

Developing guidelines for a post-COVID-19 blended learning strategy at a university of technology

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<p>During the COVID-19 pandemic, higher education institutions (HEIs) were catapulted into the digitalisation of education. Although the investigative exploration of online and blended learning drastically increased from 2017, very few HEIs were prepared for the overnight migration enforced by the global pandemic. The education sector is currently entering a post-COVID-19 future filled with uncertainty and lacking clear guidance. This qualitative study aimed to develop guidelines for a post-COVID-19 blended learning strategy within the Faculty of Arts & Design at the Tshwane University of Technology. For this purpose, a case study approach was used. The population sampling for the study was limited to academic staff who lectured within the Faculty of Arts & Design during the COVID-19 pandemic due to their experience of the phenomenon investigated. Data collection was conducted through an anonymous online survey questionnaire. Participation in the study was voluntary and anonymous and participants were able to withdraw from the study at any time without consequence. All ethical considerations and requirements of the Tshwane University of Technology were adhered to. The objectives of the study were explored through thematic analysis, identifying and interpreting patterns of meaning that emerged from the primary data collected. The first two research questions related to lecturers' experiences of the benefits and challenges of the digitalisation of education within the Faculty of Arts & Design at the Tshwane University of Technology during the COVID-19 pandemic. The third research question explored lecturers' views on the benefits and challenges of a continued blended learning approach in the post-COVID-19 future. Four superordinate themes emerged from the analysis of the data: 1) Digital advancement and limitations, 2) Student-centered learning and pedagogical innovation, 3) Resource optimisation, challenges and requirements, and 4) Guidance and support challenges and needs. From these four superordinate themes, specific recommendations are made for the development of guidelines for a post-COVID-19 blended learning strategy in the Faculty of Arts and Design at the Tshwane University of Technology.</p>	
Keywords Arts and design, blended learning, blended teaching, digitalisation of education, post-COVID-19	

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1 Introduction

1.1 Background

According to the Tshwane University of Technology's (TUT) Strategic Plan (2020–2025) (Tshwane University of Technology 2020b), one of the pillars of the institution's strategy is to be a digitally-advanced university. The pillar of digital advancement is defined as follows:

As a leading university of technology on the continent, we embrace and cultivate new approaches that are a feature of our rapidly changing, technology-enabled and technology-driven world. Our adoption of innovative practices and new digital architectures will see us transcend traditional silos and enable us to achieve and expand our strategic priorities.

This pillar of digital advancement is further divided into two goals:

- Deploy digital and smart technologies to enhance student learning experiences, facilitate knowledge creation, increase engagement and accelerate technology transfer.
- Deploy digital technologies to strengthen our internal capabilities to foster sound University governance and deliver effective services.

The 2020–2025 Strategic Plan was conceptualised and compiled before the COVID-19 pandemic became a reality in South Africa. Although the university was on the digitalisation track before 2020, the arrival of the global pandemic catapulted the institution, its staff, and students into the digitalisation of education overnight. This unexpected launch necessitated immediate innovation when using the institution's online learning management system. Extensive online training opportunities were provided to lecturers during the initial lockdown period from 6 April 2020. Online learning commenced informally on 1 June 2020. In the following two years, a blended teaching and learning approach was adopted to bridge the periods of exclusive online learning during lockdown periods, with the combination of online and contact teaching during the phased return of students to campus and venue restrictions on student numbers due to COVID-19 regulations.

The sudden demand for the digitalisation of learning materials and teaching methods resulted in varied lecturer experiences. During informal discussions and team-teaching experiences with colleagues, it became evident that not all lecturers managed the challenges and demands equally. Some lecturers successfully transferred their teaching

material and methods to the online platform in creative and innovative ways, others to a lesser extent, and some not at all. Shortly after the national repeal of all COVID-19 regulations and the return to face-to-face classes, this study proposed to investigate the Tshwane University of Technology's Faculty of Arts & Design lecturers' experiences of the digitalisation of education. This study aimed to draw from the benefits of their experience and views on the continued use of blended learning. The purpose of the investigation was to better understand the advantages and challenges lecturers faced during the digitalisation process to develop guidelines for the future fulfilment of the Tshwane University of Technology's strategic goal of digital advancement.

Building on the institutional strategic plan, a foundational assumption of the TUT's learning and teaching strategy is a digital approach. The strategy posits that "a digital approach is an underpinning philosophy resulting in all modules having a digital presence" (Tshwane University of Technology 2022, p. 12). This foundational assumption includes the expectation that staff will participate in the digitalisation of all educational practices as related to learning, teaching, and assessments. The strategy highlights the benefits of digitalisation in higher education as providing multi-modal opportunities that disrupts geographic barriers, enhances the variety of learning, teaching and assessment opportunities, creates space for reflection and inclusivity of non-traditional and different-abled students, and expands the overall institutional reach. Furthermore, the strategy asserts that "A digital approach is a potentially pivotal component of an evolving institution" (Tshwane University of Technology 2022, p. 12).

This study is therefore directly aligned to the institutional learning and teaching strategy in that it aimed to conduct thoughtful reflection on challenges and achievements of and intentionally develop guidelines for the integration of new technologies in the educational design of learning, teaching and assessment approaches (Tshwane University of Technology 2022, pp. 28 & 34).

1.2 Problem statement

The forced transition to online and blended learning and teaching strategies due to the COVID-19 pandemic created many opportunities and challenges for lecturers in higher education institutions (HEIs) globally (Zhang et al. 2022, p. 621). Within the Faculty of Arts and Design, some lecturers rose to the challenge, using provided training and webinars to empower them to digitalise their teaching materials and approaches. Other lecturers struggled while attempting to stay afloat the proverbial digital education boat, merely holding out until the return to mask-to-mask contact classes. In 2023, all COVID-19 regulations were repealed and tertiary education entered a post-COVID-19 future. In light

of the Tshwane University of Technology's goal to be a digitally-advanced university, a new problem now arose: Will lecturers continue to use online and blended learning and teaching strategies to enable the Tshwane University of Technology's move towards being a digitally-advanced tertiary institution?

1.3 Aim of the study

Through exploring lecturers' views on the continued use of online and blended learning and teaching strategies, the study aimed to provide guidelines for actionable steps that will contribute to the fulfilment of the institution's strategic goal of being a digitally-advanced tertiary institution in a post-COVID-19 future. The objective of the proposed investigation was to determine the benefits and challenges lecturers experienced during the COVID-19 enforced digitalisation of education and the lecturers' views on the continued use of blended learning in a post-COVID-19 future. The purpose of identifying both personal and technological benefits and challenges was to contribute to understanding the current level of success in the digital advancement of education within the Tshwane University of Technology's Faculty of Arts & Design.

1.4 Research questions

The following three main research questions aimed to address the objectives of the current study:

Q1: What were the benefits lecturers in the Faculty of Arts & Design at the Tshwane University of Technology experienced from the digitalisation of education during the COVID-19 pandemic?

Q2: What were the challenges lecturers in the Faculty of Arts & Design at the Tshwane University of Technology experienced from the digitalisation of education during the COVID-19 pandemic?

Q3: What recommendations can lecturers make towards guidelines for a post-COVID-19 blended learning strategy in the Faculty of Arts & Design at the Tshwane University of Technology?

1.5 Research design

The research design serves as the blueprint or a detailed plan for exploring and investigating the research problem identified (Creswell 2009, p. xxii; Mouton 2001, p. 55; Van Wyk & Taole 2015, pp. 164–165). The selection of a research design is firstly identified as either quantitative, qualitative or mixed methods and is based on the

consideration of significant fundamentals such as the research problem, research objectives, the researcher's personal experiences, philosophical assumptions, strategies of inquiry, specific research methods, and the audience the research is being conducted for (Creswell 2009, p. xxii; Merriam & Tisdell 2016, p. 5). The research design serves to identify and outline the explicit procedures and processes of the research plan that will guarantee the validity and accuracy of the investigation of the objectives of the study (Van Wyk & Taole 2015, p. 165). According to Creswell (2009, p. 3), the delineation of the research design starts with broad norms and progresses to the detailed description of the research methods that include population and sampling, data collection, data analysis, data validity, ethical concerns and limitations.

This study required a qualitative research design because the objectives involved exploring and understanding the participants' experiences and the meaning they attribute to the specific experiences in their lives, namely the digitalisation of education during the COVID-19 pandemic (Creswell 2009, p. 4, 2013, p. 47; Merriam & Tisdell 2016, pp. 5–6; Roulston 2006, p. 155). The qualitative design was rooted in a social constructivist worldview postulating that individuals continuously pursue understanding and meaning of their subjective experiences (Creswell 2009, p. 8). From an interpretivist perspective, the assumption was that individuals' sense-making endeavours are personal, diverse, and multifaceted. Therefore, the aim was to explore the objectives of this study through an investigation of these complexities. Furthermore, through an interpretivist philosophical worldview, the researcher acknowledges her personal interest in and experience with the phenomenon being explored and takes into account how it may influence the collection and interpretation of the data (Creswell 2009, p. 8; Merriam & Tisdell 2016, pp. 6–7).

In this qualitative study, the strategy of inquiry included a case study approach to explore the objectives of the study through the use of a survey questionnaire (Creswell 2009, pp. 12–13). According to Creswell (2009, p. 177), a case study approach is utilised for the purpose of conducting a qualitative exploration of processes, activities, and events.

1.5.1 Objectives of the study

Through this qualitative case study design, the following three main objectives were explored and investigated:

O1: Identify the benefits lecturers in the Faculty of Arts & Design at the Tshwane University of Technology experienced from the digitalisation of education during the COVID-19 pandemic.

Q2: Identify the challenges lecturers in the Faculty of Arts & Design at the Tshwane University of Technology experienced from the digitalisation of education during the COVID-19 pandemic.

Q3: Identify recommendations made by lecturers towards guidelines for a post-COVID-19 blended learning strategy in the Faculty of Arts & Design at the Tshwane University of Technology.

1.5.2 Population and sampling

Within qualitative research, purposive sampling is used to select a relatively small group of specific participants from the larger identified population that can best aid the researcher to understand the problem, explore the objectives and answer the questions of the proposed study (Creswell 2009, p. 178; Merriam & Tisdell 2016, p. 7). For the purpose of this study, the identified population consisted of the 179 academic staff members (67 fulltime and 112 part-time) who were employed within the Faculty of Arts & Design at the Tshwane University of Technology in 2020 and therefore have experience in the field of online and blended learning and teaching during the COVID-19 pandemic (Tshwane University of Technology 2020a, p. 67). From this larger identified population of 179, the fulltime compliment of 67 lecturers were purposively selected as participants in the study. The part-time lecturers (112) were excluded from the current study in order to ensure a manageable sample size that adequately meets the needs of the qualitative research design and methods. Participation in the study was optional and therefore a response rate of 30 to 40 participants would be regarded as sufficient to enable saturation during data analysis.

1.5.3 Data collection

According to Duarte and Miller (2015, pp. 243–245), survey questionnaires are ideal tools to gather primary data on the thoughts, opinions, and experiences of a particular group of participants around a previously unexplored or relatively new topic. Survey questionnaires generally consist of a methodically arranged series of a combination of close-ended and open-ended questions conceptualised around the research questions. The aim of the systematically designed questions is to collect data for analysis and interpretation (Ganga & Maphalala 2015, pp. 316–319). Since this study aimed to provide guidelines for a post-COVID-19 blended learning strategy through collecting and analysing primary data on lecturers' views on the continued use of online and blended learning and teaching strategies, the survey questionnaire with open-ended questions was an ideal tool to gather lecturers' thoughts, opinions and experiences of the phenomenon. The open-ended survey questions were structured around the research questions, exploring

lecturers' views on the benefits and challenges of the digitalisation of education during the COVID-19 pandemic and a continued blended learning approach in a post-COVID-19 future. The survey questionnaire with open-ended questions was compiled using a Google form and the link to the form was distributed to the sample population via available digital platforms. Furthermore, the autonomy of prospective participants was respected and therefore participation was voluntary without any form of coercion, subtle or otherwise.

The questions in the survey were designed in a structured format, outlining brief predetermined questions designed to extrapolate specific information from participants around the three research questions. Tools for developing good survey questions were utilised, such as avoiding leading words, providing mutually exclusive choices, asking direct and specific questions, providing the participants with options to not reply, and providing the researcher with the opportunity to reflect and review the predetermined questions to ensure clarity and comprehensiveness, making use of balanced scales, and asking one question at a time (Duarte & Miller 2015, pp. 250–251).

1.5.4 Data analysis

This study used thematic analysis to analyse and interpret the primary data collected through the survey questionnaires. The aim of the thematic analysis was to identify and interpret patterns of meaning related to lecturers' experiences and views on the benefits and challenges of the digitalisation of education within the Faculty of Arts & Design at the Tshwane University of Technology during the COVID-19 pandemic. The thematic analysis of participants' views on the continued use of a blended learning approach in a post-COVID-19 future contributed to the conceptualisation of guidelines and actionable steps that contribute to the fulfilment of the institution's strategic goal of being a digitally-advanced university.

According to Clarke and Braun (2017, p. 297), "Thematic analysis (TA) is a method for identifying, analysing, and interpreting patterns of meaning ('themes') within qualitative data". Furthermore, "thematic analysis can be a method which works both to reflect reality and unpick or unravel the surface of 'reality'" (Braun & Clarke 2006, p. 9). Braun and Clark emphasise the flexibility of thematic analysis that can effectively be utilised in a variety of theoretical frameworks and research paradigms, in both inductive and deductive processes, and through methodical measures of identifying codes and themes from qualitative data. The methodical measures are rooted in rigorous and high-quality analysis, directed by the research question(s) toward identifying codes and themes from qualitative data (Clarke & Braun 2017, pp. 297–298).

The thematic analysis was conducted using the six-step process as outlined by Braun and Clark (2006, pp. 16–42) through the use of a data analysis tool, ATLAS.ti. The phases of the six-step process are: 1) familiarising yourself with the data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; and 6) producing the report. During Phase 1 of the analysis, I immersed myself in the data through repeated readings, searching for meaning and identifying possible patterns, and making notes of probable codes that came to mind. Phase 2 entailed the development of initial codes through a systematic approach, reviewing the entire data set and paying equal attention to aspects that both interested me as the researcher and aspects I identified as potential repeated patterns. During Phase 3, all codes and collected data were analysed toward sorting the codes into possible overarching themes. During this phase of the analysis, I started to consider the significance and relationships between codes and different levels of themes, such as overarching themes and sub-themes. Phase 4 comprised the refinement of identified themes, ensuring that each theme contains clear, coherent, and meaningful data that clearly distinguishes each theme from other themes. During this phase, I reviewed and refined the themes to ensure coherent patterns of data within themes and the soundness of distinct themes in relation to the complete data set. Phase 5 allowed me to categorise the core of each theme through conducting and writing a comprehensive analysis of the story each theme tells in relation to the broader context of answering the research questions. The refinement process during this phase allowed me to identify primary themes and subthemes and gave structure to the hierarchy of meaning within the data. During the final phase of the analysis process, I wrote a concise report, clearly communicating the merit and validity of the analysis in a coherent and interesting way. The narrative report provides sufficient evidence that the data analysis and subsequent themes make valuable arguments in relation to the research questions.

1.5.5 Quality of data

In this study, I applied at least four of the eight validation strategies for qualitative inquiry suggested by Creswell and Miller (2000, pp. 126–129), namely disconfirming evidence, researcher reflexivity, audit trail, and thick, rich description. Disconfirming evidence is a validity tool that is reinforced by my constructivist worldview that supports a multiple and complex reality, thereby contributing to the credibility of data by making room for multiple perspectives. Researcher reflexivity was applied through acknowledging and bracketing my own experiences and preconceived ideas around online and blended teaching and learning strategies both during the COVID-19 pandemic and in a post-COVID-19 future. I created an audit trail by documenting every step of the six-step analysis process outlined by Braun and Clark (2006, pp. 16–42). I provided research results and actions using the data analysis tool, ATLAS.ti, enhancing the trustworthiness of the process. Furthermore, I

used thick, rich descriptions to ensure the credibility of the research conducted by contextualising the participants and the events explored by providing as much detail from the data as possible.

1.5.6 Ethical concerns

Participation was voluntary and anonymous, and no personal data of participants were recorded or stored in any form. Participants were invited through an information leaflet (refer to Appendix 1) to complete the survey questionnaire (refer Appendix 2). The information leaflet outlined the purpose, method, and implications of the study. Furthermore, it provided the participants with clear instructions regarding the completion and submission of the survey questionnaire (Ganga & Maphalala 2015, p. 324). Personal anonymity was emphasised and participants were assured that they could withdraw from the study at any time during the completion of the questionnaire and without any consequences (Smith, J.A., Flowers, P. & Larkin 2009, p. 59). Due to the anonymous survey questionnaire being conducted online, completion of the survey served as an indication of consent. All ethical considerations and requirements, including the information leaflet and consent form, of the Tshwane University of Technology were adhered to. In order to ensure anonymity and no harm to participants, no identifiable information were requested from participants in the survey questions. Permission to conduct the research within the Faculty of Arts & Design at the Tshwane University of Technology was obtained from the dean of the faculty (refer Appendix 3). Although the researcher has an established relationship with the participants due to her position as Assistant Dean (Teaching and Learning) for the faculty, this potential manager-employee imbalance of power was addressed through the use of voluntary and anonymous questionnaires that had no bearing on employee performance. Participation was voluntary and the researcher's position was not used to influence participants to participate. Beneficence to the participants included the conceptualisation of guidelines for actionable steps that will contribute to the fulfilment of the institution's strategic goal of being a digitally-advanced tertiary institution in a post-COVID-19 future.

Willig (2011, pp. 263–279) describes ethical analysis as an approach that is constantly mindful of the need for compassion when interpreting another's experiences. Part of this mindfulness includes the awareness that any study can merely attempt to ascertain a small part or new aspect of a phenomenon but can never claim to understand the experience in its totality (Willig 2011, p. 269). I therefore maintained this stance: that my interpretation of the participants' lived experiences belongs to me alone and I avoided making totalitarian assertions (Willig 2011, p. 270).

1.5.7 Limitations

The study used purposive sampling and therefore does not pretend to draw generalised conclusions on the views and suggestions of all the Tshwane University of Technology staff on the digitalisation of education in a post-COVID-19 future. Furthermore, as highlighted in a similar study by Guppy et al. (2022, p. 12), asking participants to comment on questions about the future while they are still in the change process naturally limits the study to the delineation of personal perceptions and predictions rather than concrete conclusions.

1.5.8 Chapter outline

Chapter 2 outlines the literature review relevant to the study. Chapter 3 titled “Implementation and outcomes”, discusses the results of the thematic analysis framed according to the three research questions. Chapter 4 draws conclusions and makes recommendations based on the results of the study.

2 Literature review

The literature review clearly indicates that research papers and studies on the digitalisation of education within higher education institutions (HEIs) noticeably increased between 2017 and 2018. Although many HEIs conceptualised digitalisation or digital transformation frameworks pre-COVID-19, implementation was slow (O'Dea & Stern 2022, p. 437). Furthermore, though HEIs realised the importance, future necessity, and unavailability of digital advancement in education, the urgency created by a global pandemic could not be foreseen. No one imagined a worldwide pandemic in which it would be impossible to continue education on all levels without using technology (O'Dea & Stern 2022, p. 437). Therefore, COVID-19 unexpectedly catapulted the HEI sector into full implementation of the digitalisation of education (O'Dea & Stern 2022, p. 437).

2.1 Pre-COVID-19 era

Pre-COVID-19 research focused on exploring and debating the need for and advancements in the field of digitalisation in education (Gama, Vega, & Aponte 2018; Gupta, Seetharaman, & Maddulety 2020; Khalid et al. 2018; Müller, Fünfingerlings, & Tolks 2018; Norberg 2017; Seethal & Menaka 2019; Vivitsou 2019; Yershov 2019). Aspects such as blended learning and increasing access through online courses were discussed and debated (Müller, Fünfingerlings, & Tolks 2018; Norberg 2017; Thoring, Rudolph, & Vogl 2018; Vivitsou 2019; Yershov 2019).

Although the value of digital innovation in teaching and learning with technology gained traction pre-COVID-19, as was witnessed by the progressive emergence of massive open online courses (MOOCs), progress was hampered by universities' lack of digital and technological strategy, training, and change management (Norberg 2017). Despite advancements, many academics resist change, and neglect to see the potential of the enriched distance learning and hybrid models. Since the required change management spans across four generations, the successful implementation therefore requires a carefully crafted digital framework to guide institutions towards thriving in the evolving global educational landscape (Norberg 2017). Teachers can be supported during the change management process through communication, coaching, mentoring, and training, enabling them to create engaging and relevant learning experiences that cater to students' needs (Herawati, Tjahjono, Qamari, & Wahyuningsih 2022). Furthermore, it is imperative that institutional frameworks encapsulate the development of effective practices as signified through user insights (Norberg 2017).

Technology is capable of both disrupting and accelerating established processes, emphasising the need for adaptability and innovation in the rapidly changing environment (Gama, Vega, & Aponte 2018). Therefore, strategic execution is a critical predictor of success in digital transformation (Gama, Vega, & Aponte 2018; Norberg 2017). The pursuit of digital advancement necessitates mastery of three essential competencies: rapid identification of new developments, data-informed decision-making, and timely and effective decision-making and action (Gama, Vega, & Aponte 2018; Yershov 2019). An inability to keep up with the rapid advancement of digital technologies often results in outdated material, training methods, and technological equipment (Yershov 2019). For this purpose, continuous industry-engagement and public-private partnerships become critical success factors (Gama, Vega, & Aponte 2018; Yershov 2019). Further success factors include ongoing professional skills development, adopting a competence-based approach, creating scientific and educational online platforms, and establishing individual learning pathways (Gama, Vega, & Aponte 2018; Yershov 2019). Therefore, it is suggested that institutions may capture the full potential of the new digital age by cultivating a culture that encourages the ongoing upgrade of digital abilities and expertise in sync with evolving technology (Gama, Vega, & Aponte 2018; Yershov 2019).

Furthermore, the strategic positioning required for the effective adoption of digital learning and teaching includes the consideration of structural adjustments, financial resources, and the sustainable integration of digital offerings across faculties (Müller, Fünßerlings, & Tolks 2018). As such, the responsibility for success is shared by the institutional management, staff, and students. However, failure to regulate aspects like workload norms, online assessment and proctoring, outdated regulations, data protection concerns, and lack of incentives greatly hinder positive advancement. Therefore, Müller *et al.* (2018) advocates for the generous interpretation of teaching duty regulations to support innovative and collaborative online learning projects. Recognising that the evolving nature of digital teaching formats necessitates ongoing discussion and action (Müller, Fünßerlings, & Tolks 2018).

Examinations of the merits and drawbacks of digital education pre-COVID-19, identified benefits that included improved student employability skills, global knowledge sharing, and the exploration and enhanced use of learning apps, video recordings, and mobile learning. Conversely, the identified challenges included limited accessibility for disadvantaged students, a lack of self-motivation, and reduced interest in solitary learning (Seethal & Menaka 2019). Pre-COVID-19, policies and discourse neglected to address the need to prepare learners and teachers for the future demands and challenges of the digitalisation of education (Vivitsou 2019). Shifts from first to second wave narratives included an increased focus on artificial intelligence, maintaining the argument for

digitalising and online learning. But continued to neglect the need for a more sophisticated pedagogical approach that incorporates critical and socially embedded paradigms to ensure the ongoing effectiveness of technology-enhanced practices in education (Vivitsou 2019).

While pre-COVID-19 studies focused on the purpose, developments, advantages, and challenges of the digitalisation of education, the focus of studies conducted since 2020 shifted to the impact of the digitalisation of education during the COVID-19 pandemic.

2.2 The COVID-19 era

The studies conducted since 2020 emphasise how the pandemic fast-tracked digitalisation developments and forced teachers and students to develop the necessary skills for online and blended learning (Ahmed & Opoku 2022; Gandhi 2021; Grimaldi & Ball 2021; Heng & Heng 2021; Herawati, Tjahjono, Qamari, & Wahyuningsih 2022; Korhonen, Juurola, Salo, & Airaksinen 2021; Zhang et al. 2022). As 2020 unexpectedly threw the education sector and HEIs into digitalisation, the focus shifted to identifying challenges, solutions, best practices, and methodologies for online and blended teaching and learning (Abu, Anissa, & Razan 2021; Ahmed & Opoku 2022; Gandhi 2021; Guppy et al. 2022; Heng & Heng 2021; Herawati, Tjahjono, Qamari, & Wahyuningsih 2022; König, Jäger-biela, & Glutsch 2020; Korhonen, Juurola, Salo, & Airaksinen 2021; O'Dea & Stern 2022; Qarkaxhija 2021; Toader, Safta, Titiris, & Firtescu 2021; Zhang et al. 2022).

Institutions focused on constantly providing support through technology and training, conducting needs analyses, and implementation to increase accessibility and adaptability. Some educators embraced the new opportunities wholeheartedly, some merely complied, while others struggled with serious psychological, technical, and educational challenges.

Some investigations found that students' competences have the strongest influence on the adoption of digitalisation, followed closely by teachers' competence and technology diffusion, in that order. Whereas industry expectations was not shown to have a significant influence on this adoption (Gupta, Seetharaman, & Maddulety 2020). In other studies, teachers' competency, described as technological pedagogical knowledge (TPK) or 'digipedagogical competences', combined with institution-based technology were important predictors of sustainable educational engagement (König, Jäger-biela, & Glutsch 2020; Korhonen, Juurola, Salo, & Airaksinen 2021; Qarkaxhija 2021).

Digipedagogical competences includes both the skill and willingness to use technology, adapt and collaborate (Herawati, Tjahjono, Qamari, & Wahyuningsih 2022; Korhonen, Juurola, Salo, & Airaksinen 2021; Qarkaxhija 2021; Toader, Safta, Titiris, & Firtescu

2021). Crucial engagement included teacher feedback to students regarding learning gaps and online assessments (König, Jäger-biela, & Glutsch 2020).

Although benefits of remote learning during COVID-19 included improved communication, efficiency, cost savings, and increased exposure to technology, researchers found that difficulties arose around inequity, accessibility, communication quality, technical barriers, stress, workload, and privacy concerns (Abu, Anissa, & Razan 2021; Qarkaxhija 2021). As a result the need for and importance of better tools, student support, robust feedback mechanisms, extensive staff and student training, approach to diversification, and increased accessibility surfaced. The limitations of online distance education became evident, particularly in practical professions that necessitate hands-on instruction. Furthermore, while technology may hasten ongoing developments, it may also exacerbate educational and socio-economic gaps (Abu, Anissa, & Razan 2021; Qarkaxhija 2021). Grimaldi and Ball (2021) examined the relationship between the digital revolution in education and neoliberalism, highlighting this paradoxical dynamic. Their study highlights that while digital technologies hold potential for increased access to education, supporting neoliberal principles of freedom, they simultaneously possess the capacity to undermine it. Their paper emphasises the need for further investigation into the holistic effects of the digitalisation of education.

Similarly, while the digitalisation of education provides for a potential rise in income and career advancement, the negative impact of online education was deemed to outweigh the positives (Gandhi 2021). The psycho-emotional challenges faced by teachers included issues such as irritation, depression, strained social relationships, anxiety, fear, and problematic work-life balance. This highlighted the need for teacher training in digital technologies and pedagogy to ease the transition and reduce these challenges. An enhanced student-centered approach can both reduce workload and empower students through prioritising content, facilitating structured self-study, increasing student autonomy regarding topics, the design of innovative activities and improved communication (Gandhi 2021).

Although online education is seen as a part of the broader digital transformation of universities, distinction is made between emergency distance learning during the pandemic and quality online education (Toader, Safta, Titiris, & Firtescu 2021). Considering the post-COVID-19 continuation of online education, Toader *et al.* (2021) conducted a SWOT analysis to identify the related advantages, weaknesses, and threats. Advantages identified included flexibility, quick access to information, diverse teaching methods, financial savings, and enhanced pedagogical skills. Weaknesses encompass increased time requirements, reduced physical activity, excessive tasks, time-consuming

preparation, limited student communication, and dependency on internet quality. Threats involve lack of face-to-face interaction, copyright infringement, student attention issues, isolation, and lack of technology experience. The study suggests that although online education is valuable, it is not without challenges and therefore proposes a blended approach, combining online and face-to-face education, emphasising the importance of teacher-student interaction and feedback (Toader, Safta, Titiris, & Firtescu 2021).

2.3 Post-COVID-19 era

Current studies primarily focus on opportunities and challenges created by the pandemic and have only just begun to explore and investigate the implications for a post-COVID-19 future in education. Student expectations of educational experiences and graduate employability regarding digitalisation were changing pre-COVID-19 (Norberg 2017). Thus, the momentum towards online and blended learning created by the pandemic made digitalisation a reality, and even more so in a post-COVID-19 future. As mentioned earlier, MOOCs were gaining popularity pre-COVID-19 (Norberg 2017; Thoring, Rudolph, & Vogl 2018). Thus, the forced move to online teaching and learning during the pandemic created new expectations of convenience regarding higher education. For this reason, HEIs are looking into expanding their online offerings.

Despite the impetus towards online courses, opinions and predictions about the digitalisation of education post-pandemic are various and contradictory (Guppy et al. 2022). At this point, predictions about implications, improvements, and changes to post-pandemic digital education are mostly speculative (Guppy et al. 2022; O'Dea & Stern 2022). In their study on the post-COVID-19 future of digital learning, Guppy et al. (2022, p. 2) emphasise that a return to pre-COVID-19 digital education is not possible and that in conceptualising a post-pandemic institutional strategy, it is vital to reflect and build on the experiences and insights of staff and students regarding online learning during the pandemic.

Furthermore, Guppy et al. (2022, p. 3) highlight that the forced adoption of technology during the pandemic was “a chaotic, emergency response” and therefore unsustainable as a long-term agent for change. In order to ensure the successful advancement of digitalisation in HEIs, strategies must be aligned with the views of faculty staff, students, and instructional designers (Guppy et al. 2022, p. 3). Therefore, it is imperative to determine the views of lecturers towards the development of a post-COVID-19 blended learning strategy. In addition, Gupta *et al.* (2020) suggests that future researchers should study the alignment of industry expectations with digitalisation in academia, as it is either unventured or at its teething stage and in need of in-depth analysis. Investigation into the

future of online learning in higher education delivers mixed opinions (Guppy et al. 2022). While both staff and students agree that blended learning will increase post-COVID-19, scepticism about the scope and effectiveness of these changes remains. The scepticism is largely attributed to the chaotic nature of the enforced online migration and resultant lack in strategic and systematic training during COVID-19 (Guppy et al. 2022).

A comprehensive bibliometric analysis to provide a thorough picture of research on online learning in higher education worldwide during the COVID-19 epidemic was conducted by Zhang et al. (2022). Their analysis included peer-reviewed papers published between January 2020 and August 2021 by experts from 103 countries including areas in the Global North and Global South. Elements explored in these papers included the use of technology, modification of curriculum, of students, and the overall psychological effects of the pandemic-induced online learning period. Emphasis was found to be centered around medical and chemical education, with prominence of instructional approaches such as inquiry-based learning, discovery learning, hands-on learning, and collaborative learning (Zhang et al. 2022). The paper expanded on the challenges and opportunities presented by the shift to online learning, ranging from technology integration to issues of equality and mental health. Similar to discussions above, highlights of the analysis stressed the role of technology and the importance of creative pedagogies that promote student learning and interaction. Further emphasis included the need to establish a culture of collaboration and inclusivity, while developing strategies for enhancing student time management, effort regulation, and critical thinking (Zhang et al. 2022).

Likewise, O'Dea and Stern (2022) provides a comprehensive overview of the special section of the British Journal of Educational Technology (BJET) focused on online and blended learning in higher education institutions in the post-COVID-19 era. The overview concludes that, although the pandemic-imposed shift to online learning created unique opportunities, little evidence exists to support the emergence of any substantial sustainable pedagogic or policy changes within government or institutions. Their paper, based on the analysis of seven high-quality empirical studies and two review papers, could also find no distinct pattern differences between the West and the East, or the Global North and Global South. The analysis confirmed the myriad of technical and pedagogical challenges caused by the digital disruption, including the negative impact on the mental and physical wellbeing of both staff and students (O'Dea & Stern 2022).

Similar to the current study, the purpose of O'Dea & Stern's paper was to investigate experiences to extrapolate suggestions for the future of blended and online learning in higher education. Pre-COVID-19, online learning was regarded as supplementary and not as an imperative to learning and teaching. Despite the progress made during the

pandemic, the studies analysed indicate that students still prefer face-to-face interaction and experiential components of blended learning. Staff emphasised that in order to sufficiently determine the success of online learning, long-term engagement is necessary due to the skills gap and pedagogical shifts that needed to be bridged. It was determined that simply transferring educational content to online platforms negatively impacted student motivation, engagement and academic success. Needs identified include emotional and social support to enhance belonging and collaboration, improving infrastructure, training, special attention to international students, students with disabilities and mature learners. The authors concluded that the future of online learning remain vague (O'Dea & Stern 2022).

In summary, this comprehensive literature review underscores the recurring findings, emphasising the urgent need for continued discourse and action regarding the digitalisation of education. The purpose of sustained discourse and action being the development of strategic frameworks and effective pedagogies for online and blended teaching and learning. The pivotal role of strategic implementation in driving successful digital transformation outcomes cannot be overstated. This review reiterates the call for continuous engagement and practical steps to ensure alignment with the evolving educational landscape. Moreover, the demand for a more advanced pedagogical approach, grounded in critical and socially embedded paradigms, is emphasised. Similarly, the significance of drawing upon the invaluable experiences and perceptions of both educators and learners, particularly in the context of pandemic-induced online learning, is underscored. Therefore, a holistic approach, aligning strategies with the viewpoints of faculty, students, instructional designers, and industry expectations, forms the cornerstone to navigating this multifaceted field. In essence, this literature review reinforces the complex link between ongoing discourse, thoughtful action, and the realisation of meaningful educational digital transformation.

3 Implementation and outcomes

Although participation in the online survey questionnaire was lower than anticipated, 16 out of the 67 fulltime academic staff members responded which equates to 23,8% of the purposively selected population. All participants confirmed their informed consent in the first question of the questionnaire. 50% of the participants indicated that they have a formal qualification in education and the other 50% indicated that they do not (Figure 1). The formal qualifications in education listed include Postgraduate Diploma in Higher Education (Pedagogy), MBA in Educational Management, Masters Degree in Music Production, Magister Technologiae in Entertainment Technology, Magister Technologiae in Fashion Design, National Higher Diploma in Post School Education, Master of Design, and Haaga-Helia Postgraduate Degree in Higher Education. From these responses it is clear that not all the qualifications listed are directly pedagogical in nature and that some are discipline specific. However, it is not possible to ascertain the pedagogical relevance of these qualifications without further knowledge of the programme content or research topics involved.

1. Do you have a formal qualification in education?

16 responses

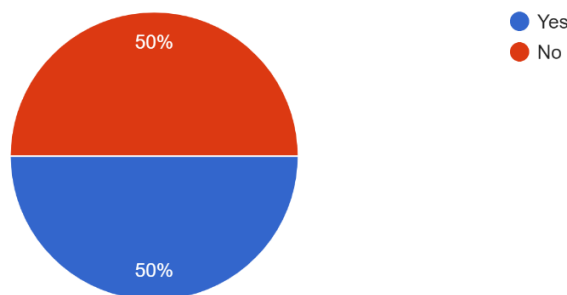


Figure 1: Formal qualification in education

The participants' ratings of their digital competency pre-COVID-19 varied greatly, with 18,8% indicating excellent, 25% very good, 31,3% good, and 25% average (Figure 2). Furthermore, the participants indicated a marked improvement in their digital competency at the time of completing the questionnaire, with a noteworthy increased indication of very good at 68,8% (Figure 3). Although these varied responses confirm that the data collected represents the views of staff with varied digital skills, it does however clearly indicate that no lecturers with below average or poor digital competency responded to the call for participation and is therefore not represented in the data.

2. How would you rate your digital competency pre-COVID-19?

16 responses

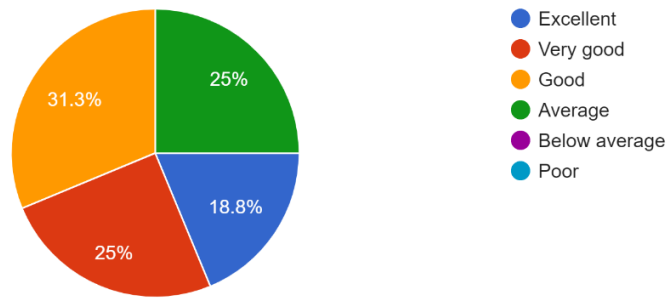


Figure 2: Digital competency pre-COVID-19

3. How would you rate your digital competency at the time of completing this questionnaire?

16 responses

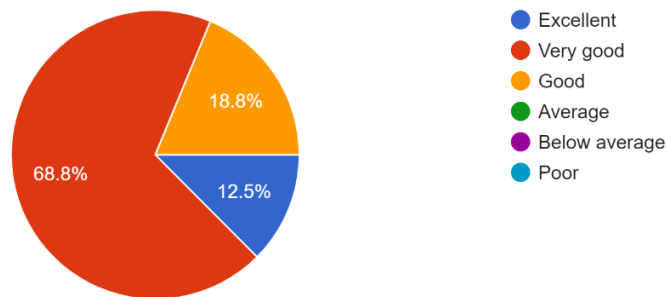


Figure 3: Digital competency at the time if completing the questionnaire

3.1 Perceived benefits of the digitalisation of education during the COVID-19 pandemic

The thematic analysis of the data collected from the participants' answers to the first category of questions regarding their perceived benefits of the digitalisation of education during the COVID-19 pandemic produced four emergent themes. The four emergent themes are 1) Digital competency advancement, 2) Student-centered learning, 3) Resource optimisation, and 4) Pedagogical innovation. These four themes are discussed using a narrative approach, using the participants' direct quotations to support the validity of the analysis and interpretation.

3.1.1 Digital competency advancement

Participants emphasised how the digitalisation of education during the COVID-19 pandemic “forced people to adopt new processes and tools much quicker” and provided a much needed “boost towards the 4IR” and a focus on “valuable digital objectives”. Since “people are set in our ways, and do not always want to change”, the COVID-19 pandemic “forced everybody to make use, get used to, explore and adopt technology that benefits their environment”. It provided opportunity for “finding tools to optimize and make online information interesting for student[s]” which “meant learning new programs and formats to present information”. Through this process, participants were “introduced to various modalities and [having] to navigate their pros and cons”. Specific digital competencies developed include “how to setup and simplify digital learning platforms”, utilising “MS Teams for lecture recordings and meeting with postgraduate students”, using “PowerPoint and AI tools”, “effective use of mobile devices”, and “new software that assists in digitizing content like: Kden live, Premier pro, Illustrator, OBS studio and more”. Participants indicated that they “learned a lot more apps and ways of integrating technologies in [their] teaching approach”, such as “how to do a voice-over in PPT presentations, and how to organise online meetings and conference calls with students”. Learning “how to use the LMS” included skills to “record videos for students, develop e-portfolios, start a YouTube channel, use Google Drive, Dropbox and video editing software”, “working and transferring lessons to online digital platforms”, and employing “digital assessment strategies”.

Participants indicated that “learning new programs as part of the journey has been satisfying”, having to “update yourself and apply online teaching”, “increased [ones] skills base” and “wonderful skills [were] acquired”. The digitalisation of education during the pandemic “forced us to adapt, and opened new ideas and sometimes improvement of our subjects through online teaching”. In addition to forcing lecturers “to become more digital in education” it also “forced students to become acquainted with digital education”.

3.1.2 Student-centered learning

Benefits for students included “keeping students engaged, even without contact classes”, and the availability of all “work/content ... placed on a centralised digital platform for anyone to access information when and how they wanted”. Also, enabling the “referral of content post lecture”, “throughout the year”, and “pre-exam”, making it possible for students to “learn at a pace that is comfortable for them as they can access the lecture recording, and learning material, whenever they want to”. Furthermore, online learning through the LMS made it “easy to communicate with students” and receive “immediate

feedback on lectures through polls” and “discussion groups”. One participant indicated that the benefit of tutorials are “that they augment the face-to-face lesson and provide the student with the opportunity to revert back to the tutorial over and over again”. Lecturers were forced to engage with “problem solving to assist students using the blended teaching and learning strategy” and “organising the information and instruction to be easily understood”.

One participant referred to these benefits as the “democratisation of [the] classroom”, “reaching a wider group of students”. Additionally creating “easier access to students: reducing travel cost” and making it possible to “meet with postgraduate students at their convenience”. Participants realised that, despite being “confined to our study ... through technology we are able to access the world”. Access to “remote workshops, guest speakers and collaborations were (although previously possible) becoming the norm allowing access to a myriad of opinions, experiences and influences”.

3.1.3 Resource optimisation

Further emphasis was placed on the optimisation of resources, both material and organisational. The digitalisation of education ensures that “everything is available online” resulting in “no more photocopying of notes or hand-outs (SAVE THE PLANET)” and “no wasted resources”. Furthermore, the online learning management system “enable many environments to be more streamlined”, “not only the way we work in class, but streamlined assessments, reporting” and “streamline our offerings”. Also, it ensured “back-up of evidence”, the “archiving of content” and “legacy work in education”, and “standardised content that is updated yearly”. In addition, the LMS “is useful by providing information regarding the students’ submission status and online activity” through “students upload[ed] assignments which is recorded”.

Other forms of resource optimisation were described as “minimise[d] teaching load when teaching groups”, the increase of “time efficiency” and “flexibility in time”, “utilising programmes and apps to a greater extend”, becoming “more fluent on applications such as MS Teams and Sharepoint”. One participant emphasised how they “moved from having documents on my computer or hard drive to having everything stored on the cloud providing access at anytime, but also allowing collaboration on documents in real-time”. This provided “more options to streamline our environments” and “shared network systems and time management skills were also improved, as we didn’t have to travel to work and back”. One participant indicated that “remote working means the ability to multitask and multiple income streams were more possible”.

3.1.4 Pedagogical innovation

The sudden digital pivot “re-imagined the teaching space beyond its physical presence”, “made it possible to teach modules online”, ensured participants “learned how to make content differently and the delivery thereof”, and created “flexibility to adapt teaching and learning methods, assessment strategy and curriculum”. Providing a “unique opportunity to evaluate and reconsider some course content”, and apply “different type of vocational training process[ess]” and pedagogical tools. The forced digitilisation of education presented occasion to “streamline our offerings” and create “standardised content that is updated yearly”. Participants “learned how to use/incorporate multiple techniques together for example PowerPoint with a voice over, imbedded information, hyperlinks, video session, recorded lessons”, “new assessment models”, “digital assessment strategies”, “integrated participatory methods”, and “use of video demonstrations”. Also, they developed the “ability to adapt tasks for students to still meet the same outcomes”, and were “forced to find new ways of manipulating the technology to impart the process and praxis skills”, making it possible to “remotely teach practical subjects”.

Although the TUT migrated to a new LMS during the pandemic, it was noted that this new platform “offers a lot more opportunity for insight and development of practical modules and praxis approaches”. It however stil “required creative solutions from the lecturers” in teaching practical modules “such as rendering”. In practical modules, “relevant theory, as well as briefs, rubrics ... can be held in a digital repository” and “assessment informed by such theory can also be conducted”. Furthermore, “demonstration videos as well as links to other sources can easily be shared, which helps students to explore further information”. Participants emphasised that they “had to think out of the box to provide relevant and interesting content”. This “led to pre-recorded tutorials that is now standard in many modules either in video or step-by-step manuals”.

Although the participants’ responses were overwhelmingly positive, indicating that the digitilisation of education “ensures quality of teaching”, and inspired “the quest to explore further”, one participant however indicated that they “learnt more from [their] higher education degree with Haaga-Helia” than through online teaching during the COVID-19 pandemic.

3.2 Perceived challenges of the digitalisation of education during the COVID-19 pandemic

The thematic analysis of the data collected from the participants’ answers to the second category of questions regarding their perceived challenges of the digitalisation of education during the COVID-19 pandemic produced six emergent themes. The six

emergent themes are 1) Student apathy, 2) Digital limitations, 3) Resource challenges, 4) Lack of guidance and support, 5) Sufficient guidance and support, and 6) Forced instant digital advancement.

3.2.1 Student apathy

Several participants made reference to student apathy during the COVID-19 pandemic enforced migration to online learning. “Students lacked motivation to submit on time and [lack of] discipline to manage their time” was evident in their “absenteeism/non-attendance” and “low hand-in rate of projects/assignments”. Eventhough students received assistance on the LMS, “not a lot of students were keen to follow up on the training”. Although “digitalisation is important, it also needs buy-in from the students”. Even currently, some “students are not referring to PPT presentations and additional videos uploaded onto the LMS platform”. It warrants to be noted that the digitalisation of education during the pandemic clearly underscored the inequalities of students’ different levels of “access to content”. Participants highlighted that the perceived student apathy was most likely due to serious digital limitations and resource challenges.

3.2.2 Digital limitations

“From a teaching perspective ... the human element gets lost very quickly when doing an online class”. Participants indicate that it is “not possible to read non-verbal cues such as body language” in an online environment. These cues are important because they “assist in determining the intent of the message delivered, makes it more interesting and allows the presenter to gauge the receiver’s interaction to determine how to adjust to ‘keep’ the room”. As a result, it necessitates the facilitator predicts the “natural discussions that flow from a comment during face-to-face classes” and accordingly plan prompts for the online class. Furthermore, “it was difficult to translate the feedback [on work submitted] online”. Some lecturers “resorted to voice-note messages to the class reps that they forwarded to the specific student”.

Participants repeatedly indicate that “there is no one size fits all” and that “not all content is suitable for online offering”. There are “some practical subjects that demand students to be in studio for equipment, even if it is just to start the project off”. One participant indicated that “since most of my offerings are practical in nature, requiring logistics, equipment, and so on, it was not possible to teach or practice online”. Despite this, “the university developed the tendency to assume that all offerings can be ‘moved online’”. Although “digitalisation is good”, it “cannot reasonably be adopted as a principal teaching mode”. It is “imperative” to keep this in mind, “even as we praise the democratisation of

digital work”. Another observation indicated that “most of our students need face-to-face and personal attention.”

3.2.3 Resource challenges

“Students did not have devices to work effectively while being away from campus”. Furthermore, “inadequate training for students to use the digital learning platforms” were evident. Adding to the digital limitations, there was often insufficient or “no data for students to log into their platforms”, “poor network infrastructures in areas that students reside” and “loadshedding issues”. “The lack of resources for students also meant many were unable to engage with the content or the training.” Participants noted a “lack of transformation from the university’s side, as well as adequate availability to students”. These statements refer to students’ specific computer or laptop requirements, especially “speaking from a design point of view, proper laptops include the mid-high end ‘gaming’ ranging between R15k-20k. Any laptop below R10k is junk and reserved for word processing or professionals that do not require design software”. Participants indicate that “you can make content all you want, but if the students are not supplied (either by personal funding or NSFAS funding) with proper laptops there is no point”. “It would be pertinent for funding organisations to understand this simple principle.”

Due to the emergency nature of the pivot to online teaching, crises management resulted in disorganised working habits that required personal time and energy resources to correct. Participants made reference to the additional administrative load of teaching online. “From an administrative perspective, file management. The amount of digital content must be sorted in some way”, “it takes time and commitment”. Also, “not being familiar with the technology immediately and learning through training” was energy and time-consuming. Although “training was available prior to the pandemic, the uptake was poor”. “Not all individuals are technically/technologically competent” and this posed “a major challenge and a potential bottleneck in the transition phase”. Even after the pandemic, “it is still compulsory to do everything digitally even though some of my classes do not have to be digitalised”. “It sometimes makes the lecturer’s admin workload double to do a contact class session and place the work/content online. Admin hours are highly impacted.”

Furthermore, the university also “did not have funds for upgrading computer technology to deal with online learning”. “Lecture rooms were not equipped to comply with COVID-19 regulations” for instance. “There are certainly ways to adapt, and we are very slow and apprehensive to change, so we need to change that.”

3.2.4 Lack of guidance and support

Participants indicated that they were catapulted into the digitalisation of education during the COVID-19 pandemic “without clear navigation tools or assistance to make informed decisions”. “Programs were still being developed while we already had to make plans for students” and “unfortunately, life could not stand still and wait until the training was completed”. “The speed at which we had to engage and decide on best practice” was challenging and “the amount of training on the new platforms” were insufficient for both staff and students. Participants shared that “by the time the developments were shared we had already learnt to swim and use alternative methods”. Furthermore, all of this occurred “whilst dealing with the fallout of a pandemic”. “It was a little difficult to manage” and “to also teach at the same time”. Moreover, it was challenging to deal with the “dissemination of too much information all at once, which was understandable due to the crises we were experiencing”. Unfortunately, “it felt like we were just defaulting to the latest without much thought and planning”. Almost overnight, “the digitalisation of education and content was now compulsory” and online teaching “became a default stopgap measure, which I think was used rather too freely”.

Due to largely “inadequate training for students to use the digital learning platforms”, “students felt lost”. Some participants indicated that there was “no training supplied” while others commented that “training was sporadic for students and self-directed”. Similarly, lecturer digital competency was reliant on a level of “self-interest and self-taught software by the individual”. “Multiple options” were provided “to have shared networks to be able to continue the general departmental work”. “But as for teaching support”, it was “mostly focused on theory based subjects” while “practical subjects really struggled”.

One participant summarises, “I think we were caught off guard, we need to be better prepared”.

3.2.5 Sufficient guidance and support

The data analysis indicated opposing views on whether the institution adequately supported staff and students during the online pivot. Some participants indicated that they were satisfied with the support they received specifying “one-on-one sessions to assist me with certain issues” and “ongoing training sessions, and constant feedback session”. Other participants shared that the “TUT tried everything in their power to assist us as lecturers” and “relevant staff were extremely patient and helpful, and I think spent an enormous amount of time solving problems and coming up with solutions”. Furthermore, “Brightspace training and workshops were provided” and “it was available daily with videos

that we could access at any time". For the most part, "there were many opportunities for training on the new systems" and these trainings "were sufficient".

3.2.6 Forced instant digital advancement

Although the forced instant digital advancement emerged as a theme from comments about the perceived challenges of the digitalisation of education during the COVID-19 pandemic, the remarks clearly cast a positive light on the matter. Participants observe, "I am glad we went through a crises and had to find solutions to the problems experienced in a short space of time". They regard being "forced to use technology" as "one of the few benefits from the pandemic", emphasising that "the implementation of now standard procedures and applications would have probably been a slow process if not for the need to rapidly find alternatives to continue". Furthermore, "this rapid implementation has in turn allowed people to explore new ways to improve their craft and rethink the endless possibilities". As a result, "it has made progression into the digital forms of education far more manageable" especially considering "the rapid rate in which digitalisation is moving in general".

Participants emphasised their relief at the institutions move to a perceived better learning management system during the pandemic: "I am very grateful that the institution forged ahead and switched to a more user friendly and vibrant Brightspace". Understandably, this move during the pandemic added challenges and increased the need for training and uptake. Clearly "at the time we were not happy about the change, but now we realise what the benefits and beauty of this new system can offer". As a result of the new system employed, "all the work (briefs, rubrics and additional material) is available online for students" and "content has become more interactive and being able to refer back to it is a plus". Furthermore, participants experienced a noteworthy shift in mindset around online teaching. One participant shared the following, "I thought it impossible, but I do think a hybrid form of digital education is possible where practical is concerned". Other comments support this statement indicating that "hybrid teaching should take place" and "much can be achieved".

Upon reflecting, participants commented that "I do like the global trend of online teaching", "digitalisation is a wonderful process" and "it definitely has its place".

3.3 Recommendations for guidelines for a post-COVID-19 blended learning strategy

The thematic analysis of the data collected from the participants' answers to the third category of questions regarding their recommendations for guidelines for a post-COVID-

19 blended learning strategy produced five emergent themes. The five emergent themes are 1) Increased access, 2) Student-centered learning, 3) Change management and clear guidelines, 4) Resource optimisation, and 5) Resource requirements.

3.3.1 Increased access

Participants highlighted how online and blended teaching and learning increases access for students. They indicate that “we can teach a wider variety/reach of students”, “with students being able to access from anywhere”. For this reason it also affords us “the ability to grow the number of programme offerings in the faculty”. The recommendation is “that if the subject allows, we should have it hybrid. It makes the student’s life easier even with things like transport where they are not always able to afford coming to campus” and “they won’t need to find accommodation nearby”. Also, “if a student is late or absent, they can refer to the materials online to assist them”. Lecturer experiences during the pandemic indicated that “students who were sick, attended lessons virtually on Teams”. In conclusion, lecturers indicate that online and blended teaching and learning “is beneficial due to flexibility and adaptation, especially when lectures cannot take place due to student protests and other external factors”.

3.3.2 Student centered learning

Looking forward, participants indicate that the digitalisation of education will become even more important as the new Generation Alpha enters higher education. Participants comment, “going forward, research indicates that blended learning will work better for the coming generations of students”, and, “I do feel that teaching methods need to change to accommodate the learning habits of the current Generation Alpha”. For this purpose, we need to “workshop academics on strategies to teach and work with students within the Generation Alpha”. Also, we need to “inform academics on those classroom and assessment management mechanisms to attain success with that generation of students that they are faced with”. There is a need for “immediate access to training and workshops for academics on strategies to best work with the current generation of students”.

Blended teaching and learning during the COVID-19 period showed that “the asynchronous approach suited the TUT student profile” and “it caters for different learning styles of the students”. Emphasis was placed on the importance of a balanced approach, “there needs to be a balance, students also need to learn how to work independently”. “Online classes have a tendency to turn into group discussions and students don't think individually anymore due to a lack of supervision”. Furthermore, “if lessons are not planned correctly soft skills such as talking in front of a crowd or networking skills can stay

underdeveloped. These skills would normally be developed in face-to-face scenarios automatically through interaction with classmates”.

“Evidence on consultations and talks with the students and how they have engaged in the subject” indicated that blended teaching and learning “definitely has benefits”. It provides opportunity to “assist learners using different teaching strategies” and “it is easy to make your lessons applicable to the real world that is relevant to students at the moment”. Blended learning “is convenient for the students” because “the learner can select what is comfortable to perform optimally” and this creates “more independent students”. It is however important to keep in mind that for online learning to be effective, “students need to be stimulated, online sessions need to be fun and engaging”.

3.3.3 Change management and clear guidelines

The participants’ recommendations visibly indicated the need for change management and clear guidelines in order to promote participation. Participants remark, “it is important to have clear guidance, a way to work, a proposal that everyone can buy into”. However, it is important to keep in mind that “there is not a one-size-fits-all solution, but through listening to the needs and frustrations, guidelines can be put in place that will provide structure to the blended learning approach and thus ensure the best of both worlds are highlighted”. This necessitates “a clear plan of action that takes everyone into consideration, but still provides wiggle-room in the guidelines to allow for individuality”. A further suggestion is the “roll out of promotion of blended opportunities to students and staff that are still reluctant to engage – find out why and address these oversights, so that many will not be left behind”. Also, “allow time for certain subjects to figure out how to go online”. Especially, “some practical subjects will take longer to digitise, and figure out how to do online”. Finally, “the guidelines are of utmost importance in order to ensure that the best of the blended learning experiences created during the pandemic are kept and the mistakes are learned from”.

This need for guidelines and change management pertains to both staff and students. “Many students still resist the change, and may even be doing so due to negative influence from staff who are anxious about embracing this change.” Furthermore, students are “increasingly disconnected or uninvested” and their “late submissions [are] frustrating and add[s] to the already strained workload” of staff. Also, if blended teaching and learning is not managed properly, “students might think that they are busy with a distance learning” course. Therefore, “students need to be inducted more to be shown the excitement and benefits of blended learning”.

In order for blended learning to be successful, it requires “in a word, commitment”. Participants noted “that some lecturers could engage more in uploading material” and “as much as I am for a blended learning approach, I do think that unfortunately it will take some time for people to adapt”. They however expressed gratitude for the opportunity to participate in this study and concluded by saying, “Thank you for the chance to participate”, “Thank you for asking for the staff point of views, these surveys always ask the students opinions”, and, “Good luck with your research, and thank you”.

3.3.4 Resource optimisation

Participants indicate that a blended learning strategy in the post-COVID-19 era provides great opportunity for resource optimisation. It provides the “potential to better utilise existing infrastructure”, for example, not having “to teach the same class over and over due to limited venue space”. A strategy could also assist in enhancing existing infrastructure, the “TUT needs to upgrade internet technology, have dedicated well equipped smart classrooms and digital interfaces that communicate with smart technology”. Emphasis was also placed on the resource advantages of an online learning management system. These advantages include the “archival and legacy work”, “information stored online is a great benefit”, ensuring that all designed material remains stored and available. Participants indicate that “it is also a useful backup for when a lecturer cannot attend a class and can pre-record the session and make it available online”. Participants indicate that what will assist this process is “if the content of the modules of the previous year is copied automatically to the next year”.

Recommendations for optimisation include “maximising the online time separately to create a more conducive contact time environment”. Participants suggest that “contact time is in person [and] theory time is online and paired with quizzes”. As such, “theoretical underpinning can be watched and rewatched and the practical/contact time is enhanced, and questions may be answered and answers discovered”. In this way, “the blended approach offer you the opportunity to spend more time on tasks that require one-on-one or face-to-face assistance, such as critique sessions or discussions while repetitive tasks can be automated or lessons pre-recorded in preparation for the contact sessions”. This also allows for more opportunity during contact sessions for “group and peer review as well as lecturer input”. Another suggestion involves “filming steps to complete projects, videos that students can refer to over and over again. Ensuring you have multiple projects ready to be released online”. However, it is vitally important that a clear distinction is made between online and contact time, creating a “dedicated time for online and dedicated time for contact. They cannot fall in the same session”.

In general, participants have a positive outlook on blended learning in the post-COVID-19 era. They say, “I only see positives arising from blended learning”, “I do not foresee challenges. Blended approaches are good”, “it has a positive impact”, “blended learning is great. It helps for both parties, students and lecturers” and “all courses should implement this strategy”. However, they emphasise the need for a “community of practice” where “staff should find sharing opportunities to engage on best practice”. One participant shares, “I initiated a technology committee in my department, fortunately all the staff members are technological astute, we meet informally daily on coffee breaks and discuss problem solving using technological solutions i.e solving student issues with a technological intervention”. Participants suggest “that we try more formats of teaching and see if they work. Trial and error”. Also, they highlight that “it is important to regularly check in with stakeholders to see if improvements can be made to the system/process” and thus “subsequent discussions can then lead to new ideas for implementation”. However, when it comes to implementing new ideas, participants emphasise that “there is not a lot of time for additional long training sessions, it is much more helpful to have a short informative video that I can watch when I forget how to do something or how to incorporate something new into my lessons”.

3.3.5 Resource requirements

Technological & Environmental support

The biggest challenge that surfaced from the recommendations for a blended learning strategy in the post-COVID-19 era is the resource requirements, especially regarding “technology and infrastructure”. Participants indicate that “students (and staff) without the necessary technology and support is the biggest downfall”. They comment, “unfortunately, the students lack internet technology and technological infrastructure”, they lack “suitable devices through which to access teaching platforms”, “access to devices for students, access to data for students”. Blended learning “is just problematic when the students are not equipped (literally with devices) to manage”. This necessitated compromise, for example, “videos were short to cater for lack of availability to Wi-Fi and high data costs”. Participants emphasise that “unless a way can be found to provide suitable devices for the student body, blended teaching and learning opportunities will be limited”. Also, “students should receive devices that can handle the software needed to complete the work. It should not be up to the CFO to decide”. Students require “access to devices to work from home or any other spaces (laptops/tablets), access to data, and network infrastructure”. Furthermore, “students living situations aren't always set up in a way they can use technology” and “load shedding or unreliable electricity supply jeopardises online

learning". It was noted that "a number of students really need a separate living situation to focus on their studies".

It is clear that "more dedicated Wi-Fi and technology options" are required as well as "infrastructural support, devices that are bluetooth compatible, Wi-Fi compatible and recording equipment". Participants underscore specific needs regarding "studio equipment", "digital tools that are available to all students", "artificial intelligence software/programmes that can be used in lectures/classroom management/teaching", and "external applications and mood board programmes". These needs include increased accessibility to "working in teams and have team related feedback". In addition, the necessity of ongoing training and support is stressed, "continuous, interesting and relevant training is important, to look at different teaching and learning platforms and social media". Participants indicate that "we need more training on external applications that can be used" and request "continued technical and curriculum support (which was never lacking during the pandemic)". They "recommend that there is a dedicated support technician in our faculty that can help with making the recordings and videos".

Furthermore, participants appeal for "more support on the latest technology that can assist with making videos, recordings and making the files smaller so that they can be uploaded", "training on a wide range of softwares to be able to fully integrate online with theory", "more training on cloud and one drive systems. For example, how to give/ gain access to files", and "possibly video editing and how to use the Online learning systems productively". They indicate that "there is this training, but it does take a lot of time" and therefore "shorter training with better related video tutorials or step-by-step manuals" will be most efficient. Additionally, participants suggest "one-on-one consultations to see how you are progressing". They accentuate that "continuous training of short courses definitely helps one with how you could implement some of these areas in your subject but also [serves as] a reminder of different ways to approach digital learning". One participant shares, "the Haaga-Helia vocational training in 2022 opened up my eyes for multiple possibilities in using online applications as well as teaching and assessment strategies. More lecturers need to attend the Haaga-Helia sessions".

Keeping up with digital advancement

One participant shares concerns about the current gap between basic education and the projected digital advancement within higher education.

I firmly believe that in our current socio-economic state in this country, Basic Education needs to step up the quality of its offerings to minimise the gap between

low grade school exit, and entry into what should become technologically advanced Higher Education.

Emphasis is placed on the importance of keeping up with technological advancement. Participants indicate that “we need to stay abreast of what technology can offer”, otherwise “not only will we be left behind the world which is moving at a tremendous speed into the digital world, but our innovation and expertise will be greatly lacking”. Also, we will be “leaving students behind”, “who will have to find ways to play catch-up outside of their learning experience”. Furthermore, “it is imperative to try and stay abreast of one's discipline and blended offerings force you (as educator) and student to grapple with new innovative ways to transpose the learning”. Participants signify that “through the online environment you are continually able to access new and relevant information and examples”. Also, “more outputs and engagements with industry for lecturers” is possible.

One participant comments that “this is an important study which can serve as a motivational tool for online teaching and learning resources”.

Workload

Participants highlight that blended learning undoubtedly adds to lecturers' workload, and that a successful strategy will need to address the requirement for additional resources and support. “I think the lecturers are under tremendous pressure in terms of their workload and need more support to teach both face-to-face and online.” Participants share, “it is very time consuming to build content online to be presented professionally” and “feel that the LMS should be considered in the workload norms of the lecturers, especially if you are responsible for many modules”. Also, “administrative tasks can get more complicated if there are not a standard for the whole University” and “it is very time consuming. There are not enough admin hours to dedicate to building content perfectly online”. If possible, the strategy should include “more staff. Full time staff are running many modules with no admin time to support the online content” and therefore “support from the university in terms of SLE and closer discussions on how to make this system work”. “As a staff member I like the blended learning approach, but the amount of admin work is underestimated. It takes a lot of time and planning for online content and delivery”. One participant delivered a specific example request that could assist in making blended learning more efficient:

From a design point of view, maximising contact time by having more than one studio master for critique. Appointing part-time staff for their full hours (19) of which three hours must be dedicated to a practical module for critique. Example: Head Lecturer – heads the lessons and critiques. Two to three Studio Masters – deliver only critiques. This will result in: Diverse input

from various studio masters; Closer one-on-one action (10 students to One studio master); and, weekly rotation between studio masters.

From the preceding discussion it is clear that any post-COVID-19 blended learning strategy will have to include clear and comprehensive guidelines on all resource requirements highlighted.

4 Conclusions and recommendations

It is clear from the outcomes of the thematic analysis that there are emergent themes that cut across the three research objectives identified at the start of the current study. An analysis of the emergent themes produced four superordinate themes. The four superordinate themes are 1) Digital advancement and limitations; 2) Student-centered learning and pedagogical innovation; 3) Resource optimisation, challenges, and requirements; and 4) Guidance and support challenges and needs. A discussion of these four superordinate themes contextualises the findings of the study within the theoretical framework outlined in the literature review above. The conclusion of this analysis and discussion delivers the intended recommendations for the development of guidelines for a post-COVID-19 blended learning strategy within the Faculty of Arts and Design at the Tshwane University of Technology.

4.1 Superordinate themes

4.1.1 Digital advancement and limitations

From the data analysis it is clear that the catapult to online and blended teaching and learning during the COVID-19 pandemic, forced lecturers to advance their digital competencies at an accelerated pace (Ahmed & Opoku 2022; Gandhi 2021; Grimaldi & Ball 2021; Heng & Heng 2021; Herawati, Tjahjono, Qamari, & Wahyuningsih 2022; Korhonen, Juurola, Salo, & Airaksinen 2021; Zhang et al. 2022). Although digital advancement were introduced prior to the pandemic, the uptake was slow and would've remained so if academics were not pressed to quickly learn and adapt (Norberg 2017). The advanced digital development was experienced as stimulating, innovative and exciting (Abu, Anissa, & Razan 2021; Qarkaxhija 2021). Also, the pivot forced students to adapt and advance at a quicker pace. The importance of a good and user-friendly learning management system was emphasised.

Limitations of online teaching are highlighted, especially the lack of face-to-face contact which enables added factors such as body language and other non-verbal cues (Abu, Anissa, & Razan 2021; Qarkaxhija 2021; Toader, Safta, Titiris, & Firtescu 2021). It is common for presenters to 'feed' off the energy of the room, to 'read' the room and adjust accordingly. These are important elements of effective presentation and engagement which are not present in the online environment. Further emphasis was placed on the fact that many students need the personal interaction and support. Also, online teaching is not appropriate for all modules and it is therefore not possible to make blanket decisions about online and blended teaching and learning practices.

4.1.2 Student-centred learning and pedagogical innovation

The online platform is regarded as being student-centered by increasing access (Grimaldi & Ball 2021). Providing learners with uninterrupted access to all module content, opportunity to refer back and revise any component of the work completed, and occasion for self-paced and self-directed learning (Gandhi 2021; Toader, Safta, Titiris, & Firtescu 2021; Zhang et al. 2022). Specific elements of the online platform also ease communication with students and enhances feedback opportunities on lecturing and module content and offering (Abu, Anissa, & Razan 2021; Gandhi 2021; Qarkaxhija 2021). Furthermore, online activities promote student engagement and participation (Gandhi 2021; Zhang et al. 2022). A vital element in teaching the current student population. The online platform has the capability to enhance contact classes and compliment practical and praxis-based modules. Tutorials with step-by-step instructions greatly assist the teaching and learning process and the relevant theory that underpins the praxis can be offered and assessed through various assessment methods online. This provides opportunity for pedagogical flexibility, innovation and renewal, critical aspects for the current fast-paced changes in the global educational landscape (Arek-Bawa & Reddy 2022; Toader, Safta, Titiris, & Firtescu 2021; Zhang et al. 2022). Furthermore, migrating content to an online platform drives lecturers to reevaluate the format in which content is structured and offered to students. Emphasising the need for accessibility and comprehension, simplifying the understanding and assimilation of knowledge and skills.

Access is also increased because students can study from anywhere (Grimaldi & Ball 2021). This opportunity potentially reduces expenses related to accommodation and travel. It provides opportunity for students to continue attending and studying during unplanned interruptions due to illness or external challenges such as protests. Additionally, it grants occasion for greater industry connection and interaction not limited to location, enhancing valuable national and international engagements. Also, online and blended teaching and learning increases opportunity to grow the programme offerings within the faculty.

It becomes crucial to adapt to the new generation of students being currently taught and those who will enter HE soon. These students are digitally competent and dependent, making immediate and ongoing staff training and empowerment vital to ensure the adequate digital competency of academics (Pika & Reddy 2022). Asynchronous teaching promotes the development of autonomous students whereas contact classes provide opportunity for the development of soft skills such as social interaction, networking, and presentation skills. Producing a well-rounded student therefore necessitates a balanced

approach which ideally positions blended learning as pedagogical approach (O'Dea & Stern 2022).

4.1.3 Resource optimisation, challenges, and requirements

The use of an online learning management system does not only provide opportunity for students to have easy access to content and information, but streamlines processes for staff and departments as well. The imposed digital advancement required environments to work and collaborate progressively more online and streamline administrative processes. This created longterm benefits regarding workload, both administratively and logistically. Furthermore, online teaching enables lecturers to teach bigger classes and overcome venue restrictions. Prerecorded lessons and the archiving of material additionally aids resource optimisation. Automatic transfer of all content from one year to the next greatly advances the optimisation.

The biggest challenge to the digitalisation of education is the digital and environmental resources required for effective online and blended teaching and learning such as equipment, devices, network, data and electricity (Abu, Anissa, & Razan 2021; Müller, Füngerlings, & Tolks 2018; O'Dea & Stern 2022; Pika & Reddy 2022; Qarkaxhija 2021; Toader, Safta, Titiris, & Firtescu 2021). Especially students enrolled in design programmes need computer or laptops that can run highly specialised software. The impression prevails that there is a lack of understanding of these needs from the institution and the bursary funds. More possibly, it is the limitation of available funds that prohibits them from making these provisions available. Whatever the reasons, without proper equipment and infrastructure, online or blended teaching and learning become nullified (Pika & Reddy 2022). Similarly, the institution is slow in changing the teaching venues into digital spaces advancing online and blended teaching and learning. The slow pace might also be contributed to limited resources. This has been identified as another challenge to progressive advancement.

The initial introduction of online teaching increased administrative workload (Abu, Anissa, & Razan 2021; Gandhi 2021; Qarkaxhija 2021; Toader, Safta, Titiris, & Firtescu 2021). Lecturers needed to learn new skills, attend workshops and training, and redesign content for online offering (O'Dea & Stern 2022). Post-COVID-19, this administrative load did not necessarily decrease, as the current requirement to also make contact class content available online results in double workload. It is imperative that a distinction is made between the online requirements of modules using different modes of offering. Especially the distinction between contact and fully online classes. Also, to clearly delineate the time periods allocated to each offering style in a module utilising blended teaching. It becomes

cumbersome and ineffective when contact and online styles become convoluted. Instead, they need to compliment each other and make both more effective through clear separation.

Designing content and activities for blended learning is time consuming and in most instances the current workload norms do not provide hours for the extra work required. In order to move forward successfully, it is imperative that the administrative load of lecturers teaching in the hybrid space is considered and the necessary resource support is provided. Also, as the teaching and learning space is redesigned, it needs to be reimagined to address the workload challenges it creates (Müller, Fünfingerlings, & Tolks 2018).

To fully utilise the opportunities blended teaching and learning provide, it is imperative to create a community of practice (Gama, Vega, & Aponte 2018; Yershov 2019; Zhang et al. 2022). The purpose of the community should be to share ideas and innovate through experimentation. This should include external stakeholders to ensure the academic programme keeps up with industry advancements (Seethal & Menaka 2019). It is recommended that new ideas are shared through short and easily digestible video presentations or demonstrations rather than time-consuming workshops and training. However, ongoing training and assistance with new and interesting applications are vital to remain innovative and relevant (Pika & Reddy 2022). This necessitates the need for ongoing dedicated technical and curriculum assistance established during the pandemic pivot.

In the fast paced changes of the post-COVID-19 era, it is crucial that higher education keeps up with digital advancements and integrate ongoing new developments in innovative ways (Arek-Bawa & Reddy 2020). This ensures that graduates are industry and future-ready (Arek-Bawa & Reddy 2020; Seethal & Menaka 2019). If not done, graduates will enter industry with an insurmountable disadvantage given the velocity of digital transformation in the world of work (Arek-Bawa & Reddy 2020; Gama, Vega, & Aponte 2018; Yershov 2019). Furthermore, technology should be utilised to increase student exposure and industry engagement. Finally, in order for higher education to meet this challenge, basic education needs to bridge the current gap to digitally-advanced HEIs (Pika & Reddy 2022).

4.1.4 Guidance and support challenges and needs

Change management is critical in the successful implementation of online and blended teaching and learning. Unsurprisingly, this crucial factor was identified during the pre-COVID-19 era (Herawati, Tjahjono, Qamari, & Wahyuningsih 2022; Vivitsou 2019). Given

the overnight pivot during the COVID-19 pandemic, there was insufficient time and resources to design a structured plan to ensure user engagement and adoption (Guppy et al. 2022). Consequently, staff and student experience of the level and value of support provided differ greatly and the indifference demonstrated by some staff and students continue into the post-COVID-19 era (Guppy et al. 2022). Furthermore, student apathy is enhanced by socio-economic inequalities and resultant resource deficiencies (Abu, Anissa, & Razan 2021; Grimaldi & Ball 2021; Pika & Reddy 2022; Qarkaxhija 2021; Seethal & Menaka 2019; Toader, Safta, Titiris, & Firtescu 2021). The abrupt expectation for staff to experiment and innovate ahead of proper training and assistance, created gaps both in the change management process and the pedagogical foundation for the digitalisation of education (Pika & Reddy 2022; Vivitsou 2019).

Therefore, the future success of the digitalisation of education within the faculty is dependent on clear guidelines that promote implementation and participation (Guppy et al. 2022). A change management plan needs to be structured around the challenges and needs identified through active and open engagement (Guppy et al. 2022; Norberg 2017; O'Dea & Stern 2022). Keeping in mind that the offering modes of modules differ greatly and therefore a uniform approach will not reap the required results (Toader, Safta, Titiris, & Firtescu 2021). The action plan will need to include clear guidelines while providing room for uniqueness and flexible timelines (Gama, Vega, & Aponte 2018; Guppy et al. 2022). Also, the action plan need to include guidelines for students to ensure they understand the difference between fully online or distance education and blended teaching and learning. And to enhance excitement around the possibilities of the digitalisation of education.

4.2 Recommendations for the development of guidelines for a post-COVID-19 blended learning strategy

In conclusion, the following guidelines for the development of a post-COVID-19 blended learning strategy are extrapolated from the four overarching themes:

1) Digital advancement and limitations

- To advance the digital competency of staff and students, a certain measure of challenge is required, otherwise, the personal and institutional progress is too slow
- Effective blended learning requires a good and user-friendly learning management system
- The limitations of online learning need to be considered and catered for (e.g., lack of social interaction and development of soft skills)
- Module offerings differ greatly and therefore one size does not fit all

2) Student-centered learning and pedagogical innovation

- Design online activities to increase access
- Design online activities that promote self-directed learning, and enhance student participation and engagement
- Enhance practical and practice-based modules by designing online activities that reinforce practice and facilitate and assess the theoretical underpinning of the praxis
- Designing and redesigning online content ensures continuous pedagogical reflexivity, flexibility and innovation
- Utilise the online platform to enhance industry connections and interactions nationally and internationally
- Empower staff to keep up with digital advancements

3) Resource optimisation, challenges, and requirements

- Utilise online systems to reduce administrative loads
- Address challenges regarding digital and environmental resource requirements
- Delineate differentiated online requirements according to module offering modes e.g., fully online (synchronous and asynchronous), blended, and contact
- Redesign workload norms to consider the differing administrative loads of different offering modes
- Create a community of practice
- Ensure ongoing and effective technological and curriculum support for staff and students through both self-directed activities and individual support

4) Guidance and support challenges and needs.

- Create clear guidelines for online implementation and participation
- Identify challenges and needs through open and active engagement with staff
- Plan for individuality and reflexivity
- Educate students on the different modes of offering and the potential of online participation and engagement.

These recommendations will serve as guidelines for developing a blended learning strategy in the Faculty of Arts and Design at the Tshwane University of Technology.

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Attachments

Appendix 1. Information leaflet and consent form



Faculty of Arts and Design

INFORMATION LEAFLET AND INFORMED CONSENT

PROJECT TITLE: Developing guidelines for a post-COVID-19 blended learning strategy at a university of technology

Primary investigator: Dr Laetitia Orlandi, DMUS (Performance)
Department of Performing Arts
Faculty of Arts and Design
Tshwane University of Technology, Pretoria

Dear Faculty of Arts and Design academic staff member,

You are invited to participate in a research study that forms part of my studies towards a Master's in Education Management Programme for TUT Directors and Supervisors 2 with the Haaga-Helia University of Applied Sciences, Finland.

The purpose of this information leaflet is to provide you with relevant information about the research project to enable you to take an informed decision about your participation. You should only agree to participate if you are satisfied with the specifics as outlined in this information leaflet.

1.1 Purpose of the study

The objective of the proposed investigation is to determine what benefits and challenges lecturers experienced during the COVID-19-enforced digitalisation of education and their views on the continued use of blended learning in a post-COVID-19 future. The purpose of identifying benefits and challenges, both personal and technological, is to contribute to the understanding of the current level of success in the digital advancement of education

within the Faculty of Arts and Design at TUT. Furthermore, through exploring lecturers' views on the continued use of online and blended learning and teaching strategies, the study aims to provide guidelines for actionable steps that will contribute to the fulfilment of the institution's strategic goal of being a digitally-advanced tertiary institution in a post-COVID-19 future.

1.2 Data collection

Data collection will take place through an anonymous online survey questionnaire. The survey questionnaire will be compiled using a Google form and distributed to academic staff members via suitable online platforms. Participation will be voluntary and anonymous, and no personal data of participants will be recorded or stored in any form. The survey questions will be structured around the research questions, exploring lecturers' views on the benefits and challenges of the digitalisation of education during the COVID-19 pandemic and a continued blended learning approach in a post-COVID-19 future.

1.3 Time commitment

Academic staff can complete the anonymous online survey questionnaire in a place and time convenient to them. The completion of the questionnaire should take between 20 and 40 minutes, depending on the extent of the individual participant's responses.

1.4 Potential and/or foreseeable risks

Participation in this study and completion of the anonymous online survey questionnaire poses no potential emotional and/or personal risk or discomfort to you or your family. Because the online survey questionnaire is voluntary and anonymous, it does not include any identifiable personal qualifiers and therefore holds no direct risk of any negative consequences to you. The data collection is primarily focused on your personal experiences and views of learning and teaching practices regarding the digitalisation of education during the COVID-19 pandemic and beyond. The Google surveys will be stored electronically with password encryption for a period of three to five years.

1.5 Potential benefits of participating in the study

Please note that you will not receive any financial or other compensation or incentive to participate in this study.

Benefits of participating in this study will include:

- Providing valuable insights on your experiences and views as an academic staff member involved in the digitalisation of education during the COVID-19 pandemic;
- Providing valuable suggestions towards developing guidelines for the continuation of the digitalisation of education in a post-COVID-19 future within the faculty and institution.

1.6 Your rights as a participant

Your participation is completely voluntary, and you are free to withdraw from the study at any stage without any consequence or penalty. You are under no obligation to provide any reasons for withdrawing and your decision to either participate, not participate, or withdraw from the study will in no way impact your position as an academic staff member and/or your relationship with the Faculty of Arts and Design and/or the Tshwane University of Technology. Please note that through your decision to participate in this study you do not waive any of your legal rights and claims.

1.7 How will your confidentiality and anonymity be ensured in the study?

For this study, only the researcher and the supervisor will have access to the online survey questionnaires. Your participation and answers are anonymous and therefore, your identity will not be revealed in any way. No person outside the study panel or the TUT research ethics committee will be able to connect any answer to you in a recognizable way. The results of the study will be published by Haaga-Helia, but again without revealing the identity of the participants. Soft copies of the questionnaires will be stored in a password-protected folder for a minimum of three years.

1.7 Is the researcher qualified to conduct the research?

The researcher is adequately trained and appropriately qualified to conduct the study in the specific research field as institutionally approved and outlined in this information leaflet.

1.8 Ethical clearance

The Haaga-Helia University of Applied Sciences (Finland) has approved the project plan and proposal for the study and does not require ethical clearance through their institutional structures.

Because the study is being conducted with academic staff members within the Tshwane University of Technology, the proposal was approved, and ethical clearance was received from HEDS (Highers Education Development and Support) and SCRE (Senate

Committee for Research Ethics). All parts of this study will be conducted according to institutionally and internationally accepted ethical principles.

Ethics clearance number: Reference number [TUTRef#2023=02=010=OrlandiL]

1.9 Contact information

For more information regarding this study, you are welcome to contact the researcher and/or supervisor.

Researcher: Dr Laetitia Orlandi (Tshwane University of Technology) – orlandila@tut.ac.za

Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the TUT Research Ethics Committee, Prof TS Ramukumba, during office hours at Tel (012) 382-2641, E-mail RamukumbaTS@tut.ac.za

Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 21 23 41.

1.10 Declaration: Conflict of interest

Although the current study is funded by the Tshwane University of Technology, no prohibitions, conditions, or limitations are placed on either the researcher or the study procedures or outcomes.

1.11 Consent and final word

Due to the survey questionnaire being conducted online, your completion of the survey will serve as an indication of consent. By completing the anonymous online survey questionnaire, you acknowledge you have read and understood the description of the study, and that you agree to the terms as described and your contributions to be included in the published results of this study.

Your participation in this study will be greatly appreciated.

Laetitia Orlandi

INFORMATION LEAFLET AND INFORMED CONSENT

CONSENT

I hereby confirm that I have been adequately informed about the nature, conduct, benefits, and risks of the study. I have received, read, and understood the above-written information. I am aware that the results of the survey will be anonymously processed into a research report. I know that my participation is voluntary and that I may, at any stage, without prejudice, withdraw my consent and participation in the study. I declare myself prepared to participate in the study of my own free will.

ONLINE CONSENT

1. I agree to participate in the research study. I understand the purpose and nature of this study, and I am participating voluntarily. I know that I can withdraw from the study at any time, without any penalty or consequences.

Yes

No

2. I grant permission for the data generated from this questionnaire to be used in the researcher's publications on this topic.

Yes

No

I grant permission under the following conditions:

3. Choose one of the following options:

I grant permission for the researcher to use direct, attributed quotations from my questionnaire.

I grant permission for the researcher to use my responses in aggregate or anonymous statements.

Date:

Researcher's name:

Date:

Appendix 2. Survey questionnaire

Online survey questionnaire

Section A: Background information

1. Do you have a formal qualification in education?

- a) Yes
- b) No

If yes, please specify the name of the qualification.

2. How would you rate your digital competency pre-COVID-19?

- a) Excellent
- b) Very good
- c) Good
- d) Average
- e) Below average
- f) Poor

3. How would you rate your digital competency at the time of completing this questionnaire?

- a) Excellent
- b) Very good
- c) Good
- d) Average
- e) Below average
- f) Poor

Section B: Digitalisation of Education

1. Benefits of digitalisation of education during COVID-19

1.1 From your personal experience, what were the benefits of the digitalisation of education during the COVID-19 pandemic?

1.2 Would you say that you learned new teaching and learning strategies and skills as a result of the digitalisation of education during the COVID-10 pandemic? Please elaborate.

1.3 Would you say that you learned new technology skills as a result of the digitalisation of education during the COVID-10 pandemic? Please elaborate.

2. Challenges of digitalisation of education during COVID-19

2.1 From your personal experience, what were the challenges of the digitalisation of education during the COVID-19 pandemic?

2.2 Do you think TUT provided you with the necessary training and support to offer online/blended learning during the COVID-19 pandemic? Please elaborate.

2.3 Considering your answers to the previous questions, how have your experiences during the COVID-19 pandemic informed your current views on the digitalisation of education in higher education?

3. Recommendations for guidelines for a post-COVID-19 blended learning strategy

3.1 In your personal view, what are the potential benefits of a continued blended learning and teaching approach in a post-COVID-19 future?

3.2 In your personal view, what are the potential challenges of a continued blended learning approach in a post-COVID-19 future?

3.3 What are your recommendations for a post-COVID-19 blended learning and teaching strategy within your department/faculty/institution?

3.4 What are your recommendations for actionable steps towards a post-COVID-19 blended learning and teaching strategy within your department/faculty/institution?

3.5 What kind of training and support do you need to continue to use blended learning and teaching within the department/faculty/institution?

4. Do you have any other remarks or comments on the topic?

Appendix 3. Permission letter from Executive Dean



Tshwane University
of Technology

Faculty of Arts and Design

To: Prof N Moodley-Diar
From: Dr L Orlandi
Date: 14 November 2022
Re: **PERMISSION TO CONDUCT MASTER'S STUDY**

DETAILS OF PROJECT

Title: Developing guidelines for a post-COVID-19 blended learning strategy at the Tshwane University of Technology, Faculty of Arts and Design.

Research team:

Researcher: Dr L Orlandi (TUT); email: orlandila@tut.ac.za

Qualification:

Master's degree in Education Management: Programme for TUT Directors and Supervisors 2, Haaga-Helia University of Applied Sciences, Finland.

Data required:

Anonymous online survey questionnaire completed by lecturers within the Faculty of Arts and Design at the Tshwane University of Technology

PERMISSION

Permission is hereby granted to conduct the study and use the requested data for the research project mentioned above, subject to the following conditions:

- The TUT Research Ethics Committee must provide ethical clearance for the research project to continue.
- The data may only be used for this project. A new application for permission is required to use the data sets for any subsequent project.

Signed:

A handwritten signature in black ink, appearing to read 'N Moodley-Diar', written over a horizontal line.

Prof Nalini Moodley-Diar
Executive Dean: Faculty of Arts and Design

Faculty of Arts & Design



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