaching, p<.0005. The majority of the sample (31; 66%) rate their proficiency as 'Intermediate', p<.0005. Only a small percentage (21.3%) consider themselves 'experts' in online teaching.

Constructs of the ASSET model

For each of the constructs of the ASSET model, an analysis was conducted on each item individually, and then the construct was analysed as a whole. A consistent rating scale ranging from 'Strongly Disagree' to 'Strongly Agree' was used on all construct items.

The one sample t-test was used to test for significant agreement or disagreement to the statement by testing if the average agreement score is significantly different from the central score of 3.5 (for the individual item analysis for each construct) resulting in significant agreement with the item if the mean score is >3.5, or significant disagreement with the item if the mean score is <3.5.

Construct 1: Digital Literacy

The first construct aimed at measuring the digital literacy skills of the respondents, specifically in relation to their confidence in technology-based skills to implement online teaching and assessment, by presenting 14 items (Figure 4). This construct focused on aspects of familiarity with concepts of digital identity and the digital footprint; privacy and security in online delivery; confidence in the development and delivery of digital materials; and the extent to which student engagement was facilitated in the online classroom.

There is significant agreement (p<.0005) with all items in the *digital literacy* construct, except for the use of technology to professionally edited recorded videos; securing their personal digital identity; and promoting their digital academic identity. For these three items there is neither significant agreement nor significant disagreement.
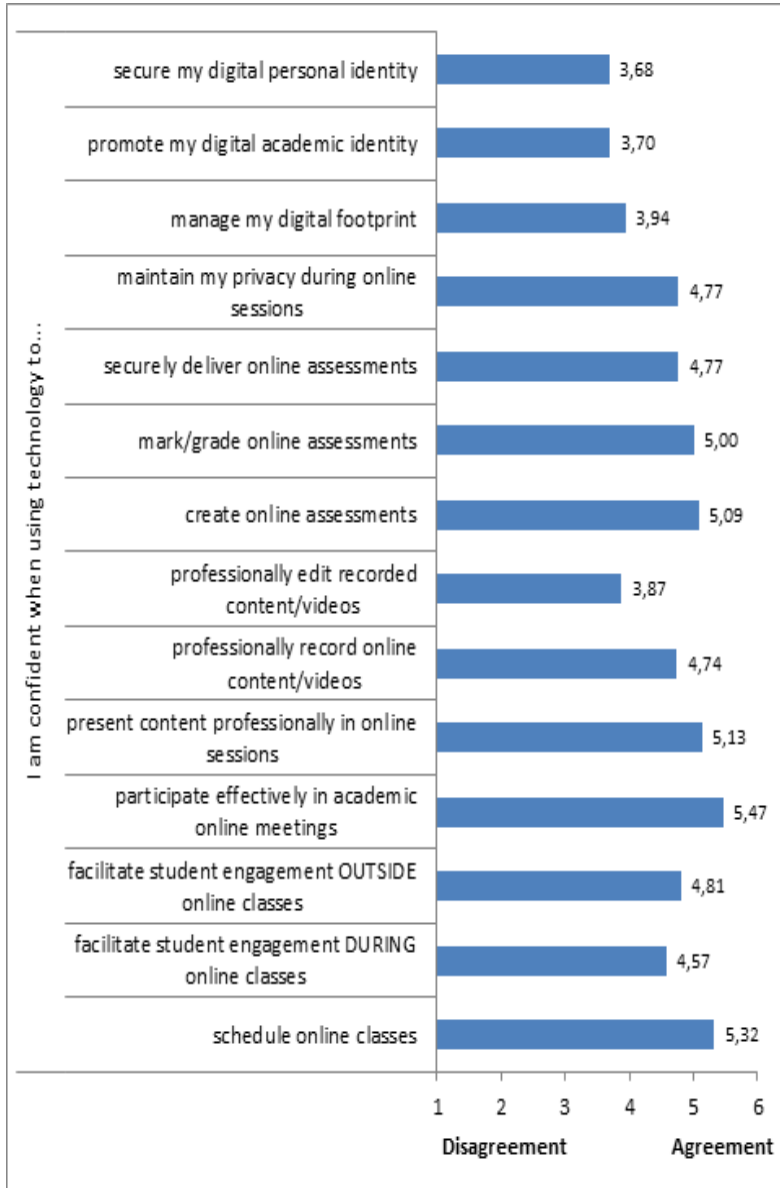
Figure 5: Measuring Digital Literacy

Construct 2: Digital Pedagogy

The second construct presented respondents with 11 items (Figure 6), which prompted them to interrogate what their teaching approach/philosophy is. The respondents were asked to consider practical concepts such as backup delivery plan; regular breaks during delivery; length of recordings and online sessions; student engagement activities; and the role of the lecturer in the teaching/ learning process.

There is significant agreement ($p<.0005$) with to all items in the *digital pedagogy* construct, except for their role as 'the sage' on the stage; their teaching approach being more 'teacher' than student centric; and the use of regular body breaks.
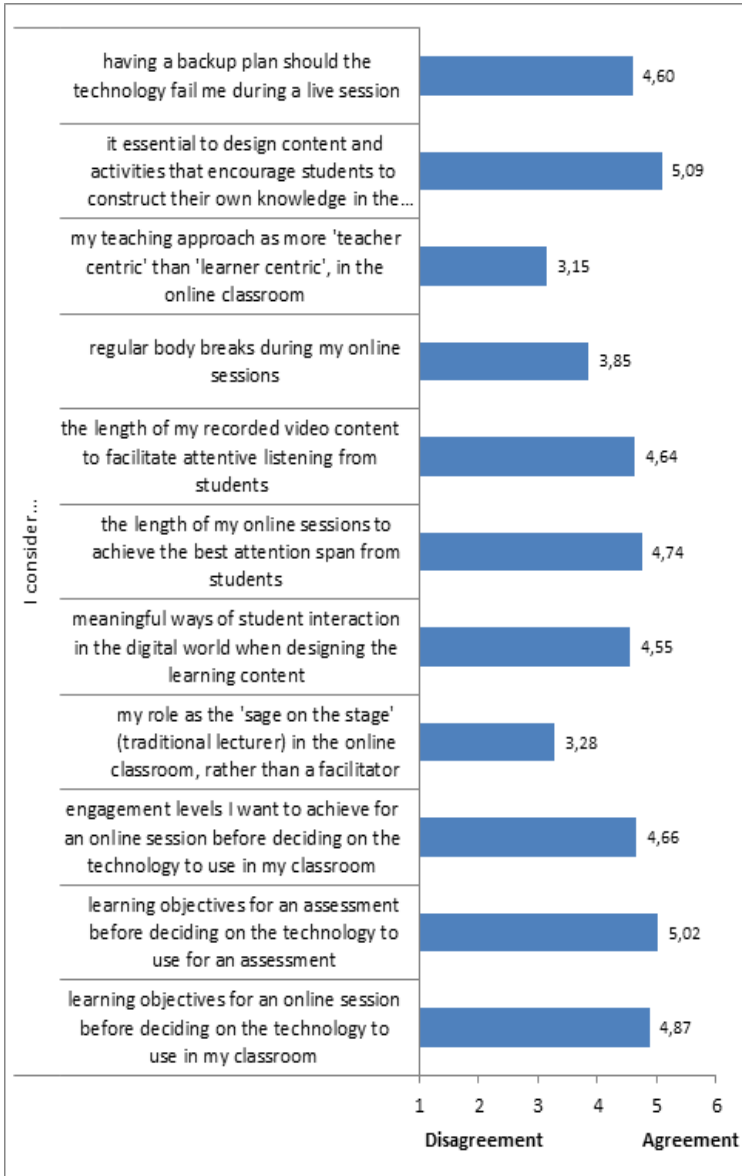
Figure 6: Measuring Digital Pedagogy

Construct 3: Communication Skills

This construct measured the respondent's proficiency in communicating with their students in the online space by presenting them with eight items. Here aspects of communication such as regular, informative and clear communication and guidance were investigated, as well as communication methods adopted.

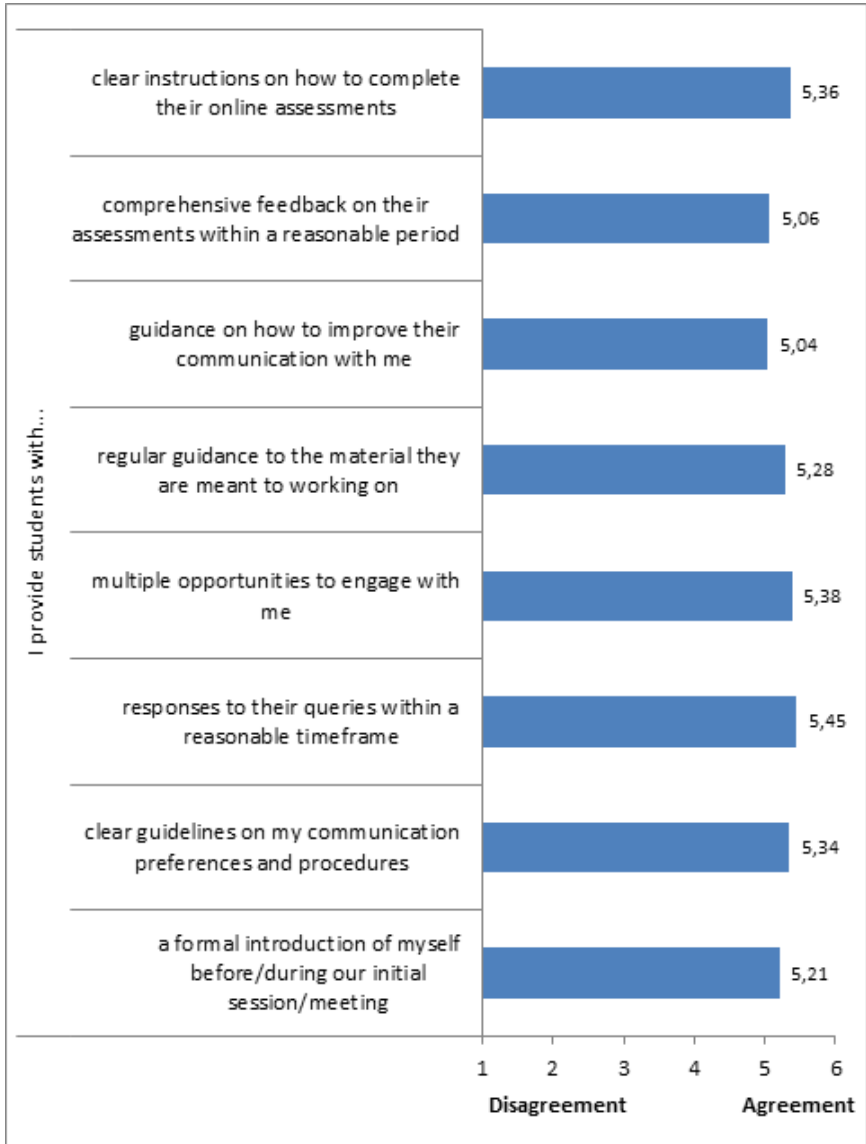There is a significant agreement (p<.0005) with all items (Figure 7) in the *communication skills* construct.

Figure 7: Measuring Communication Skills

Construct 4: Emotional Intelligence

Construct 4 investigated the presence of emotional intelligence to both students and colleagues. This construct focused on the level of empathy respondents had for students (Figure 8) and colleagues (Figure 9) who were facing difficulties in the transition to the online space.

There is significant agreement ($p<.0005$) with all 7 items (Figure 8) in the empathy for students. The results of empathizing with colleagues revealed a significant agreement ($p<.0005$) to all but one item (Figure 9), the lack of self-motivation in the online environment.
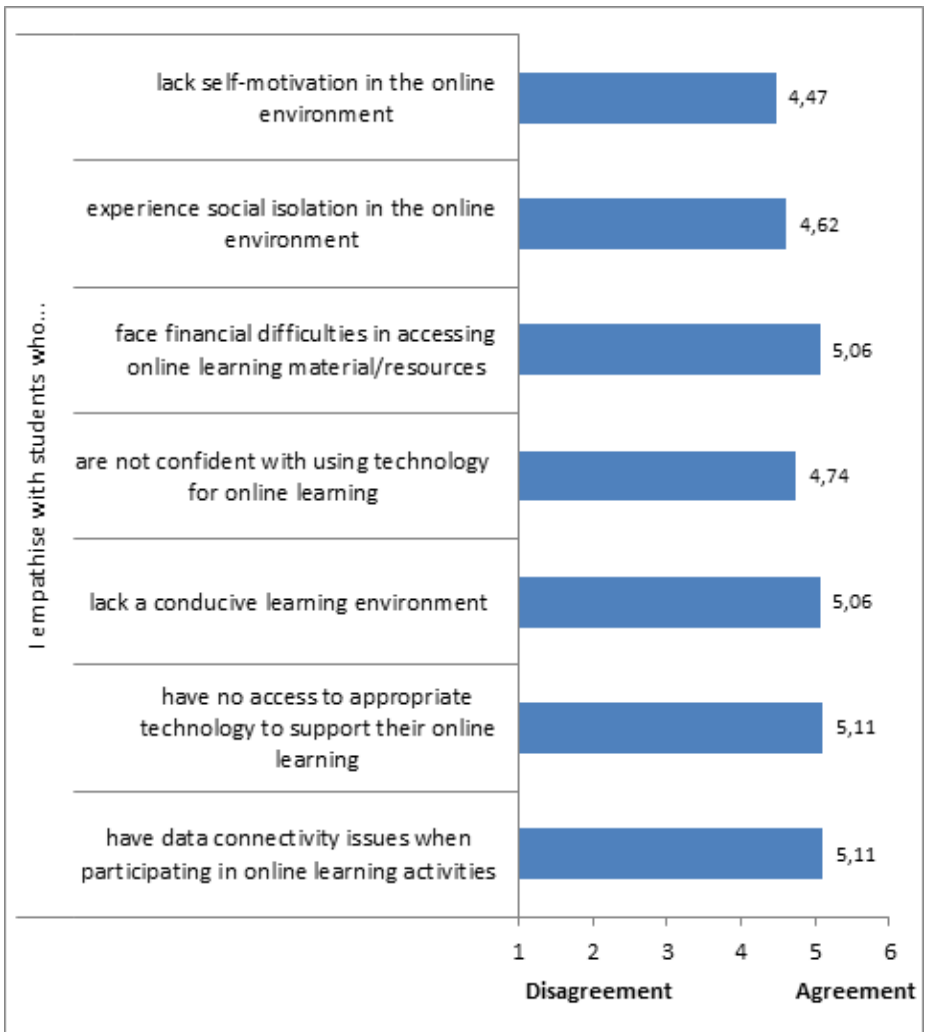
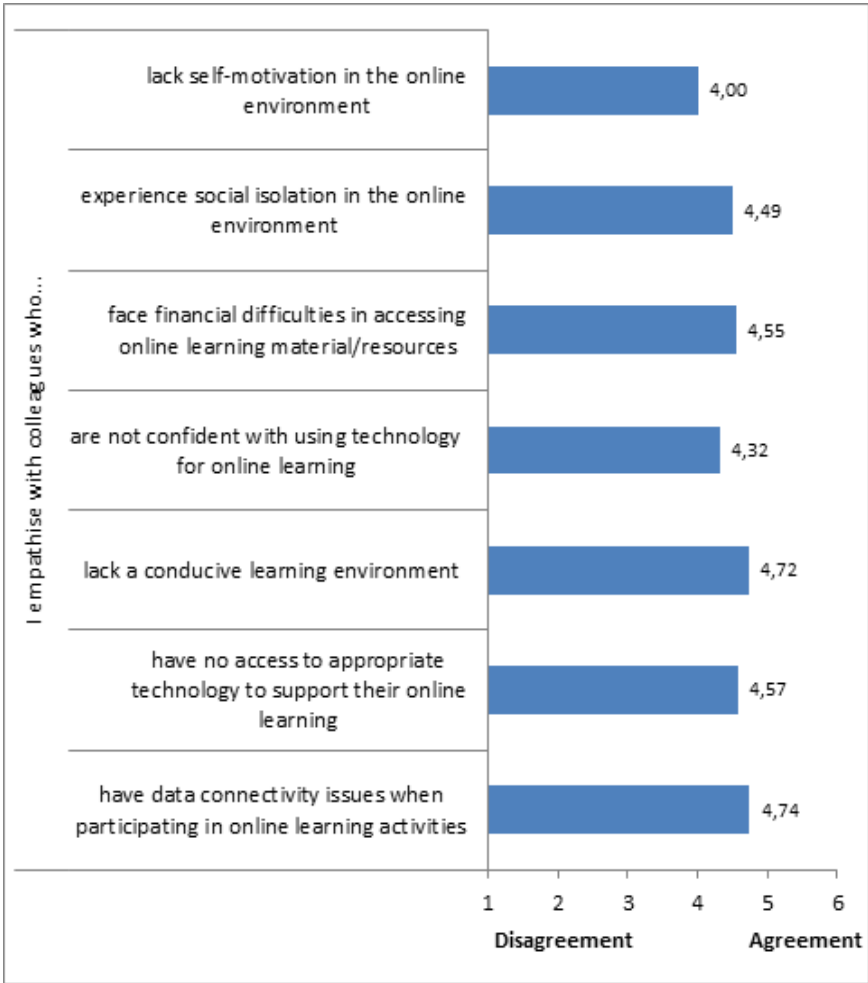**Figure 8: Measuring Emotional Intelligence for Students**

Figure 9: Measuring Emotional Intelligence for Colleagues

Construct 5: Time Management

Eight items, investigating academics' ability to avoid burnout while working in the online environment, are presented in Construct 5. This construct asked respondents to consider aspects such as a personal schedule, balancing work and family responsibilities.

There is significant agreement (p<.0005) with only one item in this construct, the ability to define clear times for student consultation/engagement. There was neither significant agreement nor significant disagreement with the other items listed.
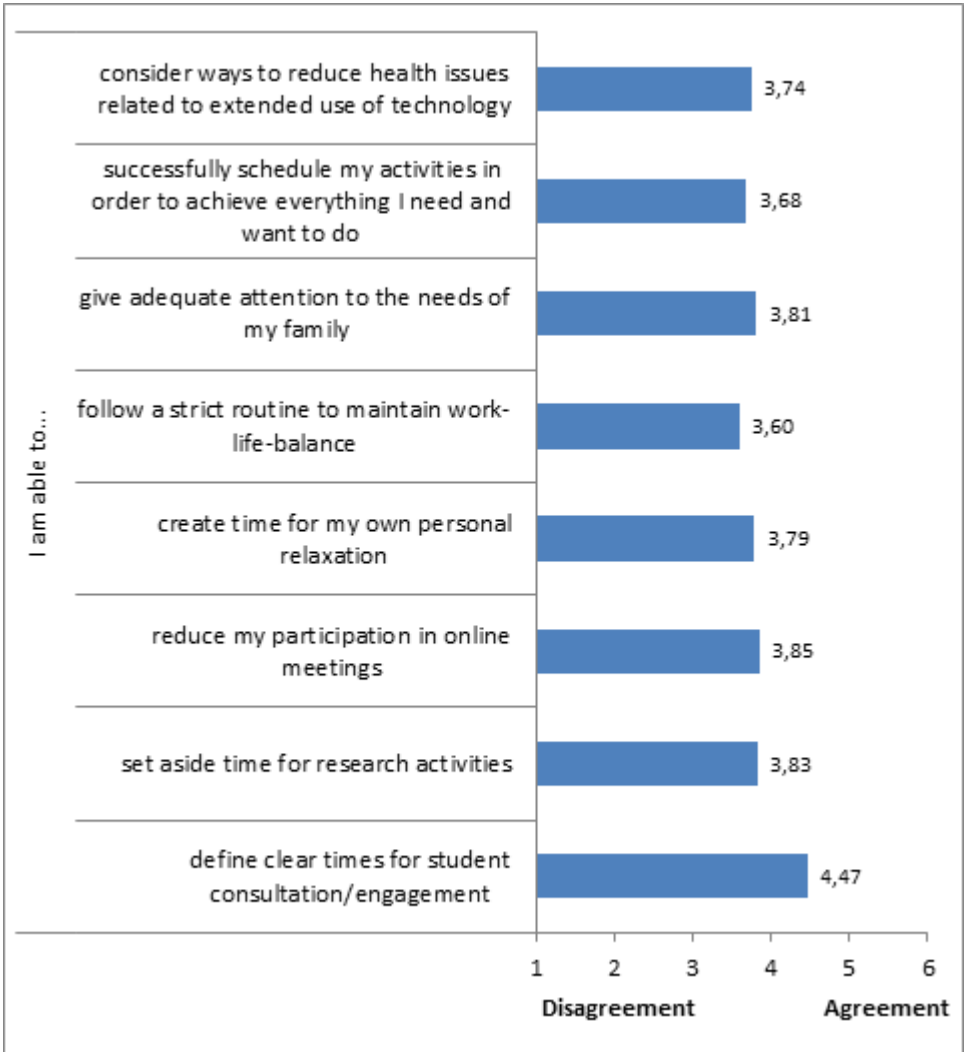
Figure 10: Measuring Time Management

Construct 6 – Communities of Practice

The concept of willingness to share what was self-learnt or through self-initiative, in the online environment, was measured by seven items listed in Construct 6. Here the questions focused on mentoring and willingness to assist colleagues; collegiality in learning from others; and the extent to which they will share new online practices.

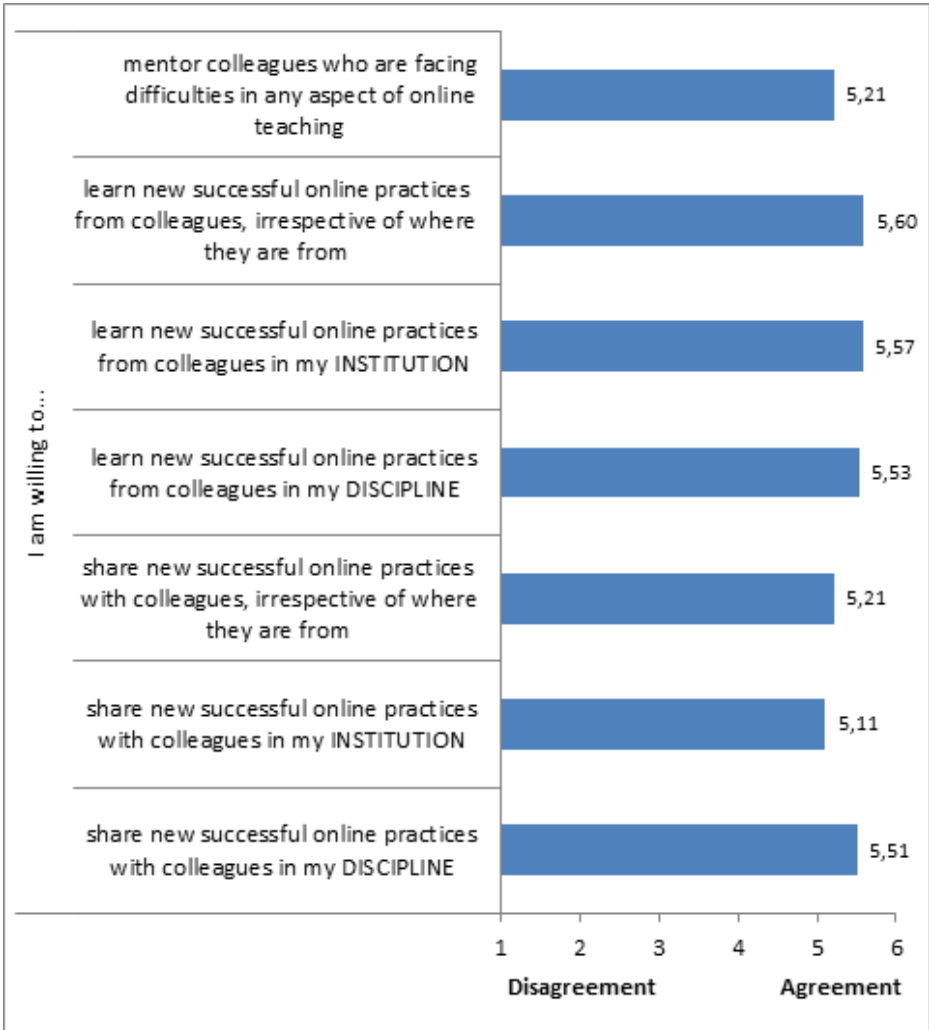There is significant agreement ($p<.0005$) with all seven items in this construct.

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Figure 11: Measuring Communities of Practice

Construct 7 – Recognising Diversity

Six items were presented to the respondents to what extent they took the initiative to understand who their students are/determine the diversity present in their online classroom. Factors such as age, race, gender, ethnic origin, language preferences and learning styles were presented.
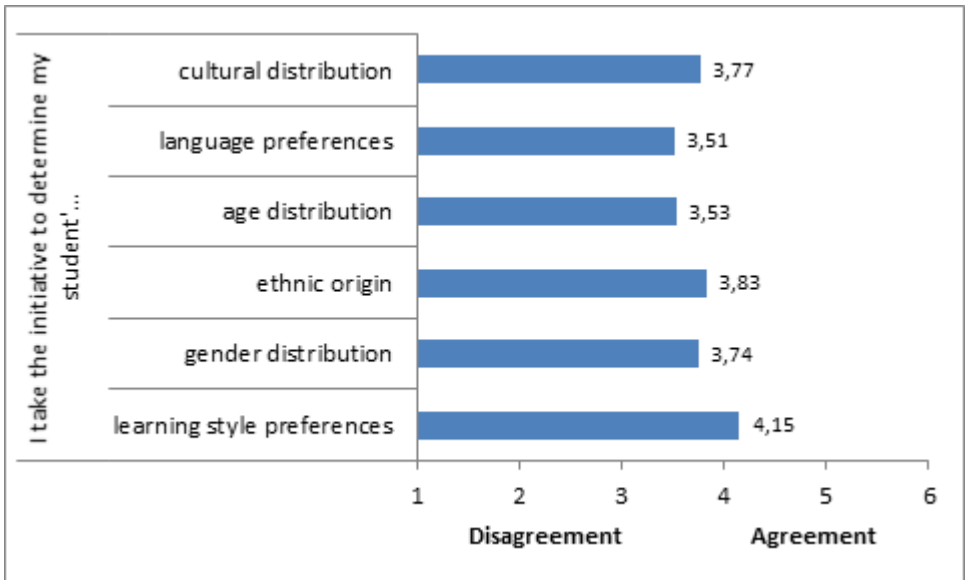

Figure 12: Measuring the Recognition of Diversity

There is significant agreement (p<.0005) with only one item in this construct; the ability to recognise learning style preferences. There was neither significant agreement nor significant disagreement to the other items listed.

Construct 8 – Digital Identity

Five items were presented in Construct 8 to understand the respondents' awareness of managing their digital identity in the online space. Aspects investigated include distinguishing between one's professional and personal digital identity; posting thoughtfully on social media; and maintaining one's privacy online.
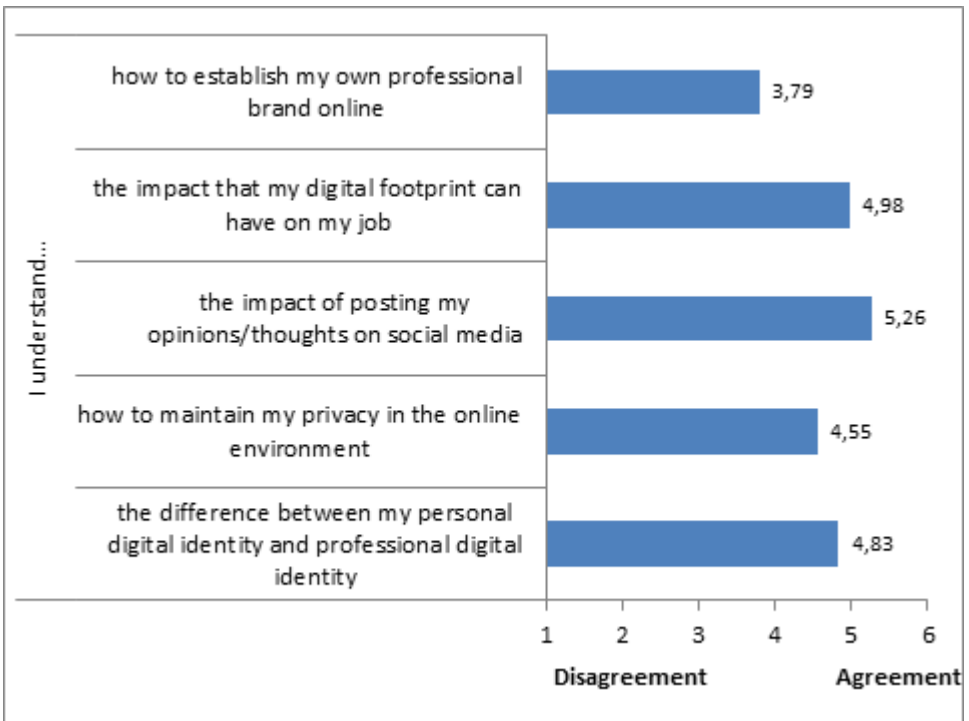

Figure 13: Measuring Digital Identity

There is significant agreement (p<.0005) with all except one item in this construct - the ability to establish my own professional brand online.

Analysis of the Eight Constructs in the ASSET Framework

To look at each construct as a whole, an analysis was done to get a single, reliable, composite score that will measure the construct. First, factor analysis was applied to make sure that the items all loaded well enough onto a single factor. If more than one factor was indicated, the feasibility of that factor was then explored. Finally, the reliability of each composite factor was checked/analysed using Cronbach's alpha. An alpha >.7 indicated reliability. The results of the factor analysis and reliability analysis are summarised in a single table (Table 2).

Table 2: Factor & Reliability Analysis of Constructs

Construct	Label	Items included	KMO	Percentage variance explained	Cronbach's alpha
Digital Literacy	DIGLIT	10.1 – 10.14	.862	57.614	.947
Digital Pedagogy	DIGPED_General	11.1 – 11.3, 11.5, 11.10, 11.12	.710	71.175	.881
	DIGPED_TimeMan	11.6 – 11.8			.804
	DIGPED_Approach	11.4, 11.9			.703
Communication skills	COMM	12.1 – 12.8	.817	65.057	.925
Emotional intelligence-students	EI_STUD	13.1 – 13.7	.823	78.712	.960
Emotional intelligence-colleagues	EI_COLL	14.1 – 14.7	.898	73.046	.944
Time management	TIMEMAN	15.1 – 15.8	.905	68.888	.944
Communities of Practice	COMMPRAC	16.1 – 16.7	.746	53.441	.861

Recognising diversity	RECDIV	17.2 – 17.6	.826	80.884	.954
Digital identity	DIGID	18.1 – 18.5	.763	58.116	.862

For each sub-construct, the agreement scores are averaged to produce a single agreement measure. Analysis was then done on each of the above constructs to ascertain the extent of the agreement/disagreement that each skill set is present.
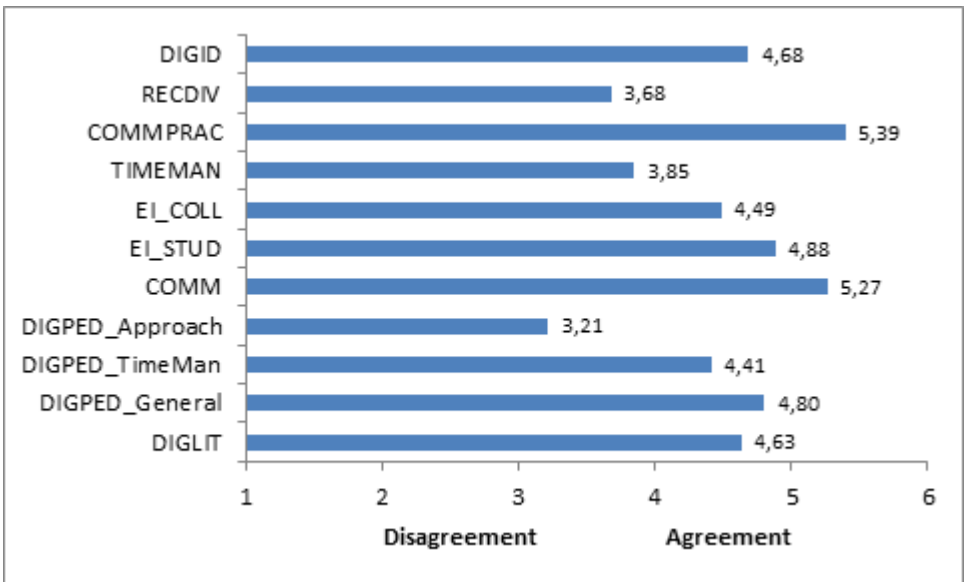

Figure 14: Extent of agreement of each skill

There is significant agreement (p<.0005) that Digital Literacy (DIGLIT), Digital Pedagogy (DIGPED_General, DIGPED_TimeMan), Communication skills (COMM), Emotional intelligence-students (EI_STUD), Emotional intelligence-colleagues (EI_COLL), Communities of Practice (COMMPRAC), and Digital identity (DIGID) are present. However, for the remaining Digital Pedagogy (DIGPED_Approach), Time management (TIMEMAN), and Recognising diversity (RECDIV), there is neither

significant agreement nor significant disagreement that these skills are present.

Significant positive correlations were found between perceived proficiency and digital literacy (r=.673); digital pedagogy (general) (r=.380); time management (r=.531) and digital identity (r=.630). In each case, more perceived proficiency is associated with more agreement that they possess the skills.

Discussion

A small number of respondents considered themselves experts in the online environment, which is expected, as traditionally this institution is a face-to-face HEI, and academics would not have experimented with any forms of online teaching and assessment, unless they possessed an intrinsic motivation for the same – essentially there was no motivation to adopt any form of online delivery or engagement. The respondents displayed confidence in securing their personal digital identity; maintaining their digital footprint; securing the privacy and security of students, content and materials in the online environment; the development and delivery of digital materials; and the extent to which student engagement was facilitated in the online classroom. This shows that despite not having much formal training in digital teaching and assessment, academics were fast to adapt to this new delivery method. It is encouraging to note that respondents indicated that the role of the teacher has evolved from the traditional 'sage-on-the-stage' role to that of a facilitator of learning. Besides the concept of including regular body breaks, all other aspects of digital pedagogy were considered by the respondents when designing their content and delivery. Respondents adopted multiple methods of communicating with their students, as well as provided regular, clear and timely guidance and feedback. There were consistent results for empathy shown to both students and colleagues who faced social isolation; lacked access, connectivity or technology; financial issues and lack of working space. However, respondents were not empathetic towards colleagues who lacked self-motivation. Respondents are clearly struggling to find that work-life balance, especially in the forced work-from-home scenario. The only aspect of time management they are succeeding in is providing clearly defined consultation times for students. The levels of collegiality indicated by respondents were high, with willingness indicated in sharing with, helping and learning new successful practices from colleagues. Diversity was only

identified with respect to learning style preferences by the respondents. The demographic diversity was neglected. Respondents were confident in managing their digital identity and footprint but were not familiar with how to establish their professional brand online.

The research acknowledges that digital pedagogy, as defined by Blewett (2016), includes curation, conversation, correction, creation and chaos. In this study, the researcher focused only on the practical imple-mentation of basic digital pedagogy for teaching, in the sudden unprecedented transition to the online space. It is understood that digital assessment, which slides to curation and correction by Blewett (2016) cannot be considered separately from pedagogy and content. This will be included in future iterations of the framework as an essential skill for academics to possess.

Conclusion

This paper presents a framework developed by the researcher to identify academics' strengths and weaknesses in the online space. The paper then reports on a survey, which presented a series of quantitative questions completed by 47 academics to validate the framework developed. Through the validation of the framework developed, the data from this study suggest that academics transitioned well into an evolving environment where they had to move from a face-to-face mode to a fully online mode, without much training or academic empowerment. While academics were forced to adapt to ensure the continuity of academic activities. While the study suggests academics were confident of their digital delivery skills, the softer skills need to be developed.

Limitations and Future Research

Data were collected during the initial stages of the lockdown in South Africa. This was a busy period for academics, having to transition into a fully online environment. Hence the findings cannot be projected onto the general popu-lation due to a low response rate.

The body of literature on the impact of Covid-19 on HEIs is still developing. The author acknowledges that the data collection involved a self-reflection process. Thus, it reflects a personal analysis at one HEI in South Africa. Future research would look to extend the dataset to academics at other SA and international HEIs.

The framework will be expanded to include essential elements of digital assessments and digital pedagogies.

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