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Reimagining design education for a new generation of designers

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Abstract

It is inevitable that with the rapid advancement of digital technologies, design education is being influenced greatly, particularly through the expansion of online learning and the integration of artificial intelligence (AI). Within a relatively short timeframe (which included the COVID-19 pandemic) there has been an accelerated transition to digital learning environments, exposing both opportunities and challenges in online graphic design education. While we are constantly shown that online tools offer potential for enhancing collaboration, participation, and feedback, it is important to remember that their effectiveness is dependent on accessibility, digital literacy, and educator preparedness. This research, grounded in qualitative narrative inquiry, investigates graphic design students' experiences with online learning tools during emergency remote teaching (ERT). It examines key factors that influenced student success, including the pedagogical affordances of technology, psychosocial challenges, communication barriers, and disparities in digital access. While existing literature often highlights the potential benefits of technology in design education, the findings from this study emphasise that student experiences are deeply shaped by context – especially in regions facing economic and infrastructural limitations. This research contributes to the discourse on digital disruptions in design education by examining how online learning tools influence contemporary pedagogy. It highlights the need for intentional, context-sensitive integration of digital technologies. Furthermore, it is imperative that while we explore strategies to effectively integrate these technologies, we should strive to preserve core design principles. A key question being, *"How can educational institutions reimagine design education to balance technological advancements with foundational design education?"* Initial findings provide insights into the evolving relationship between digital learning tools and design education, as we emphasise the need for strategic implementation that will enhance learning without diminishing the essential human elements of creativity. By addressing some of these challenges, this study aims to inform future curriculum development and instructional design that align with industry advancements while nurturing creativity and critical thinking in the next generation of designers.

Keywords: Design process, graphic design education, technology integration, technological affordance, creative education, digital pedagogy

Introduction

The global COVID-19 pandemic (2020–2022) set the stage for what would be considered a major shift in higher education, forcing academic institutions to adopt emergency remote teaching (ERT) with

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little time for pedagogical redesign. While many fields of learning were thrown off course, graphic design education was one of the most affected due to it being traditionally grounded in studio-based learning, requiring opportunities for face-to-face collaboration, and iterative critique. While educational technologies provided opportunities for continuity, they also exposed deep challenges related to student engagement, technological access, and the quality of the learning experience.

This paper emerges from research conducted in the aftermath of the pandemic, which investigates the lived experiences of graphic design students navigating online learning (Le Cornu 2023). The aim of this research is to examine how online tools were perceived and used for feedback, collaboration, and participation; three imperative constituents of creative education. Using qualitative narrative inquiry, this study highlights how technological affordances intersect with psychosocial and infrastructural realities, particularly within the South African context.

As institutions continue to reimagine education in a post-pandemic world, there is an urgent need to rethink how technology is integrated into online learning, never mind the role it plays within design pedagogy. We cannot think of e-learning as a temporary substitute for in-person learning, but as a thoughtful, sustainable and 'real' place where learning happens effectively, and this is particularly important when looking at Non-representational theory (Thrift 2008) which states that *"the kind of graphic designer an individual student becomes is not just the consequence of the teachers, ideas and the tools he or she learns to manipulate; it is also an effect of inhabiting a particular world"* (Nottingham 2017, p. 47).

This paper contributes to the ongoing discourse on design and digital disruption by exploring how online tools both support and constrain the development of design education in relation to creative thinking and collaboration (Li *et al.* 2025). It also raises critical questions about what it means to preserve core design values in a digitally mediated environment, and how we might develop learning experiences that are accessible, immersive, equitable, and most importantly, human centred.

Background and literature

Traditional graphic design education

While graphic design education is fairly new, it is historically grounded in face-to-face, studio-based learning, where the master-apprentice model developed within a guild (Souleles 2013). This mentorship model placed emphasis on hands-on experience and immersive learning through communities of practice. While design education and its humble beginnings can be traced back to medieval guilds, it was formalised further through institutions like Yale in the 1950s (Kelly 2001). Graphic design was now seen as an official profession, and aspects such as collaborative learning, feedback, and the use of 'crit' were embedded in these formal settings, showing how successful the guild-based mentor-mentee relationship was in developing creatives.

As noted by Crowther (2013) and Owen and Smith (2019), this model remained largely unchanged for decades, highlighting its effectiveness (but also its vulnerability when disrupted by ERT). Furthermore, Souleles (2013) highlights that despite the evolution of design tools, the educational approach lagged, especially in adapting to digital pedagogy.

Graphic design education in a South African context

South Africa's design education shares many similarities with global pedagogies but must contend with unique socio-economic disparities as well as infrastructural limitations. While formal design

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qualifications are relatively new compared to fields such as law or medicine, recent decades have seen a rapid growth in programme offerings across public and private institutions (New Perspective Design 2022).

However, it should be noted that historically, formal degrees and post-graduate pursuits have been grounded in face-to-face teaching settings, whereas short-learning courses could be offered through distance opportunities (New Perspective Design 2022).

Impact of COVID-19 on design learning environments

The COVID-19 pandemic set the stage for a difficult move online, exposing the limitations of traditional pedagogies and revealing deep inequalities in digital access. Globally, educators were faced with unfamiliar platforms and limited preparation time. US designer and educator, Davis (2020) described this shift as a forced disruption, noting the inadequacy of temporary solutions to meet the needs of creative disciplines (Davis 2020).

In South Africa, DEFSA 2021 conference papers written by Meyers (2021) and Nana and Roos (2021) highlighted the severe challenges facing design students, with a specific focus on the lack of access to devices, high data costs, and unreliable connectivity. Studio-based learning, reliant on practical engagement and peer critique, was particularly impacted. Without an end in sight, many institutions attempted to mitigate these issues through curriculum restructuring and asynchronous delivery, but issues of equity and skill development persisted. Additionally, psychosocial aspects and living conditions further compromised online learning experiences (Motala & Menon 2020).

In retrospect, Stadio's Christina Elgie (2021) argues that design education must not only recover from this disruption but be reimagined, starting with digital pedagogy and educator readiness, with a clear goal of inclusive access at the centre of future strategies (Elgie 2021).

Online learning models and pedagogical shifts

In order to reimagine design education, we need to understand the spaces for development.

Online learning encompasses multiple spaces such as synchronous, asynchronous, blended, and hybrid. Each of these modalities comes with their distinct pedagogical implications. While synchronous learning mirrors the concept of live classroom experiences, it is highly dependent on stable connectivity which can be affected by data constraints and load-shedding (Kosie 2022) as well as engagement of the learners and educators within that online space, at that given time. Asynchronous learning offers flexibility but may lack immediacy and social presence, where blended and hybrid models aim to combine the best of both, with blended learning standardising dual modes (Edwards 2016) and hybrid learning allowing for more equal participation and equity (Pritchard 2024).

While these concepts are indicative of the modes of learning, there are pedagogical approaches that can enhance these modes. Fleischmann (2020) found that a flipped-classroom approach within a design studio enhanced learner autonomy and maintained creative output. However, the success of these models hinges on deliberate planning, as accentuated by Jones (2020). If Emergency Remote Teaching (ERT) taught us anything, it was that this type of learning was reinforcing passive consumption rather than fostering critical design thinking which is imperative as part of the design thinking process in creative education.

As a way to alleviate this type of passive learning, Self-regulated learning (SRL), as discussed by Nicol and Milligan (2006), can be utilised effectively. Thoughtfully developing learning opportunities within a blended environment using SRL becomes vital in online environments where feedback loops are

slower, and peer interaction reduced. SRL empowers students to monitor their progress and engage meaningfully with feedback, particularly when supported by responsive e-tools and reflective practices (Nicol & Milligan 2006).

Technological affordances in design education

As mentioned previously, professional and thoughtful implementation of e-tools can be beneficial due to the implied benefits that technology provides users within a given context. This is known as a technological affordance. Crosby *et al.* (2019) propose three layers of affordance, namely: functional, perceptual, and adaptive. Design students must master these to engage creatively and critically with digital tools (Crosby *et al.* 2019). It is interesting to note that while many design students are proficient in specific software such as Adobe Creative Suite, they often lack the deeper perceptual awareness needed to make strategic tool choices outside of the 'known' design offerings – many of which were hard to acquire during ERT.

As could be expected, the rapid shift to online learning during COVID-19 magnified gaps in digital literacy, and South African students, in particular, faced challenges in acquiring the hardware and software necessary for high-level design work.

That being said, it would be short-sighted to not realise the new possibilities for collaboration, feedback, and participation that technology offers if implemented equitably and strategically.

Design pedagogy: Feedback, collaboration, and participation

Design education thrives on dynamic interaction. Feedback, provided orally, and/or written is instrumental in helping to develop designers through informal and formal crit sessions. During these opportunities, peer-based feedback is also central in developing reflective practitioners. While some studies such as the one by McCormack and Taylor **(**2005), suggest oral feedback (such as those provided in voice notes) offers an improved feedback experience due to the intimate nature of the mode, other researchers (Joshi *et al.* 2021) argue that written feedback provides clarity and minimises ambiguity. While both provide relevant reasons, it is imperative to note that immediacy and contextual sensitivity are key.

While feedback allows for personal development within group settings, these same opportunities can allow for the development of collaboration. Collaboration, as highlighted by Ojo & Ntshoe (2017), is not just a skill but a mindset, and an important one at that – being highlighted as a 21st century skill (OECD 2019). Not only are students able to tackle complex design problems together, but they are also able to prepare for real-world interdisciplinary practice (Ojo & Ntshoe 2017). Sadly, during the pandemic, many students became "solo designers", losing vital opportunities for shared critique and peer learning.

Additionally, participation and engagement were similarly disrupted. As Schritter (2022) notes, active participation fosters critical thinking and innovation but requires interpersonal trust and open communication. These were aspects strained by online platforms – not only in design education but having a direct impact on the development of skills within design academia.

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Methodology

Approach

This study adopted an inductive qualitative approach within a constructivist-interpretivist paradigm. It sought to understand how graphic design students in South Africa experienced online learning during the first two years of the COVID-19 pandemic, with particular focus on the use of digital tools for feedback, participation, and collaboration. In line with constructive-interpretivist practices, the research prioritised individual and contextual realities, or as Cohen and Manion (2006) state, *"the subjective world of human experience"*. It is important to note that knowledge is socially constructed and shaped by experience. No prior theory was imposed; instead, patterns and themes were drawn directly from participants' narratives (Cohen & Manion 2006).

Data collection

The narrative inquiry methodology was used to capture participants' lived experiences. Data were collected through two semi-structured focus groups and three one-on-one interviews. This allowed for in-depth discussions of students' challenges and perceptions. Participants were purposively selected from public and private higher education institutions to ensure diverse representation in terms of age, gender, background, qualification level, and learning context. In total, six students participated in focus groups, and three in one-on-one interviews conducted as part of a formal master's mini dissertation. Tables 1 and 2 provide an overview of participant demographics:

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Table 1: Details of the respondents in the semi-structured focus groups (Le Cornu 2023)

Pseudonym	Age Range	Year(s) of Study During Covid	Public/ Private institute	Highest Quali-fication	Gender	Nationality
Respondent 1	22-25	2020 – first year 2021 – second year 2022 – third year	Private	Highschool	Female	Swazi
Respondent 2	18-21	2020 – first year 2021 – second year 2022 – third year	Private	Highschool	Female	Zimbabwean
Respondent 3	18-21	2020 – second year 2021 – third year	Private	BA Degree	Female	South African
Respondent 4	22-25	2020 – second year 2021 – second and third year 2022 – third year	Private	Highschool	Female	South African
Respondent 5	30-34	2021 and 2022 – online honours course	Public and Private	BA degree currently studying towards his BA honours	Male	Zimbabwean now living and working in South Africa
Respondent 6	22-25	2020 – second year 2021 – third year	Private	BA Degree	Male	Zimbabwean now living and working in South Africa

Table 2: Details of the respondents in the semi-structured interviews (Le Cornu 2023)

Pseudonym	Age Range	Year(s) of Study During Covid	Public/ Private institute	Highest Quali-fication	Gender	Nationality
Respondent 7	26-30	2019 and 2020 – honours	Public	BA Honours	Male	Zimbabwean
Respondent 8	26-30	2020 – third year 2021 and 2022 – online honours course	Private	BA degree currently studying towards his BA honours	Male	South African
Respondent 9	35+	2020 and 2021 - Honours	Public	BA Honours	Female	South African

Recruitment was facilitated via social media and academic networking channels. Interviews and focus groups were conducted via Microsoft Teams, recorded with consent, and transcribed for analysis.

Analysis

Data were analysed using Braun and Clarke's (2016) thematic analysis method, supported by Atlas.ti. This method is iterative and requires you to work through the following processes: familiarisation of data, initial coding, theme development, evaluation, and a final synthesis. This inductive approach allowed recurring patterns to emerge naturally, aligning with the study's focus on individual student voice and contextual interpretation. Themes were mapped directly to the core areas of graphic design education as highlighted previously, namely: feedback, collaboration, and participation – particularly as they were experienced within the digital learning space.

Findings

Overview

Having walked through the background and methodology, this section explores how graphic design students in a South African higher education context experienced online learning during the COVID-19 pandemic. The research focused specifically on their perceptions of feedback, collaboration, and participation, as well as the tools and technologies used to support these processes. Through narrative inquiry and thematic analysis, six overarching categories emerged: Graphic Design Pedagogy, Affordances of Technology, Psychosocial Issues, Support, Communication, and Equality in Educational Opportunity as can be noted in Figure 1.

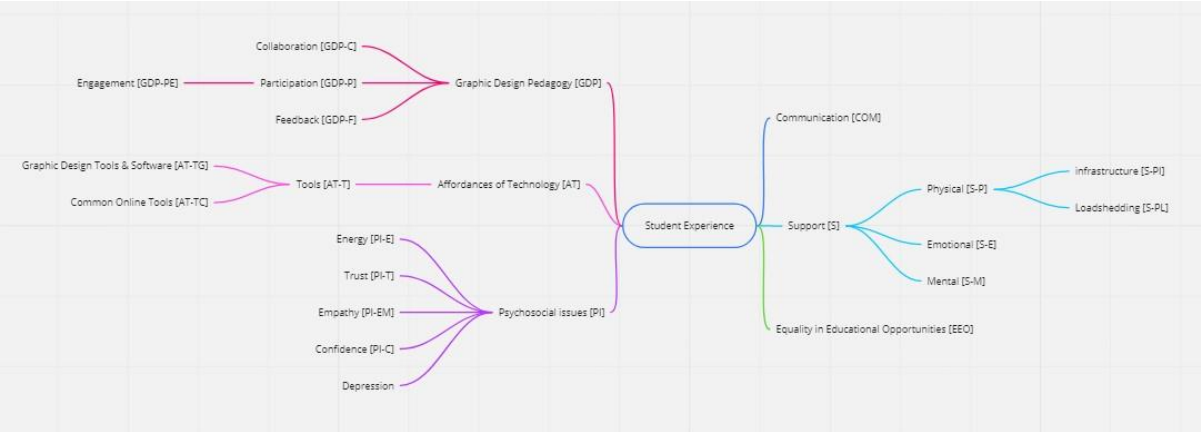

Figure 1: Categories broken down via data analysis (Le Cornu 2023)

These are unpacked below with direct insights from participant narratives, thematic mind maps, and qualitative coding outputs**.**

Graphic design pedagogy in online spaces

- Students reported that the collaborative and iterative nature of design education was severely disrupted online.
- Collaboration became a thing of the past. One student reflected, *"When you're isolated, you're literally in your own headspace. The only option you might have is to go online to look at the online mood boards or things like that, but then that's a different experience altogether. You're in your own head",* illustrating the loss of peer-based energy and critique loops.
- Participation was inconsistent, particularly in camera-off classes. Some comments showed a sense of disengagement in this new fully online environment, *"I was taking advantage of the sense that lecturers can't see me online […] but then it would hold me back when I need to understand […] I had to make a plan and just do whatever I think is making sense, hence my grades were not so good, I wasn't a bad student, but it was just because of that [no longer participating in a synchronous manner]",* and, *"the way I was assimilating the learning was I was not really practicing, I was just watching what the lecturer was doing".* One comment in particular summarised this perfectly, *"There's a distinct difference between being present and being present. It's the nuance in that word".*
- Feedback suffered both in timing and quality. One respondent shared, *"before you were getting feedback almost on a continuous basis because you were all in the same space and you were learning from each other",* and expanded, *"I'd get my feedback on my LMS and it will be in written form, and when I read it, sometimes I wouldn't comprehend it the way I was supposed to, and at the end of the day, my designs or my work is still not good".* Many of the students lamented on missing the immediate and visual feedback which they felt were integral to studio practice.
- Engagement declined without physical classroom structures. The loss of social presence impacted focus and output across multiple respondents, with one stating, "*it's a bit difficult because we as graphic designers are visual people, we learn by engaging with things, we learn by touching, we learn by making, destroying, we learn with experimentation, and that's very difficult if you are working on a screen or if you're getting all your information on the screen, rather than you being physically in a place and having to walk, having to mix, having to work with vector objects"***.**

Affordances and limitations of online tools

- Students' experience with technology varied significantly, influenced by access, familiarity, and task complexity.

- Graphic design tools were critical yet demanding. One respondent noted, "*when you're at a level where you don't know how to use Illustrator, Photoshop, all these programs online become very, very challenging".*
- Platforms like Microsoft Teams, Google Docs, Milanote and LMSs were used extensively during this time period and students found more positive connections to these tools than those used specifically by designers "*Those kinds of tools [I think] would allow for online to be a bit more participatory and encourage more people to participate in the online space".*

Furthermore, a word cloud (Figure 2) analysis from Atlas.ti revealed the words "face", "online", and "feedback" among others as dominant terms, reinforcing the tension between digital interaction and the embodied nature of design learning.

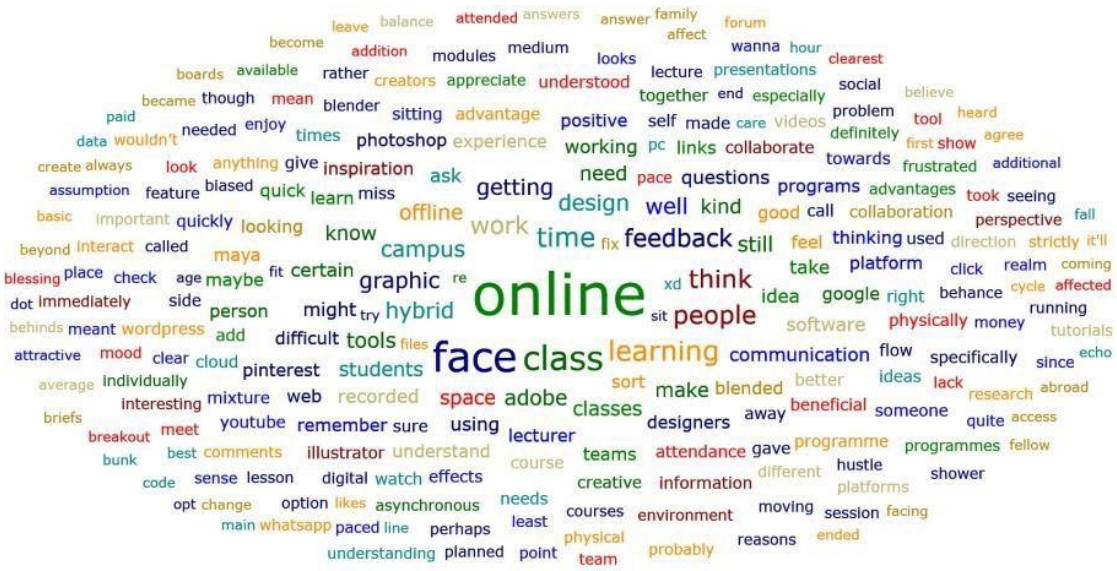

Figure 2: Word cloud based on the information captured under affordances of technology analysis (Le Cornu 2023)

Psychosocial challenges

- The emotional toll of isolation and prolonged screen time was one of the strongest findings with many students referring to the concept of 'energy' as a way to describe this: *"you don't understand each other, when the energy is not the same".* Furthermore, it was also noted that *"having somebody who's there, who has the energy to push you, does help to motivate you"* and that this *"type of exchange of energy and positivity within a group [happens] when you are working face to face"***.**
- Lack of confidence was at an all-time high, especially when students felt academically unprepared or unsupported. One student noted fear that they were *"afraid to say the wrong thing or to give the wrong answer",* while another stated, *"Sometimes I get socially anxious, on an online platform […] I was afraid of asking questions".*
- Empathy and trust declined between students and lecturers. Delayed or unclear communication from lecturers created doubt with one student saying, **"***it was very important, and you had to trust that feedback would come by when they said it would come" and another noting, "what happens when you have load-shedding, or you don't have network during those times and then your lecturers just don't want to speak to you again. They don't trust you to start another meeting with you again".*

In addition, the word cloud for this data (Figure 3) captured words such as “confidence”, “trust”, “energy”, and “people” showing that they are relevant themes to the design student.

Figure 3: Word cloud based on the psychosocial factors (Le Cornu 2023)

Communication and support

- Communication was disrupted by the shift to asynchronous tools, lagging feedback loops, and platform limitations with one respondent talking on behalf of a friend, *“one of the things that actually played a role in one of the students dropping out was because of the miscommunication between her and the lecturer. She would send emails and then not get any feedback and then the lecturers would actually send emails as well and not get any feedback […] they would say that she's not communicating and when I talk to her, she'll also say that they are not communicating”.* Students, using similar scenarios, described a breakdown in immediacy and transparency, noting that this would never have happened in face-to-face settings.
- Support structures varied widely depending on institutional capacity, home environment, and personal resilience, with one student noting that it felt as if *“there were days where it kind of felt like the tutorials were teaching us more than our lecturers because everything was just referring to references online”.*
- Infrastructure support challenges were also common with one student explaining the issue with South African realities, “*You have to rely on whatever mode of communication that's coming in. Communication signal losses, because with load shedding, you can't use or charge your computer or your phone”.*
- Emotional support was hard to access with some students focusing on a need for *“a mental health professional to speak to whenever they need to”* as well as *“a resource that anyone can access at any time or when they need to, to help them with coping with how to deal with the stressful situation that you can't control how to deal with”.*

Moreover, the word cloud for this data (Figure 4) showcases the significance of words like, “students”, “people”, “feedback”, “campus”, and “time”. These words are indicative that human and physical presence remained central to the learning experience – sadly, the data showed that much of this was missing or lacked effective planning to engage with students effectively/ timeously.

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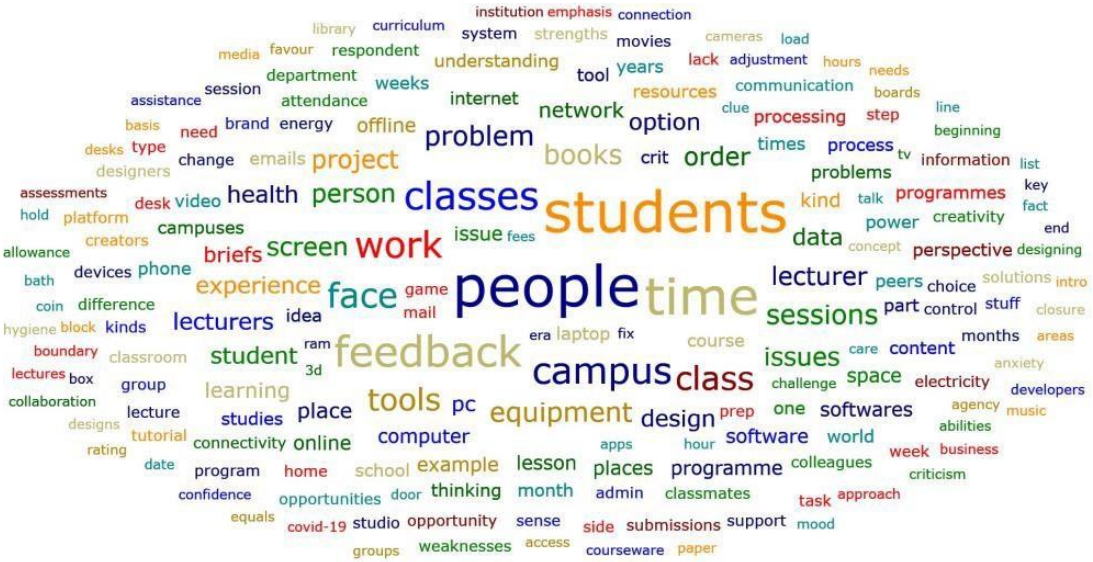

Figure 4: Word cloud of words associated with the support and communication analysis (Le Cornu 2023)

Inequality in access

Existing inequalities, including living conditions and home environments, were amplified by the rapid shift to online learning.

Device and data access varied dramatically. Some respondents relied on smartphones for design classes, which compromised participation and feedback. One student stated that lecturers would *also "take for granted the physical tools that you have access to as a student in a university setting. So not everyone at home has a printer, for instance, but there's a printer at campus, light boxes, and things like that",* while another amplified, "*not everybody is able to buy an iCore seven with a 16 gigabyte RAM, processing power".*

Implications and recommendations

Implications

This study highlights the complexities of teaching and learning graphic design in an online context, especially within a developing country like South Africa. The findings reveal that while digital tools offer impressive opportunities, the emergency implementation of technology during the COVID-19 pandemic often resulted in fragmented learning experiences. Feedback, collaboration, and participation, were significantly disrupted, leading to a loss of studio culture and a diminished sense of community among students.

Importantly, the research also brought to light, deeper psychosocial effects. Students experienced reduced confidence and a lack of emotional connection. This was problematic as all of these aspects are crucial to effective creative development. Without human presence and the dynamic energy of a studio environment, many struggled to stay motivated or inspired. This points to the urgent need for more human-centred, empathetic design strategies when integrating technology in the design education space.

Furthermore, South African students faced heightened challenges due to inequality, with stark differences in access to devices, electricity, quiet workspaces, and data. While curriculum changes and

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pedagogical development will not directly tackle this, these structural barriers must be addressed if digital transformation is to be fully inclusive and equitable.

Recommendations

Drawing from these findings, several recommendations emerge for institutions and curriculum developers working within creative fields:

While ERT did not give us the greatest foundation for implementation, we should strive to plan for intentional digital integration, not emergency adaptation. Design education requires a tailored approach to online learning with an understanding that generic LMS platforms and communication tools fall short of the experiential needs of design students.

Time is more important than most other commodities and, in this instance, we need to invest in upskilling educators in both pedagogy and technology. Lecturer uncertainty and lack of digital fluency negatively impacted student trust and engagement during ERT. Even now, five years from the start of the pandemic, there is still a need for training that should include strategies for online feedback, studio simulation, and digital mentoring.

Psychosocial support should be actively embedded into online curricula. Emotional energy, trust, and belonging are not “extras” and should be accepted as essential to creative learning.

Despite there being a legitimate space for fully online learning in creative education, adopting flexible, hybrid learning models are key. This prioritises the value of physical studio interaction while leveraging the benefits of digital tools as students appreciated asynchronous access and autonomy, but not at the expense of real-time critique or collaboration.

Future multi-institutional *local* studies could help document challenges and innovations more comprehensively, ensuring culturally relevant solutions.

Wicked problems exist, and we will have to find ways to address digital inequality structurally. Equitable access to tools, platforms, and reliable internet should be a prerequisite for any digital transformation strategy. Institutions can consider support mechanisms such as device loans and alternate content for differing contexts.

Conclusion

While this research amplifies the voices of South African graphic design students navigating an unexpected shift into online learning, it showcases the importance of continuing the development of digital offerings within a structured, nuanced environment. In the world of design, such an environment is one that balances creative freedom with intentional scaffolding; where learning spaces are designed to support iterative experimentation, critical reflection, and collaboration within clearly-defined frameworks. It involves providing stability through well-curated digital infrastructures, mentorship channels, and feedback loops, while still allowing for the organic and exploratory nature of creative practice to unfold. A structured, nuanced design learning environment, therefore, does not constrain creativity but gives it a supportive architecture within which it can fully develop.

Furthermore, it reinforces that while technology is a powerful enabler, it cannot substitute for connection, community, and human interaction, especially in a field as socially embedded and engaging as design.

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The challenge is not whether to use digital tools, but how to use them with consideration. Future-facing design education must balance innovation with empathy, infrastructure with imagination, and take a step back to apply contextual relevance within the design phase. With thoughtful integration and a commitment to inclusion, South African design education can emerge from this disruption not only more resilient, but more relevant to the complex needs of a new generation of designers.

Building on this foundation, the next phase of this research will take the form of a longitudinal study following these former students into their professional lives. This continuation will explore how their online learning experiences have shaped their creative identities, professional practices, and adaptability as emerging designers and creative workers within South Africa's evolving design landscape.

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