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The lessons learnt from emergency remote teaching to strengthen a pre-service teacher education course on lesson design

Dean van der Merwe
University of Johannesburg, South Africa, deanvdm@uj.ac.za

Rene Levigne-Lang
University of Johannesburg, South Africa, rlevigne-lang@stpeters.co.za

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Abstract

This paper reports on the lessons learnt from the COVID-19-induced emergency remote (online) teaching and learning of a one-year teacher education course. The final-year course, within a four-year Bachelor of Education programme, aimed at developing pre-service teachers' knowledge of the nature and process of learning and how to guide and support learning in diverse school contexts. The course was planned before the COVID-19 pandemic, and teaching and learning would have taken place on campus, with limited online activities. The ensuing lockdown in South Africa resulted in university teaching and learning moving abruptly online. We investigated lessons learnt from the transition to emergency remote (online) teaching. Data were generated by conducting semi-structured interviews with 20 student teachers about their experiences of the course. The data were analysed using the constant comparative method. Analysing the data highlighted the benefits of remote (online) teaching that should be considered when using a blended approach to harness online teaching affordances. As we advance, we will implement a fully blended approach, harnessing the affordances of both online and contact-based teaching and learning.

Practitioner Notes

1. Students in higher education benefit from explicit communication and continuous support from lecturers.
2. Small-group practice and reflection sessions are beneficial to students' learning (online or during contact sessions).
3. Students in higher education benefit when course content is structured in a consistent, routinized and accessible way.
4. Teacher education students should be prepared to adapt to teaching in different contexts (contact, blended or remote).
5. Higher education courses should combine the best affordance of online and contact teaching.

Keywords

Emergency remote teaching; pre-service teacher education; COVID-19; semi-structured interviews; constant comparative method of data analysis

Introduction

This paper reports on research conducted as part of a more extensive study that explored the pilot implementation of a one-year course for final-year students within a four-year Bachelor of Education programme at a South African university.

In South Africa, school circumstances vary, and the South African schooling system can be described as "two-tier[ed]" (De Kadt et al., 2014, p. 171). The first tier comprises a few high-performing and well-resourced schools, which generally charge high attendance fees. The second tier, which is made up of 75% of the schools in South Africa, consists of low-performing, poorly resourced schools that charge much lower (if any) fees. These so-called 'no-fees' schools can be characterised by continuous underperformance and "children with extremely low skills levels" (De Kadt et al., 2014, p. 172). Most children in South Africa attend no-fee schools, dramatically affecting their life chances. Spaull (2019, p. 1) argued that more than two decades after apartheid was abolished, the average South African child's life chances are still determined by "the colour of their skin, the province of their birth, and the wealth of their parents". Taylor (2019, p. 274) argued that one way of raising the quality of education could be by ensuring that newly qualified teachers are "sufficiently knowledgeable, skilled and prepared to face the realities of working in South African schools".

We, therefore, wanted to teach pre-service teachers a lesson design approach that would enable them to design and teach powerful and purposeful lessons no matter what type of school context they end up working in. In the course we piloted, we taught pre-service teachers a new lesson design approach (different to the one used in students' previous years of study) that foregrounded principles derived from the science of learning literature and competencies for a fast-changing world. The course aimed at developing pre-service teachers' knowledge of the nature and process of learning and how to guide and support learning in diverse school contexts by immersing them in the design of lessons (van der Merwe, 2022). A premise of the course was that preparing pre-service teachers to design lessons that place learning at the centre and that explicitly infuse the development of competencies for a fast-changing world would serve them (and their learners) well, no matter what type of school circumstances they work in.

The course was designed, and its implementation was planned before the COVID-19 pandemic. Contact teaching and pre-service teachers spending time at a school to enact learnings from the coursework were integral to the course design. When the COVID-19 lockdown occurred, all teaching and learning had to be moved abruptly online (emergency remote teaching), and pre-service teachers did not have access to schools for teaching practice. This situation prevailed for the entire year of implementing the course (excluding two months before the national lockdown). In light of this, the study sought to answer the question: What lessons can be learnt from the emergency

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remote teaching experience due to COVID-19 that can enrich the teaching of the course going forward?

The paper aims to explore the lessons learnt from the COVID-19-induced emergency remote teaching that can enrich the teaching of the course going forward. The next section briefly explores the literature on emergency remote teaching in higher education. This is followed by a description of the course on lesson design and the changes made due to emergency remote teaching. Next, the research methods used to generate (semi-structured interviews with 20 pre-service teachers) and analyse data (constant comparative method) in the study are discussed. Lastly, the findings are presented and discussed.

Literature

Emergency remote teaching in higher education

On March 11th, 2020, the World Health Organization declared the novel coronavirus outbreak (COVID-19) a global pandemic. Many countries responded by implementing lockdown measures as a way to curb the spread of the virus. This forced many universities to shift their teaching mode from face-to-face to entirely online (Adeboyin & Soykan, 2020; Ali, 2020; Meulenbroeks, 2020; Toquero, 2020; Mishra et al., 2020; Paudel, 2021).

Although the COVID-19 pandemic-induced emergency remote teaching resulted in many universities shifting their mode of instruction to online, many already had some form of an online component in their course offerings. According to Dalsgaard and Godsk (2007, p. 29), many universities want to offer "completely or partly web-based courses in order to facilitate easy and flexible learning and to increase teaching and learning efficiency". Similarly, Kenzig (2015, p. 625) explained that online education is growing dramatically, and many university courses are being adapted to the online environment because online learning opportunities, when "crafted effectively", have positive student outcomes. This was also the view of Ali (2020), who argued that universities worldwide are moving more and more toward online teaching and learning. While some universities have started offering online courses, many use a blended approach to teaching and learning. Meulenbroeks (2020, p. 1) defined blended learning as involving a "significant portion" of all interactions taking place online and incorporating "some form of offline interaction" in synchronous face-to-face or physical meetings. He argued that blended learning results in "significantly higher learning outcomes when compared to more traditional forms of classroom education".

Even if many university courses already have some form of online component, there is a difference between online or blended teaching and learning and emergency remote teaching (Abedoyin & Soykan, 2020; Safi et al., 2020; Jili et al., 2021). This difference is best described by Hodges et al. (2020):

> *In contrast to experiences that are planned from the beginning and designed to be online, emergency remote teaching (ERT) is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated* (Hodges et al., 2020).

Kenzig (2015) explained that adapting a face-to-face course to an online course takes time, and instructors would require training to ensure that the online offering is equally good quality. In a similar vein, Abedoyin and Soykan (2020) argued that for online teaching and learning to be effective, "instructors, organisations and institutions must have a comprehensive understanding of the benefits and limitations" (p. 1). Shin and Hickey (2020) explained that designing effective online teaching and learning experiences takes much time and depends on "instructor practice, instructor training and preparation to teach in an online environment" (p. 10). This differs from emergency remote teaching, which forced many university instructors to adapt their face-to-face courses to online courses, despite their "digital competence and prior knowledge about online learning" (Shin & Hickey, 2020, p. 10).

Many scholars saw the "abrupt and temporary shift to remote online learning" (Shin & Hickey, 2020, p. 1) as an opportunity to research what "went well and what did not go well" about "teaching normally face-to-face and hybrid courses fully online via remote teaching" (Hodges & Fowler, 2020, p. 121). For instance, Paudel (2021) investigated lecturers' and students' perceptions of online teaching and learning during the COVID-19 lockdown period and found that the participants valued accessing knowledge resources online easily. However, time-management skills and lack of stable internet connectivity hampered the students' learning experience. In a similar study, Angelova (2020) found that students valued being able to access online content at any time and that the online space enabled more accessible communication between the lecturer and students. Moorhouse (2020) reported on his experience adapting a face-to-face teacher education course to a fully online one. The course adaptation required adopting a combination of asynchronous and synchronous modes of instruction. The asynchronous online instruction entailed disseminating the learning content on the university's learning management system, including readings, PowerPoints with voiceovers, and so forth. The synchronous online teaching involved "one-hour long real-time live sessions delivered through video conferencing software". Moorhouse (2020) reported that the synchronous sessions were initially not well attended, and students did not participate in the discussions. Stewart (2021), who synthesised findings from 38 empirical studies set in higher education about emergency remote teaching, found that instructors and students had diverse experiences with emergency remote teaching, but for the most part, COVID-19 and emergency remote teaching "exacerbated existing socio-economic inequalities" and functioned as a "proverbial insult to injury in terms of the digital divide" (p. 89).

The present paper explores the lessons learnt from the emergency remote teaching experience due to COVID-19 that can enrich the teaching of a pre-service teacher education course on lesson design.

The course on lesson design

In 2020, we researched the design and implementation of a pilot course aimed at immersing pre-service teachers in designing lessons that foregrounded principles derived from the science of learning literature and competencies for a fast-changing world. A new lesson design approach (different from the one pre-service teachers used to plan lessons in their previous years of study) was piloted in the course. This approach required pre-service teachers to explicitly state which principles derived from literature on the science of learning and competencies for a fast-changing world have been invoked in their design of lessons (and how).

The final-year course forms part of a four-year university-accredited primary school teacher education qualification (BEd). Pre-service teachers who complete the undergraduate programme qualify for teaching positions in the foundation phase (FP - Grades R – 3) or intermediate phase (IP - Grades 4 – 7). In the first three years of both B.Ed. programmes, pre-service teachers are prepared for teaching by equipping them with subject content knowledge (in subject-specific Methodology courses) and pedagogical content knowledge (in generic Methodology courses and subject-specific Methodology courses). The programmes also strongly focus on child development and aim to develop pre-service teachers' understanding of children's physical, emotional, social and cognitive development. According to Gravett et al. (2019), the programmes were designed to give pre-service teachers the opportunity to "study the development of young children closely in order to develop a solid understanding of how children learn, change and develop over time" (p. 3). Other courses in the teacher preparation programme aim to develop pre-service teachers' understanding of education and the context of the teaching profession in South Africa. In addition, pre-service teachers have courses dedicated to developing skills in using ICT (Information and Communications Technology) for teaching and learning and the development of their basic competence in teaching African languages (Sesotho and isiZulu). All FP and IP courses are designed to integrate theory and practice, which develops pre-service teachers' understanding of how and why theory should inform their pedagogical decisions. The final year of the FP and IP programmes serves as a capstone, and pre-service teachers integrate and deepen what they have learnt in their first three years of study. Both programmes include a practicum component where pre-service teachers spend time in a university-affiliated teaching school. The teaching school is located on the university campus and is a public school for children from the Soweto community. Pre-service teachers' involvement in the teaching school reflects the "centrality of child study" (Gravett et al., 2019, p. 3).

The design of the course incorporated an adaptation of the "cognitive apprenticeship" model (Collins et al., 1991, p. 11). According to Collins et al. (1991), cognitive apprenticeship entails bringing "thinking to the surface" and making it visible: "The teacher's thinking must be made visible to the students and the student's thinking must be made visible to the teacher" (p. 3). Cognitive apprenticeship also entails situating "abstract tasks of the school curriculum in contexts that make sense to students" (Collins et al., 1991, p. 3). Thus, we wanted to:

- Unpack the elements of the new lesson design approach;
- Model to pre-service teachers how to use the new lesson design approach;
- Immerse pre-service teachers in the iterative designing of lessons, coupled with feedback during each iteration (which they could use to improve their lesson design);
- Provide opportunities for pre-service teachers to practice important teaching techniques, coupled with feedback;
- Vary the diversity of tasks and assessments and articulate the common aspects so that pre-service teachers can transfer what they learn;
- Situate tasks (iterative lesson design, case study assignment, reflection tasks, quizzes) in authentic contexts so that pre-service teachers could understand the relevance of the new lesson design approach to their teaching practice.

Before the COVID-19 lockdown in South Africa (which commenced on 26 March 2020), we designed the course to include contact sessions with pre-service teachers. During the contact

sessions facilitated by the core team of teacher educators, we would manage approximately 90-minute sessions on specific topics (e.g., the principles derived from the science of learning literature, competencies for a fast-changing world and teaching techniques). The sessions used learning resources (e.g., readings, PowerPoint presentations and video clips), and, on that basis, dialogues/conversations/learning tasks were structured. The dialogues/conversations/learning tasks unpacked scenarios and problems related to the lesson design approach. The core content included academic readings, video clips and case studies. It was drawn from the literature on the science of learning, competencies for a fast-changing world and expert teacher techniques (such as the techniques in Teach Like a Champion (Lemov, 2010)). The sessions also included a practice component where pre-service teachers would form small groups (of approximately six pre-service teachers) and get the opportunity to practice teaching techniques that reflected the science of learning principles and competencies for a fast-changing world (e.g., think**,** pair, share; group work; cold calling; turn and talk; the use of open-ended questioning; and retrieval practice).

In addition to contact teaching, we planned for pre-service teachers to have the opportunity to enact their learnings from the course during school practicum (referred to as work-integrated learning (WIL) in South Africa). In their fourth year, pre-service teachers can select a school (from a list of pre-approved schools) where they attend school practicum. Pre-service teachers would have gone to schools for practicum in three cycles in 2020. The first cycle (three weeks) took place in March. The second (four weeks) and third (three weeks) cycles would have taken place in May/June and August, respectively, but due to the COVID-19 lockdown, pre-service teachers could not go to schools for practicum. In addition to the ten weeks that pre-service teachers would have spent at a school of their choice, they would have spent an extended amount of time at the university-affiliated teaching school. Pre-service teachers would have attended two five-day cycles (one during the first semester and one during the second semester). During each cycle, pre-service teachers would have designed and taught several lessons. A teacher educator from the department would have evaluated one of the lessons in each cycle. In addition, pre-service teachers would have designed and taught lessons that mentor teachers at the teaching school would have evaluated.

After engaging with the course content, the course required pre-service teachers to design lessons in a cyclic (iterative) fashion (Gravett et al., 2022). This is similar to the microteaching lesson study (MLS) approach, which foregrounds lessons' cyclic, collaborative development (Fernandez, 2010). During each design and refinement cycle, the pre-service teachers received feedback on their lessons from the same teacher educator who facilitated their small-group practice and reflection sessions (Gravett et al., 2022). The teacher educators who facilitated the small-group practice and reflection sessions are similar to what Fernandez (2010, p. 352) calls “knowledgeable advisor[s]”. Pre-service teachers submitted their lesson designs on the university's learning management system throughout the year (before and after the move to emergency remote teaching). This made it possible for the small-group practice and reflection session facilitators to grade their lesson designs and write extensive feedback.

A core premise of the course piloted and studied is that we should draw on all the available knowledge to help us understand how learning happens and how learning can be supported. As a result, the principles derived from the science of learning literature drew on research in many disciplines, including education, cognitive psychology, and cognitive neuroscience. In addition,

the literature that refers to the science of learning more broadly (and draws from research in multiple disciplines) was also consulted — drawing on several research bodies allowed us to have a fuller picture of the science behind learning. Gravett (2020, pp. 3-8) articulated eight principles derived from her reading of the science of learning literature applicable to lesson design. These principles are:

- We understand/learn new things/ideas by relating them to what we already know.
- Our working memory is limited. Too much information swamps our working memory.
- Proficiency/skill requires engagement and practice.
- Transfer of learning does not happen automatically.
- Learning requires cognitive engagement, which is supported through moderate challenge that elicits interest.
- Emotion and cognition are intertwined.
- Learners learn more effectively if they understand how they learn and manage their own learning (metacognition – thinking about one's thinking).
- Innate ability does matter but effort can yield gains.

The competencies foregrounded in the new lesson design approach (collaboration, critical thinking, creativity, communication and metacognition) were selected by drawing on the Four-Dimensional Education framework (Fadel et al., 2015) of the Center for Curriculum Redesign. These competencies were also selected because they are widely considered in the education literature as essential in a fast-changing world (National Research Council, 2012; Fadel et al., 2015; Griffin et al., 2015; Marope et al., 2019; Scott, 2015; Center for Curriculum Redesign, 2018).

Changes made to the course as a result of emergency remote teaching

Planning of the course took place before the COVID-19 pandemic, and contact teaching was an essential part of the course. We also planned for pre-service teachers to have the opportunity to enact their learnings from the course during practicum at schools. When the country was locked down, teaching and learning had to move online abruptly. Pre-service teachers also no longer had access to schools for practicum. This complicated the implementation of the course. Due to the emergency implementation of remote teaching, we had to restructure some aspects of the course to offer the course remotely (online). Pre-service teachers still cyclically designed lessons (iterative lesson design) and attended small-group practice and reflection sessions (using online platforms). Because large-group contact sessions (lectures) were no longer possible, content (readings, PowerPoint presentations with voiceovers, videos, blogs, and so forth.) was released weekly in a consistent, routine format on the university's learning management system. Each week, we uploaded a table for pre-service teachers, which provided an overview of all the online activities they had to complete during that week. Pre-service teachers were expected to engage with course content online and complete the weekly activities independently. In addition to readings, podcasts, blogs, videos etc., pre-service teachers had to work through PowerPoint presentations that contained voice recordings (which were used to unpack the content). A discussion thread was created about the content pre-service teachers had to engage with each week. Pre-service teachers used the discussion thread to seek clarity and comment on each other's thoughts and ideas. The course content was consolidated and unpacked further during bi-weekly synchronous online discussions with the entire pre-service teacher cohort (using MS

Teams). The small-group practice and reflection sessions were also facilitated online (using digital platforms such as MS Teams, Zoom and WhatsApp). The discussions were recorded and uploaded to the university management system so that pre-service teachers who could not attend the discussions due to connectivity/data issues could access them conveniently.

The course implementation was monitored carefully and researched throughout the year. We analysed the lessons that the pre-service teachers designed and interviewed them about the lessons. We also interviewed some pre-service teachers to gauge their overall experience of the course. This paper aims to report on the lessons learnt from the emergency remote teaching experienced due to COVID-19 that can enrich the teaching of the course going forward.

Method

Data was collected via individual, semi-structured interviews with a sample (n=20) of students to find out their experiences of the course. Using a list of pre-service teachers who were enrolled for the course (N=183), we randomly selected 20 students we considered representative of the overall fourth-year cohort to form part of the study. In the fourth-year cohort, the majority of students were females. This is not surprising considering the feminisation of the workforce in primary schools (Petersen, 2014). Thus, 19 females and one male formed part of the study. The university campus where this study took place is located in an urban area in Johannesburg, South Africa, and attracts students from urban and rural contexts. The students who study at the campus are predominantly African and from different socio-economic and linguistic backgrounds. This was represented in the sample, which consisted of 14 African-, two Coloured-, two White- and two Indian students who differed in terms of their socio-economic status and linguistic backgrounds.

As we were interested in finding out pre-service teachers' experiences of the course, the best way for us to do this was to ask them to share their experiences. In choosing to use semi-structured interviews, we were led by Maykut and Morehouse (1994), who described the purpose of using semi-structured interviews as providing opportunities for the researcher to ask questions relevant to the study. In the semi-structured interviews, there was thus some structure based on the pre-determined questions. We also probed their answers for additional information. Annexure A highlights the questions asked during the semi-structured interviews and includes examples of prompts used. In the one-on-one interview setting, participants were not influenced by each other's responses and were likely to feel more comfortable sharing their experiences openly. Thus, the data generated in the study can be described as 'rich' and in-depth (Merriam, 1992, p. 52). Due to lockdown restrictions (as a result of the COVID-19 pandemic), the semi-structured interviews were conducted via Microsoft Teams. Each interview lasted approximately 40 – 60 minutes to accommodate the participants' limited bandwidth. Participants were also not required to switch on their video cameras during the interviews. This is a possible limitation as the interviewers could not pick up on the participant's body language and facial expressions. The ethics committee where this study took place provided ethics clearance for the research (ethics clearance number: 2-2020-091), and participants provided written informed consent to form part of the study.

Data was analysed using the constant comparative method (Maykut & Morehouse, 1994, p. 127). Merriam (1992) explains that the constant comparative method does exactly what the name

suggests - it constantly compares. We started with a specific occurrence from an interview and then compared it with another occurrence from the same/ or different set of data. These comparisons led to categories that were then compared to other occurrences. Thus, as researchers, we constantly compared different responses through different levels of abstraction until emergent categories were identified.

We began the data-analysis process by transcribing the interviews verbatim. After we transcribed the interviews, we read each transcription to identify provisional categories. After identifying the provisional categories, we read through each transcript and identified individual “units of meaning” (Maykut & Morehouse, 1994, p. 128). A unit of meaning is a section of the data (such as a phrase or sentence) that stands on its own and conveys meaning. The units of meaning were derived from the participant's responses in the interviews and were embedded within the focus of inquiry. Units of meaning were highlighted and assigned a code that contained the essence of the unit of meaning in the margin alongside the highlighted section.

Maykut and Morehouse (1994) explain that the constant comparative method involves taking one unit of meaning and then comparing it to all other units of meaning in a particular transcript. Using the “look/feel-alike” criteria described by Maykut and Morehouse (1994, p. 137), similar units of meaning were sorted into the same provisionally identified categories. We developed new categories where there were no provisionally identified categories that matched the semantic units of meaning. This resulted in some initial categories merging and some being discarded.

We continually refined the categories by writing rules of inclusion. A rule of inclusion serves as the “basis for including (or excluding) subsequent data cards in the category” (Maykut & Morehouse, 1994, p. 139). Lincoln and Guba (in Maykut & Morehouse, 1994, p. 139) suggest writing the rule of inclusion as a propositional statement, which conveys the meaning of the data cards collected under a category name.

During data analysis, we systematically increased our understanding of the categories, which were beginning to form, by subjecting the categories to constant testing, checking and exploration to identify ambiguities and overlaps. Using the constant comparative method, we were able to identify themes in participants’ responses, and we could derive from their responses what their experiences of the course were. Comparing the students’ responses allowed us to identify lessons learnt from the COVID-19 induced emergency remote teaching.

Results

In addition to exploring how students made sense of and implemented the new lesson design approach, we wanted to investigate lessons learnt from the COVID-19 induced emergency remote teaching. Analysing the data highlighted the benefits of remote (online) teaching that should be considered when using a blended approach to harness online teaching affordances. The benefits are captured in four categories, which are presented in Table 1.

Table 1:
Lessons learnt from the COVID-19-induced emergency remote teaching

Category	Example from raw data
Category 1: Emergency remote teaching highlighted the benefit of explicit communication and continuous support in teacher education going forward **Rule of inclusion:** Students highlight the value of explicit communication and continuous support during remote learning	"*What I appreciated was, you guys kept on just communicating and keeping us up to date and letting us know of any changes, and when you guys would give information, or when it came to the lecture slides and other information, you made sure it was all available for us*".
Category 2: Emergency remote teaching highlighted the affordance of small-group practice and reflection sessions in promoting learning of lesson design in the online environment **Rule of inclusion:** Students highlight the value of the small-group practice and reflection sessions	*"I enjoyed the reflection sessions. Those small group sessions, because they allowed us to review other people's perceptions of a certain topic, and to find out how they think, and different views. So you are able to learn from other pre-service teachers, and also the lecturer itself".*
Category 3: Emergency remote teaching highlighted the benefit of structuring course content in a consistent, routinised and accessible way **Rule of inclusion:** Students highlight the importance of course content and structure during remote learning	*"I think that the [course] was really enjoyable because everything was just so clear and there was structure and it wasn't like all over the place. It was easy for us to understand even being online and with all the change and the stress that comes with that is like a smooth transition"*
Category 4: Emergency remote teaching highlighted the need to prepare pre-service teachers to adapt to teaching in different learning contexts (contact, blended or online) going forward **Rule of inclusion:** Students highlight the need to be adaptable during remote teaching and learning	"*What I have learnt is that, especially with this pandemic, it is true that as a teacher you have to... you don't stop learning, and you have to adapt to the changes that we encounter. Because we don't know what the future holds for us, so we have to always be ready, for every problem that may come our way*".

Category 1: Emergency remote teaching highlighted the benefit of explicit communication and continuous support in teacher education going forward

The data indicated that an online component in a blended approach (which is the approach that will be implemented going forward) enables explicit and continuous communication with students, which alleviates student confusion and anxiety. This was evident from the data collected in the interviews about students' course experiences, during which they highlighted the value of explicit and continuous communication during remote learning. Students valued, for example, the fact

that teacher educators responded to their queries timeously, that assessment expectations were clearly communicated, and that information about the course was explicitly and continuously communicated. A comment by one of the pre-service teachers illustrates this:

> *What I appreciated was, you guys kept on just communicating and keeping us up to date and letting us know of any changes, and when you guys would give information, or when it came to the lecture slides and other information, you made sure it was all available for us.* (Pre-service teacher #11, semi-structured interview, October 2020).

The move to emergency remote teaching resulted in students feeling anxious and confused; however, students indicated that continuous and clear communication from teacher educators (which is an affordance of online teaching and learning) alleviated their confusion and anxiety. One student explained:

> *There was always information or steps of what we could take or who we could talk to... so I knew what I am doing next and I had like the whole plan in front of me. This week we are focusing on this... next week we are focusing on this… so I just enjoyed the lack of confusion. Because at the end of the day, I wasn't a pre-service teacher, I was just a confused student in the moment, so I enjoyed that. Even though we are in this whole mess, I was able to concentrate on my work instead of worrying about a lot of things.* (Pre-service teacher #9, semi-structured interview, October 2020).

The data also indicated that an online component in a blended approach affords teacher educators the opportunity to provide students with regular support. The data generated from the semi-structured interviews showed that students valued continuous support from teacher educators and tutors during emergency remote teaching. Students felt that the support they received during remote learning alleviated confusion and anxiety, as evidenced by the comments made by some students:

> *It was new to us, but I feel that the process of it, when I look back, actually wasn't so bad at all. We got so comfortable. We had support, we knew what we had to do, and I feel like that was actually very good. I wouldn't mind doing online learning from now on and forever.* (Pre-service teacher #12, semi-structured interview, October 2020).

> *You guys are like so supportive and encouraging. Like it's really helped, and even your sympathy and empathy, like that went a long way for a lot of us, especially me personally*. (Pre-service teacher #13, semi-structured interview, October 2020).

Category 2: Emergency remote teaching highlighted the affordance of small-group practice and reflection sessions in promoting learning of lesson design in the online environment

The small-group practice and reflection sessions, which were originally intended to be offered as contact sessions, combined with limited online work, were maintained through digital platforms (Microsoft Teams, Zoom and WhatsApp). An analysis of the data highlighted that even though the small group practice and reflection sessions were offered online, they were still effective in facilitating pre-service teachers' understanding of the new lesson design approach. During the interviews, students commented on the value of the small-group practice and reflection sessions

in relation to learning about lesson design. One student said, “Those were very interesting. We've learnt a lot about lesson planning, not just about lesson planning, but how to introduce a lesson, how to behave as a teacher, how to reflect actually” (pre-service teacher #6, semi-structured interview, October 2020*)*. One of the reasons that the small-group practice and reflection sessions were still effective, despite being offered online, is because the sessions enabled meaningful interactions and reflection about the content. This was evident in the data as reflected in the student interview excerpts:

> *I enjoyed the reflection sessions. Those small group sessions because they allowed us to review other people's perceptions of a certain topic and to find out how they think and different views. So you are able to learn from other pre-service teachers, and also the lecturer itself.* (Pre-service teacher #3, semi-structured interview, October 2020).
>
> *We really had to reflect on what we were doing and the principles that we were learning, and reflect on what we were doing.* (Pre-service teacher #14, semi-structured interview, October 2020).

Category 3: Emergency remote teaching highlighted the benefit of structuring course content in a consistent, routinised and accessible way

Content (readings, PowerPoint presentations, videos, blogs etc.) was made available on the learning management system (Blackboard). The content was released weekly in a consistent, routinised format. Emergency remote teaching highlighted the importance of the structure of course content. From the student's perspective, the consistent and routinised way the content was structured online benefitted their learning and made the content more accessible. The following comment made by a student during the general interview about their experiences of the course demonstrates this:

> *I think that the [course] was really enjoyable because everything was just so clear and there was structure, and it wasn't like all over the place. It was easy for us to understand even being online, and with all the change and the stress that comes with that is like a smooth transition.* (Pre-service teacher #15, semi-structured interview, October 2020).

Contact with students was maintained through digital platforms (Microsoft Teams, Zoom and WhatsApp), involving students in group interactions. Emergency remote teaching highlighted the benefit of using digital platforms for group interactions going forward. The data indicated that discussion boards, group chats and online group sessions could facilitate meaningful conversations about the content. This comment is an example of how students experienced group interactions on the digital platforms: “It helped me look at many of the things in a different way when I interacted with the rest of the class” (Pre-service teacher #4, semi-structured interview, October 2020). The data revealed that digital platforms are useful for facilitating meaningful conversations about the content because students feel more comfortable participating in discussions on these platforms. Comments such as “often times we gather in those large lecture halls, and sometimes you become shy to ask questions and stuff, but with those mini sessions I was able to interact and learn more” (Pre-service teacher #7, semi-structured interview, October 2020) and **“**in class you don't really get to hear other people's views because some people are

more shy, and then when they answer online they can be more outspoken" (Pre-service teacher #1, semi-structured interview, October 2020) are indicative of this finding.

Category 4: Emergency remote teaching highlighted the need for teacher educators to prepare students to adapt to teaching in different learning contexts going forward (contact, blended or online)

During remote teaching, students had to design lessons for both contact and digital environments. Students also had to teach pre-recorded lessons remotely. The students note that designing and teaching lessons remotely required additional contextual considerations they were unprepared for. One student said: "I feel like this specific year has made it so obvious to us that there are things that we are missing" (Pre-service teacher #3, semi-structured interview, October 2020). Another student said, "I feel that now because of all these sessions, I feel better prepared and equipped for what might come next year" (Pre-service teacher #16, semi-structured interview, October 2020). This finding highlighted the need to prepare students to adapt to teaching in different learning contexts in the course as we advance, or as one student phrased it, "I've learnt to think on my feet" (Pre-service teacher #17, semi-structured interview, October 2020.) Another student noted:

> *What I have learnt is that, especially with this pandemic, it is true that as a teacher, you have to... you don't stop learning, and you have to adapt to the changes that we encounter. Because we don't know what the future holds for us, so we have to always be ready, for every problem that may come our way.* (Pre-service teacher #2, semi-structured interview, October 2020).

Although students did not have many practical opportunities to enact learnings from the coursework, they still feel confident in entering the teaching profession; as one pre-service teacher reflected:

> *I feel like I have the experience even though I did not have that much practical experience this year teaching. I feel like I have the experience to go into the classroom with confidence about my teaching.* (Pre-service teacher #18, semi-structured interview, October 2020).

Discussion

The national lockdown in South Africa, which resulted from the COVID-19 pandemic, forced many schools and universities to move to emergency remote online teaching (Li & Lalani, 2020). According to Martin-Barbero (2020), "Very few people would have predicted that universities would face such a paradigm shift – with predominant virtual teaching and remote working bursting onto the scene – as a consequence [of] a global pandemic" (p. 1). The move to emergency remote online teaching and learning presented several challenges and opportunities for universities. According to Sarma (2020), the move to online teaching and learning is the perfect opportunity to rethink how we prepare students. This is also the view of Soler and Dadlani (2020), who argued that emergency remote teaching allows us to "reimagine what teaching could and should look like in the 21st century" (p. 1). The findings of this study highlight some of the benefits of remote (online) teaching that should be considered to harness online teaching affordances when using a blended approach going forward.

First, the findings highlighted the benefit of explicit communication and continuous support in teacher education. When the country was placed under lockdown in March 2020 last year, we were in the middle of the first semester. Almost overnight, teaching and learning had to be moved online to maintain a "class of continuity and normality for students and their families" (Martin-Barbero, 2020, p. 1). According to Li and Lalani (2020), many believed that the sudden move to remote online learning would result in students having a poor experience, which they attributed to the lack of training that students and lecturers had with online teaching and learning, insufficient data and devices to access online learning, and little/no preparation. We certainly experienced this with our students when we started teaching online. The sudden move to online remote teaching caused a lot of anxiety for students, who did not know how they would be able to complete their final year of study from home. One student, in a personal message to one of the lecturers who taught in the course, said:

> *I am at home, the signal is very bad. It is a challenge for me to access blackboard regularly. I have to go to the other part of the village which has better connection in order to have good access to blackboard.* (Pre-service teacher, personal communication, 2020).

Li and Lalani (2020) explain that the problem of students who don't have access to online learning is seen across countries. Many students in our programme had insufficient bandwidth for online learning and did not have devices to access online learning. Students' anxieties were further exacerbated by the uncertainty caused by the rapidly spreading coronavirus disease. Students were supported through a collaborative effort involving peers, tutors and lecturers using WhatsApp and email. After the university provided students with a monthly data allowance and assisted students who had no devices, the need for this support diminished. We kept students up to date about happenings in the course through regular communication on the university learning management system. Students were also provided with additional support on a case-by-case basis. Many students contacted the lecturers who taught in the course directly on WhatsApp. During the interviews about their experiences of the course, students highlighted the value of explicit and continuous communication during remote learning. The data also indicated that an online component in a blended approach allows teacher educators to provide students with regular support. To strengthen the course as we advance, we intend to keep the line of communication between ourselves and students open and to continue to utilise platforms such as WhatsApp, which enable quick and efficient communication and individualised support.

Another benefit highlighted in the findings was the affordance of small-group practice and reflection sessions in promoting learning of lesson design in the online environment. According to Sarma (2020), for deep, actionable learning to take place online, there needs to be regular "debates, discussions, projects, coaching, criticism and feedback" (p. 1). In the small group practice and reflection sessions, students shared and discussed ideas on the lessons they were designing with their peers and the lecturer, who provided supportive and actionable feedback. We were initially concerned that the lack of contact teaching would result in detached students. However, the data highlighted that despite the small group practice and reflection sessions being offered online, they were still effective in facilitating pre-service teachers' understanding of the new lesson design approach. We learnt that creating a conducive learning environment in the online space was still possible and that eliciting active cognitive engagement was possible in the remote online environment.

Structuring course content in a consistent, routinised and accessible way should be a given for any university course. The students in this study highlighted that the consistent and routinised way the content was structured online benefitted their learning and made it more accessible. The data also indicated that using discussion boards, group chats, and online sessions could facilitate meaningful conversations about the content. Sarma (2020) argues that "much of the in-person time in classrooms around the world is wasted in one-too-many lectures that might as well have been delivered on Zoom" he further claims that lectures should be reserved for "engaging two-way activities while using online and pre-reading to accomplish one-way transfer" (p. 1). The content (readings, PowerPoint presentations, blogs, etc.) was released every Monday in the course piloted in this study. Students were made aware of which day of the week each activity needed to be completed. We also used reflection and learning tasks to help guide students' learning. Every second week, we met with students on MS Teams to have a facilitated learning discussion about the content they had been engaging with. In other words, students had to pre-read articles, engage with learning and reflection tasks, complete quizzes and so forth in preparation for the facilitated learning discussion – during which we engaged in meaningful discussions about the content. We will continue to use this approach to strengthen the course going forward.

An unexpected benefit of emergency remote teaching is that it forced students to think about designing lessons for both contact and digital environments. The move to emergency remote teaching meant students had to plan and teach lessons online. Students report that planning and teaching lessons in the online space required different contextual considerations. This highlighted the need to prepare students to adapt to teaching in different learning contexts going forward. According to Soler and Dadlani (2020, p. 1), this will not simply be achieved by moving classes from the "chalkboard to a Zoom call", but it requires radically rethinking and reshaping the way we teach and learn. Rogoff (2020, p. 1) argues that to provide better quality learning experiences, universities should not "push technology aside" as lockdown restrictions fade and we return to contact-based classes. Instead, university programmes should look for the best ways to harness the potential of online learning.

Conclusion

As we advance, we will offer the course fully blended – combining the best affordances of online and contact teaching. We intend to maintain the format that we used online that enabled guided self-directed learning. For example, we will still require pre-service teachers to work through online content independently. Upon returning to campus, we will use contact sessions (lectures) to unpack the contact further and for students to enact and rehearse coursework learnings. And, of course, we look forward to observing how the students can practice what they learn during coursework in the lessons they design and teach during work-integrated learning at schools.

Conflict of Interest

The author(s) disclose that they have no actual or perceived conflicts of interest. The authors disclose that they have not received any funding for this manuscript beyond resourcing for academic time at their respective university.

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Annexure A: Semi-structured interview questions

The following questions were asked during the semi-structured interviews with participants:

- Tell me about your experience of the methodology course this year. (As prompts: What was difficult/challenging, if anything? What did you find valuable/did you enjoy, if anything?)
- What have you learnt about teaching this year that you had not learnt before, if anything? How will this influence your practice as a teacher?
- What have you learnt about the learning process this year that you had not learnt before, if anything? How will this influence your practice as a teacher?
- What have you learnt about competencies for a fast-changing world, if anything? How will this influence your practice as a teacher?
- The lesson design process that you were taught this year differs from what you did in previous years. How would you describe the difference?
- What (if anything) have you found valuable in relation to the new lesson design process?
- What difficulties (if any) have you experienced with the new lesson design process?
- Has the new lesson design influenced your view of teaching? If so – how? And why?