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Student nurses' experiences of remote learning during Covid-19 pandemic: A qualitative evidence synthesis

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Abstract

Aim: To systematically synthesize undergraduate student nurses' experience of on-line, blended or distance learning during Covid-19 pandemic.

Design: A qualitative evidence synthesis (QES).

Review Methods: A QES. Themes were organized using the 'best fit' framework approach. Methodological limitations and confidence in the review findings were informed by GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research).

Data Sources: Qualitative literature from five databases including CINAHL, PubMed, Medline, Education Full Text (H.W. Wilson) and ERIC were searched from March 2020 to November 2021.

Results: Nine qualitative and two mixed method studies were included in this 'best fit' framework using Chickering and Gamson's Seven Principles for Good Practice in Undergraduate Education. Importance of the social presence of the teacher through effective communication and interpersonal relationships is highlighted. Clinical placement and in-person practical skills training are needed for effective nursing education.

Conclusions: This review highlighted that online content can be developed into efficient and high-quality learner-centred education within blended undergraduate nursing programmes incorporating essential face-to-face and practical components. Various supporting measures are required for both students and faculty. We suggest an adaptation of a 'Blending with Purpose: The Multimodal Model' with key considerations for undergraduate nursing programmes where pedagogical objectives and activities drive the approaches to achieve intended learning outcomes and student satisfaction.

Implications for the Profession: Well-designed online programmes using digital tools that support interaction and teamwork are required for undergraduate nursing education.

Impact:

- Blended learning approaches offer more flexibility than online learning alone which leads to improved student engagement.

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- Clinical placement and in-person practical skills training are needed for effective nursing education.

Reporting Method: 'Enhancing transparency in reporting the synthesis of qualitative research' (ENTREQ) for QES.

No Patient or Public Contribution: No Patient or Public Contribution.

KEYWORDS

blended learning, Covid-19, nurse education, online learning, qualitative evidence synthesis

1 | INTRODUCTION

Distance, online or remote learning is the use of digital tools to deliver, support and improve teaching and learning (Durmaz et al., 2012). Blended learning is '*any combination of face to face instruction with technology-mediated instruction, where all participants in the learning process are separated by distance some of the time*' (Leidl et al., 2020, p. 1). Over the last two decades, nursing education in higher education institutions has evolved to merge traditional face-to-face learning systems with online education creating new blended programmes to deliver nursing education (Fletcher et al., 2007; Graham, 2006; Ilankoon et al., 2022; Leidl et al., 2020). However, many nursing education programmes worldwide maintain much of the traditional face-to-face teaching methods (Ilankoon et al., 2022; Leidl et al., 2020).

The World Health Organization (2020) formally declared Covid-19 a pandemic on the 13th of March 2020. To stop or slow the spread of disease and protect public health, most countries worldwide implemented '*lockdowns*' for entire populations (Nicola et al., 2020). Extraordinary measures were imposed to reduce human mobility and maintain social distancing including the drastic measure of closing schools and universities (Coccia, 2021; Nicola et al., 2020). In response and to continue education in higher education institutions, most universities globally were forced to rapidly change their instructional approach from conventional campus-based learning to remote learning using digital tools (Carolan et al., 2020; Jackson & Usher, 2022; Langedård et al., 2021). This rapid change to how educational programmes were delivered posed many challenges for students including technology infrastructure, lack of technical support, a changed learning environment and more responsibility for their time management (Carolan et al., 2020; Jackson & Usher, 2022).

Further challenges were posed for students studying health sciences and health-related degrees where there is a minimum requirement for practical placement experience (Collado-Boira et al., 2020). Nursing education, for example, relies on clinical placement exposure to prepare students to become competent practitioners. Therefore, nursing educators became flexible and innovative as they pivoted to an online learning environment including alternative clinical experiences and adapting learning evaluations (Jackson et al., 2020).

2 | THE REVIEW

Transforming curricula to include online components is a rigorous process that can take years to successfully accomplish. Moreover, one of the main barriers for the use of online delivery of nursing education is the lack of student knowledge in using technologies in education (De Oliveira et al., 2017).

The pandemic significantly accelerated remote learning processes and proved that change to curricula can happen rapidly (Iheduru-Anderson & Foley, 2021). However, the rapid change brought immense pressure and feelings of anxiety for nursing students during the pandemic (Smith et al., 2021), despite online education already been proven to be an effective teaching-learning strategy in undergraduate nurse education (Jones et al., 2020; Tavares et al., 2018). Fitzgerald and Konrad (2021) identified through a survey of nursing students ($n=50$) that 90% had difficulty concentrating online, while 84% expressed feelings of anxiousness or were overwhelmed by the rapid transition from face-to-face to online learning during the Covid-19 pandemic.

While the pandemic forced most education components online, De Oliveira et al. (2017) caution that an excessive use of distance learning in nursing courses, beyond 20% of the total class load, may compromise the teaching of professional competencies. The lack of face-to-face contact with professionals and users of healthcare services, in both interaction and development of techniques and procedures, diminishes the quality of qualified health professionals to identify patients' needs (De Oliveira et al., 2017). Honkavuo (2020) agrees that technology can enhance content delivery in nursing education; however, face-to-face practical teaching and clinical requirements are imperative for nursing education. Tavares et al. (2018) further suggest that online teaching can improve and complement traditional teaching, which favours the production and exchange of knowledge, as well as stimulating autonomy. Thus, synthesizing nursing student experience internationally could guide future nursing curricula developments in a global context by considering strengthening blended learning approaches through combining practical, traditional and a mix of online teaching methods. This could accommodate student-learning styles by incorporating the best components to deliver the content (Ilankoon et al., 2022; Shorey et al., 2022; Thirsk

et al., 2023; Usher et al., 2022). Beyond the pandemic, blended learning approaches will offer more flexibility than online learning or traditional face-to-face learning alone which could lead to improved student engagement (Jones et al., 2020; Leidl et al., 2020; Shorey et al., 2022; Tavares et al., 2018; Usher et al., 2022; Thirsk et al., 2023).

Gradually it is being recognized that attempts to synthesize insights from individual qualitative studies should be made to inform the evidence base, as is common practice for quantitative research (Flemming & Noyes, 2021; Sandelowski et al., 1997; Thomas & Harden, 2008). Qualitative evidence synthesis (QES), 'is a type of systematic review that brings together the findings from primary qualitative research in a systematic way' generating useful knowledge (Flemming & Noyes, 2021, p. 1). The aim is not only to aggregate findings but to develop new cumulative knowledge (Flemming & Noyes, 2021).

Synthesizing published qualitative studies that have examined nursing students' experiences with online learning during the Covid-19 pandemic will identify students' experiences, views, beliefs and priorities. This synthesis will provide useful knowledge to inform the evidence base and educational practice (Carroll, 2017; Flemming et al., 2019). Consolidating international qualitative literature of students' experiences may also guide educational and supportive interventions to better support students achieve intended learning outcomes through online platforms globally and support nurse educators determine what aspects of course delivery should continue online.

3 | AIM AND RESEARCH QUESTION

The aim of this review was to systematically identify and synthesize all available qualitative research relating to the experiences of undergraduate student nurses of online, blended or distance learning during the Covid-19 pandemic.

The following research question guided this review: what are the experiences of student nurses with online, blended or distance learning during Covid-19 Pandemic?

4 | METHODS

4.1 | Design

This QES used a 'best fit' framework synthesis (BFFS) method. BFFS combines thematic synthesis with an applicable framework to systematically organize data into an a priori conceptual framework (Carroll et al., 2013; Flemming & Noyes, 2021). We adopted Chickering and Gamson's (1987, p. 2) Seven Principles for Good Practice in Undergraduate Education Framework (Figure 1). This framework identifies seven principles that can help improve undergraduate education and was, therefore, deemed a clear and fitting framework to apply to support this synthesis of undergraduate student nurses' experience of online learning during Covid-19 Pandemic. The 21 items within the 'Enhancing transparency in reporting the synthesis of qualitative research' (ENTREQ) for QES (Tong et al., 2012) guided this review (File S1-ENTREQ Checklist).

4.2 | Search methods

Using the PEO framework (population, exposure, outcome), both researchers identified the main concepts for the research question and developed the search strategy. A systematic search of five electronic databases was undertaken including: CINAHL, PubMed, Medline, Education Full Text (H.W. Wilson) and ERIC. The search string for all databases is presented in Table 1 and was adapted accordingly for each database. Searching was completed on the 25th of November 2021 and only included articles published since Covid-19 was declared a pandemic.

4.3 | Search outcomes, screening and inclusion criteria

The initial search generated 148 studies. An additional search in Google Scholar generated 113 additional studies. Despite Google Scholar's limitations, it is appropriate to use in some qualitative

Chickering and Gamson (1987) Seven Principles to Improve Undergraduate Education

1. ENCOURAGES CONTACTS BETWEEN STUDENTS AND FACULTY
2. DEVELOPS RECIPROCITY AND COOPERATION AMONG STUDENTS
3. USES ACTIVE LEARNING TECHNIQUES
4. GIVES PROMPT FEEDBACK
5. EMPHASISES TIME ON TASK
6. COMMUNICATES HIGH EXPECTATIONS
7. RESPECTS DIVERSE TALENTS AND WAYS OF LEARNING

FIGURE 1 Chickering and Gamson's (1987, p. 2) Seven Principles for Good Practice in Undergraduate Education Framework.

reviews (Piasecki et al., 2018). A review of the included studies' citations did not generate any new studies.

Search results were imported into the bibliographic software management system, EndNote x9. Duplicates were removed and 225 studies were imported into Rayyan, a software programme that operates as a blind online screening tool (Ouzzani et al., 2016).

Studies were included if they met the following inclusion criteria:

- Studies in English.
- Qualitative and/or mixed method studies (interviews, direct observation, focus groups, participation action research, grounded theory, phenomenology, ethnography, content analysis, thematic

analysis, narrative analysis, generic qualitative studies) with primary data to include nursing students' experiences or perceptions of online learning, blended or distance learning during Covid-19 pandemic (2020–2021).

Both authors independently reviewed titles and abstracts, 30 studies were included for full-text screening. Both authors independently read the full texts and agreement was reached on excluding 19 studies and including 11 studies (Figure 2 PRISMA Flow Diagram). Data from six studies could not be extracted as there were participants other than undergraduate nursing students included, which could not be confidently differentiated for inclusion.

TABLE 1 Search string.

Search string
"Online Learning" OR "Blended Learning" OR "Hybrid Learning" OR "Distance learning" OR "Self-Directed Learning" OR "Directed Learning" OR "Virtual Learning" AND "Covid-19" OR "Pandemic" OR "Coronavirus" OR "SARS-COV-2" AND "student nurs*" OR "undergraduate nurs*" OR "postgraduate nurs*" AND "experience" OR "view" OR "perspective" OR "perception" OR "attitude" AND "qualitative" OR "mixed method*" OR "focus group*" OR "interview*" OR "observation*" OR "phenomen*" OR "grounded theory*" OR "ethnograph*" OR "lifeworld" OR "conversation analysis" OR action research OR hermeneutic OR narrative OR content analysis OR colaizzi* OR "Heidegger" OR "van Manen" OR "Merleau Ponty" OR "Husserl" OR "questionnaire"

4.4 | Appraisal process, data extraction and data analysis

Eleven studies were imported and analysed using NVivo© software for qualitative data analysis. Data extraction was undertaken independently by both authors. The data extracted and analysed consisted of both verbatim quotations from study participants and researchers' understandings of the findings. Line-by-line coding was conducted and themes organized within our BFF Chickering and Gamson's (1987, p. 2) Seven Principles for Good Practice in Undergraduate Education Framework.

An assessment of methodological limitations was undertaken by both authors using the Critical Appraisal Skills Programme (CASP)

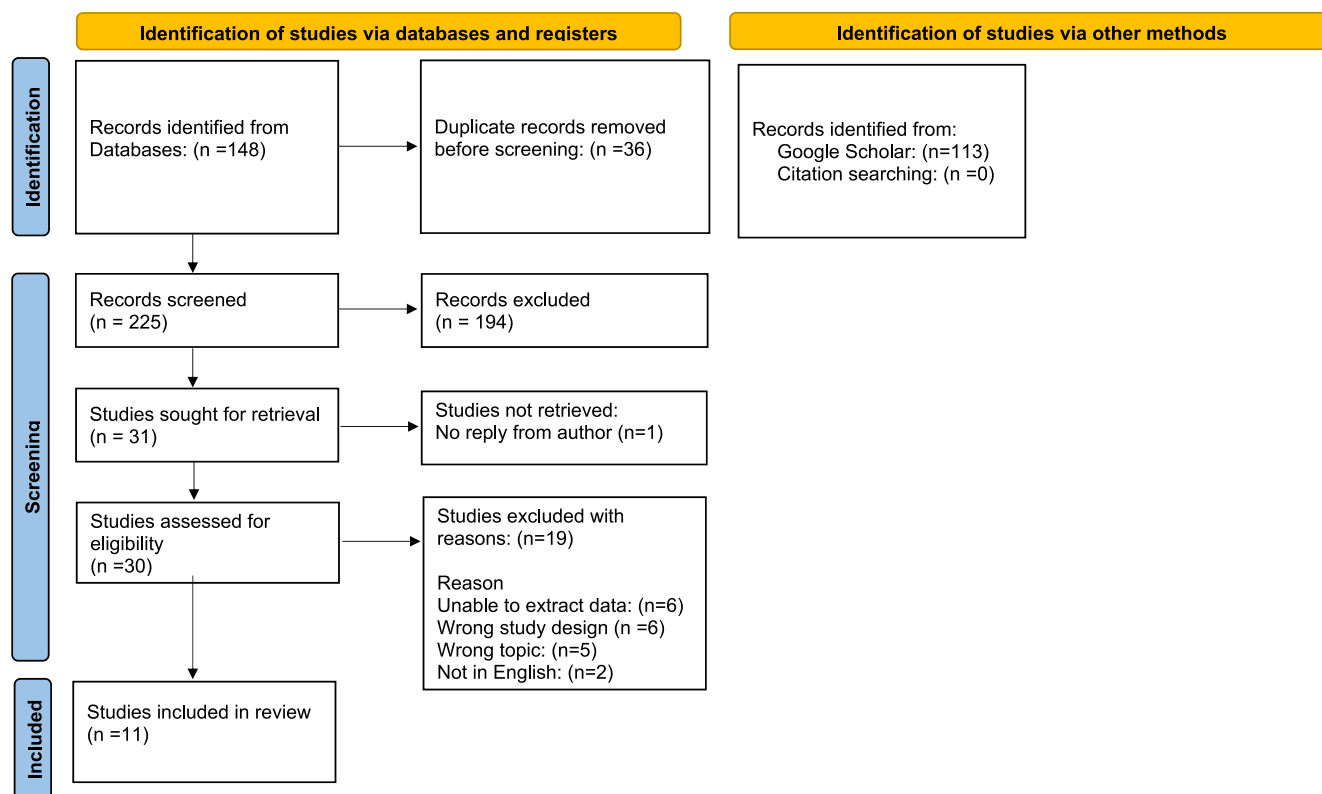


FIGURE 2 PRISMA flow diagram.

qualitative assessment tool (Critical Appraisal Skills Programme, 2018). As per the CASP criteria, there were mainly no concerns with the included studies' validity, results and relevance; however, researcher reflexivity was unclear in three studies and there was no evidence that ethical issues were considered in one study (Table 2). Where reflexivity was not considered, it reduced the quality rating of the paper as reflexivity is a key consideration for qualitative empirical research (Flemming & Noyes, 2021). Assessment of confidence in the overall findings was undertaken by both authors using four criteria: methodological limitations, coherence, relevance and adequacy as outlined in GRADE CERQual (Lewin et al., 2018). The review findings were mainly ranked high confidence (See File S2).

Flemming and Noyes (2021) identify that author reflexivity is an essential component of the QES process (Flemming & Noyes, 2021) and reflexivity was maintained throughout this QES. Internal validity was maintained '*when selecting studies, conducting a quality appraisal, data extraction and coding, undertaking the synthesis, developing and finalizing the findings*' as recommended by Flemming and Noyes (2021, p. 9). Authors engaged in ongoing discussion when selecting the study sample, agreeing on the 'best fit' framework and analysing and synthesizing the findings. Researcher reflexivity is central when undertaking a QES (Flemming & Noyes, 2021). Both authors are experienced nurse educators, and the second author (MD) has extensive experience in undertaking qualitative evidence syntheses.

5 | RESULTS

5.1 | Overview of included papers

This review included nine qualitative studies and two mixed method studies reporting 376 students' experiences with online learning during the Covid-19 pandemic. Mixed method studies were included where qualitative data were captured (Flemming et al., 2019). Three studies were undertaken in both the USA and Spain, with the remaining in Saudi Arabia ($n=1$), Korea ($n=1$), Sweden ($n=1$), Zambia ($n=1$) and Jordan ($n=1$). Study characteristics are outlined in Table 3.

5.2 | Analytic themes

5.2.1 | Encourages contact between students and faculty

Communication and interpersonal relationships between students and faculty were described as essential for effective online learning (Aldridge & McQuagge, 2021; Bdair, 2021; Ramos-Morcillo et al., 2020; Smith et al., 2021) and as '*a hallmark of online teaching effectiveness*' (Author, USA, Smith et al., 2021). Some students identified that online learning improved communication with faculty (Bdair, 2021; Ramos-Morcillo et al., 2020; Smith et al., 2021). Timely and personal communication with faculty by '*reaching out at intervals with a human touch*' (Student, USA, Smith et al., 2021) were

appreciated, and seen as a means of motivation and engagement in online learning platforms (Ramos-Morcillo et al., 2020; Smith et al., 2021; Wallace et al., 2021).

However, other students reported a lack of interaction between themselves and the faculty (Bdair, 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021). The interactive learning through body language and eye contact was reported to be lost online (Bdair, 2021; Ramos-Morcillo et al., 2020; Wallace et al., 2021). The following student quote highlights the difficulty of online communication:

discussion, reflection, learning from others, camaraderie and interpersonal relations are lost in online classes (Student USA, Smith et al., 2021)

Others have reported that without clear instruction, a visible course structure and effective communication, stress for students can increase while learning online (Aldridge & McQuagge, 2021; Långegård et al., 2021).

5.2.2 | Develops reciprocity and cooperation among students

During the rapid change to online learning, students reported all being in '*the same boat*' (Student, USA, Aldridge & McQuagge, 2021) and learning together (Wallace et al., 2021). Suliman et al. (2021) identified how students supported each other with the use of e-technology:

[...] I was helpless. I didn't know how to access the e-learning platform until my colleagues helped me step by step [...] (Student, Jordan, Suliman et al., 2021)

Online group work was identified as a good motivator, students were much happier and willing to learn together (Jiménez-Rodríguez et al., 2020; Kang et al., 2021; Långegård et al., 2021; Ropero-Padilla et al., 2021; Smith et al., 2021; Wallace et al., 2021). It also '*deepened their understanding of course content*' (Author, USA, Smith et al., 2021). Wallace et al. (2021) identified how students '*formed their own study groups and became closer as friends and had the support they needed to learn*' (Author, USA, Wallace et al., 2021). When students were facilitated to pick their own groups (Ropero-Padilla et al., 2021) or work in smaller groups (Kang et al., 2021) they worked particularly well online. Ropero-Padilla et al. (2021) suggested the use of gamification as a means of developing teamwork and learning:

(...) I believe gamification has greatly helped us in working as a team. It showed the value of teamwork and how to create a positive work environment where everyone helps each other (Student Spain, Ropero-Padilla et al., 2021)

TABLE 2 CASP assessment of methodological limitations.

No.	Author(s) and year	1. Was there a clear statement of the aims of the research?	2. Is a qualitative methodology appropriate?	3. Was the research design appropriate to address the aims of the research?	4. Was the recruitment strategy appropriate to the aims of the research?	5. Was the data collected in a way that addressed the issue?
1.	Aldridge and McQuagge (2021)	Yes	Yes	Yes	Yes	Yes
2.	Bdair (2021)	Yes	Yes	Yes	Yes	Yes
3.	Jiménez-Rodríguez et al. (2020)	Yes	Yes	Yes	Yes	Yes
4.	Kang et al. (2021)	Yes	Yes	Yes	Unclear	Yes
5.	Langegård et al. (2021)	Yes	Yes	Yes	Unclear	Yes
6.	Mambwe and Tembo (2021)	Yes	Yes	Yes	Unclear	Yes
7.	Ramos-Morcillo et al. (2020)	Yes	Yes	Yes	Yes	Yes
8.	Ropero-Padilla et al. (2021)	Yes	Yes	Yes	Yes	Yes
9.	Smith et al. (2021)	Yes	Yes	Yes	Yes	Yes
10.	Suliman et al. (2021)	Yes	Yes	Yes	Yes	Yes
11.	Wallace et al. (2021)	Yes	Yes	Yes	Yes	Yes

However, many students felt that online learning limited teamwork, social interaction and the ability to develop relationships (Aldridge & McQuagge, 2021; Bdair, 2021; Kang et al., 2021; Langegård et al., 2021; Suliman et al., 2021; Wallace et al., 2021). Some students felt isolated and depressed, and lacked the motivation to study on their own:

I did feel helpless. I had little motivation for learning, and I suffered from depression in other quality of life domains. (Student, Korea, Kang et al., 2021)

Social interaction in online learning is described as challenging and ‘*teachers need to create learning activities that improve social interactions*’ (Author, Sweden, Langegård et al., 2021). Distance learning using digital tools requires well-designed course structures that incorporate teamwork (Jiménez-Rodríguez et al., 2020; Kang et al., 2021; Langegård et al., 2021; Ropero-Padilla et al., 2021; Smith et al., 2021).

5.3 | Uses active learning techniques

Good planning and feedback using active learning techniques were identified as a means of motivating, improving concentration and engaging students to learn (Aldridge & McQuagge, 2021; Bdair, 2021;

Jiménez-Rodríguez et al., 2020; Kang et al., 2021; Langegård et al., 2021; Ropero-Padilla et al., 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021).

When students perceived little planning or innovation incorporated by the educator, they complained of lack of motivation, lack of attention and difficulty learning (Bdair, 2021; Ramos-Morcillo et al., 2020; Ropero-Padilla et al., 2021; Wallace et al., 2021) as a student explained:

Most classes consisted of three hours of sitting and listening to someone talk while doing nothing. It was tedious and repetitive (Student, Spain, Ropero-Padilla et al., 2021)

However, when innovative teaching techniques were used, learning was reported to be much more effective, motivating (Kang et al., 2021), engaging, interactive, interesting and fun (Ropero-Padilla et al., 2021; Smith et al., 2021) meaning skills were learned in a practical way (Jimenez-Rodriguez et al., 2021):

Gamification has been hugely helpful. It helps you learn new content, keeps you alert, and is a lot of fun... It has been that ray of hope that we have had this year to keep a little bit of interest in studying [...] (Student Spain, Ropero-Padilla et al., 2021)

6. Has the relationship between the researcher and participants been adequately considered?	7. Have ethical issues been taken into consideration?	8. Was the data analysis sufficiently rigorous?	9. Is there a clear statement of findings?	10. How valuable is the research, what is its quality?	CASP quality rating
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
Unclear	Yes	Yes	Yes	Medium quality. Makes a contribution to knowledge	Moderate
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
Yes	Yes (but no ethical approval for Focus Group Interviews)	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
No	Ethical Approval not documented	Yes	Yes	Medium quality.	Moderate
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong
No	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Moderate
Yes	Yes	Yes	Yes	High quality. Makes a substantial contribution to knowledge	Strong

Innovative teaching techniques identified included virtual simulations combined with a facilitated debriefing with faculty (Aldridge & McQuagge, 2021), simulated consultations (Jimenez-Rodriguez et al., 2021), peer tutoring (Kang et al., 2021), learning through gamification (Ropero-Padilla et al., 2021), discussion boards, team work using breakout rooms (Wallace et al., 2021) or online huddles, video chats and video blogs (Smith et al., 2021). Applying innovative tasks and assignments will '*stimulate students to interact with each other*' and with educators, enabling student motivation, engagement and improved learning (Langegård et al., 2021, p. 9).

5.4 | Gives prompt feedback

Students' experience and expectations of feedback differed across studies. Learning was limited in instances where students identified late or a lack of feedback and attention from faculty due to online learning and without appropriate, timely feedback (Bdair, 2021; Ramos-Morcillo et al., 2020; Ropero-Padilla et al., 2021; Smith et al., 2021; Wallace et al., 2021):

[I] wasn't able to go to talk to my professors and after class, it felt like the professors were already so busy trying to plan for the next lesson. And sometimes

they just wouldn't respond to our emails when we had questions. (Student, USA, Wallace et al., 2021)

Several students voiced a need for timely feedback and identified '*grades being a significant motivator*' (Author, USA, Smith et al., 2021). Some participants reported that educators were committed to student learning and incorporated timely constructive feedback for students (Aldridge & McQuagge, 2021; Jiménez-Rodríguez et al., 2020). Educator engagement through feedback in all aspects of the programme '*was identified as a key component of teaching effectiveness*' (Smith et al., 2021, p. 790):

I think back to the class last semester where the professor, half-way through the week, would comment on each of our discussion strings and post questions which made us think a little deeper. I respected that she was engaged and actually forced you to pay attention. (Student, USA, Smith et al., 2021)

While feedback on written assignments was deemed imperative for student learning, so too was feedback and reassurance from educators in relation to competency and evaluation of practical skills (Aldridge & McQuagge, 2021; Ramos-Morcillo et al., 2020; Smith et al., 2021; Suliman et al., 2021):

TABLE 3 Study characteristics.

Study characteristics n = 11			
Author	Year	Country	Design/method
Aldridge and McQuagge	2021	USA	Phenomenological individual interviews via Zoom
Bdair	2021	Saudi Arabia	Descriptive phenomenological Semi-structured interviews via phone
Jimenez-Rodriguez et al.	2020	Spain	Mixed method (satisfaction questionnaire and qualitative open-ended interview questions)
Kang et al.	2021	Korea	Qualitative study using three focus group interviews-video conferencing
Langegard et al.	2021	Sweden	Qualitative and quantitative Qualitative-2 Focus group interviews-video conferencing
Mambwe and Tembo	2021	Zambia	Cross-sectional Qualitative study 6 focus group interviews conference calls
Ramos-Morcillo et al.	2020	Spain	Qualitative study Semi-structured interviews online
Ropero-Padilla et al.	2021	Spain	Qualitative study using 16 focus group semi-structured interviews (face to face)
Smith et al.	2021	USA	Qualitative descriptive design (2 Faculty, 3 Student) Focus Group Interviews Face to face and WebEx
Suliman et al.	2021	Jordan	Descriptive qualitative guided by a phenomenological approach 2 focus groups via Zoom
Wallace et al.	2021	USA	Descriptive Qualitative using phenomenological approach Semi-structured online interviews

I'm afraid of having bad training and that the work exchange says that this year's promotion from the University of Granada do not have the competences necessary (Student, Spain, Ramos-Morcillo et al., 2020)

time, day or night. I really like the options online learning provides. (Student, USA, Smith et al., 2021)

Participants reported online learning increased their knowledge, information was more readily available and easily shared (Bdair, 2021; Kang et al., 2021; Ropero-Padilla et al., 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021):

[...] It is great because you can easily share information on your computer, search and present them in a variety of ways, and give immediate feedback. (Student, Korea, Kang et al., 2021)

However, challenges with online learning that wasted students' time was the lack of training and inconsistent use of online platforms across faculty (Bdair, 2021; Mambwe & Tembo, 2021; Ramos-Morcillo et al., 2020; Ropero-Padilla et al., 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021). Students recommended being consistent with platform use across modules and required universities to provide training and technical support (Smith et al., 2021; Suliman et al., 2021). Internet connectivity issues also posed a challenge

5.5 | Emphasizes time on task

Participants in all studies in this review identified that online learning allowed for greater flexibility, increased technological skill development and allowed students to study in different ways and at their own pace. The elimination of commuting time allowed for a more work-life balance and more time to study (Bdair, 2021; Langegård et al., 2021; Mambwe & Tembo, 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021):

It's really flexible, I can log-on and work at my own pace. In the beginning I was a little sceptical, but now I feel that I learn a lot through online. I think it's really effective for the adult learner. We are adults, we have work, family, and school. We can log in at whatever

Sample	Analysis	Study focus
8 undergraduate nursing students Snowball sampling	Thematic Analysis Braun and Clark 6 step	The lived experience of undergraduate nursing students learning psychomotor skills during the COVID-19 pandemic
10 undergraduate nursing students 10 faculty (not included in synthesis) Purposive sampling	Thematic analysis of Spielberg 3 step	Nursing students' and faculty members' perspectives/lived experience of online learning during COVID-19. (Advantages, challenges and recommendations)
48 nursing students	Thematic analysis of qualitative data	Nursing students satisfaction and experience of video conferencing during Covid-19
14 undergraduate nursing students (Recruitment Not specified)	Content analysis	Nursing students' experience of online peer tutoring based on the Goal-Reality-Options-Will (GROW) model
9 Undergraduate Nursing students (Recruitment Not specified)	Qualitative content analysis	Describe and evaluate nursing students' experiences of the pedagogical transition from traditional campus-based learning to distance learning using digital tools
60 third year and 4th year nursing students (Recruitment Not specified)	Thematic coding analysis	Exploring nursing students' experiences of e-learning as they pursued Midwifery Course during the pandemic
32 bachelors and masters nursing students Maximum variation sampling and snowball sampling	Inductive thematic analysis	Discover the learning experiences and the expectations about the changes in education, in light of the abrupt change from face-to-face to e-learning education, of nursing students during Covid-19 pandemic (1st month online)
149 second and 3rd year undergraduate nursing students Convenience sampling	Content analysis	Explore nursing students' experiences and perceptions of the use of game elements in two full-nursing subjects using a blended-learning teaching strategy
17 Undergraduate, Masters and Doctoral Student nurses 15 faculty (Not included in synthesis) Purposive sampling	Thematic content analysis	This study examined perceptions of online teaching effectiveness from nursing faculty and student perspectives
18 Undergraduate nursing students Purposive sampling	Content analysis	To investigate the experiences of undergraduate nursing students during their first uses of OL to increase the understanding of their encountered opportunities and challenges
11 undergraduate nursing students Purposive sampling	Colazzi's Phenomenological reduction	Explore prelicensure nursing students' experiences of the transition to remote learning during the Spring 2020 semester

for students in both urban and rural areas (Bdair, 2021; Ramos-Morcillo et al., 2020; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021) due to lack of connectivity (Mambwe & Tembo, 2021) or too many people in the one apartment connecting to the internet at the same time (Ropero-Padilla et al., 2021).

5.6 | Communicates high expectations

During the transition to online learning, the student remained at the centre of the learning process (Bdair, 2021). Online learning enabled students to take more responsibility for their learning (Bdair, 2021; Langegård et al., 2021; Suliman et al., 2021; Wallace et al., 2021). Students become self-directed independent learners which enhanced their creativity and developed their thinking and problem-solving skills (Bdair, 2021; Langegård et al., 2021; Ramos-Morcillo et al., 2020; Suliman et al., 2021; Wallace et al., 2021). Encouraging students to take more responsibility for their learning increased their creativity and teamwork, surpassing all expectations, which can be seen from the following student quotation:

I had to find ways to be creative, to learn how to do a lot of the nursing tasks. And so my creativity expanded. I made my own tools. I made my own Foley catheters... I taught classes with a few of my peers. So after we do our classes we get together and do our own classes to make sure that we got everything out of the lecture. (Student, USA, Wallace et al., 2021)

While the increased responsibility was embraced by many students, this self-directed responsibility was seen as an excuse to sit back and relax by some (Ramos-Morcillo et al., 2020) or overwhelming by others (Aldridge & McQuagge, 2021; Langegård et al., 2021):

It just...was hard. I felt like I had to teach myself most of the semester... It was just very overwhelming and we ...a lot of us struggled with that, especially. Um, so yeah, I had to make use of a lot of my own resources, um [...] because the lecture just wasn't sufficient enough in my opinion. (Student, USA, Aldridge & McQuagge, 2021)

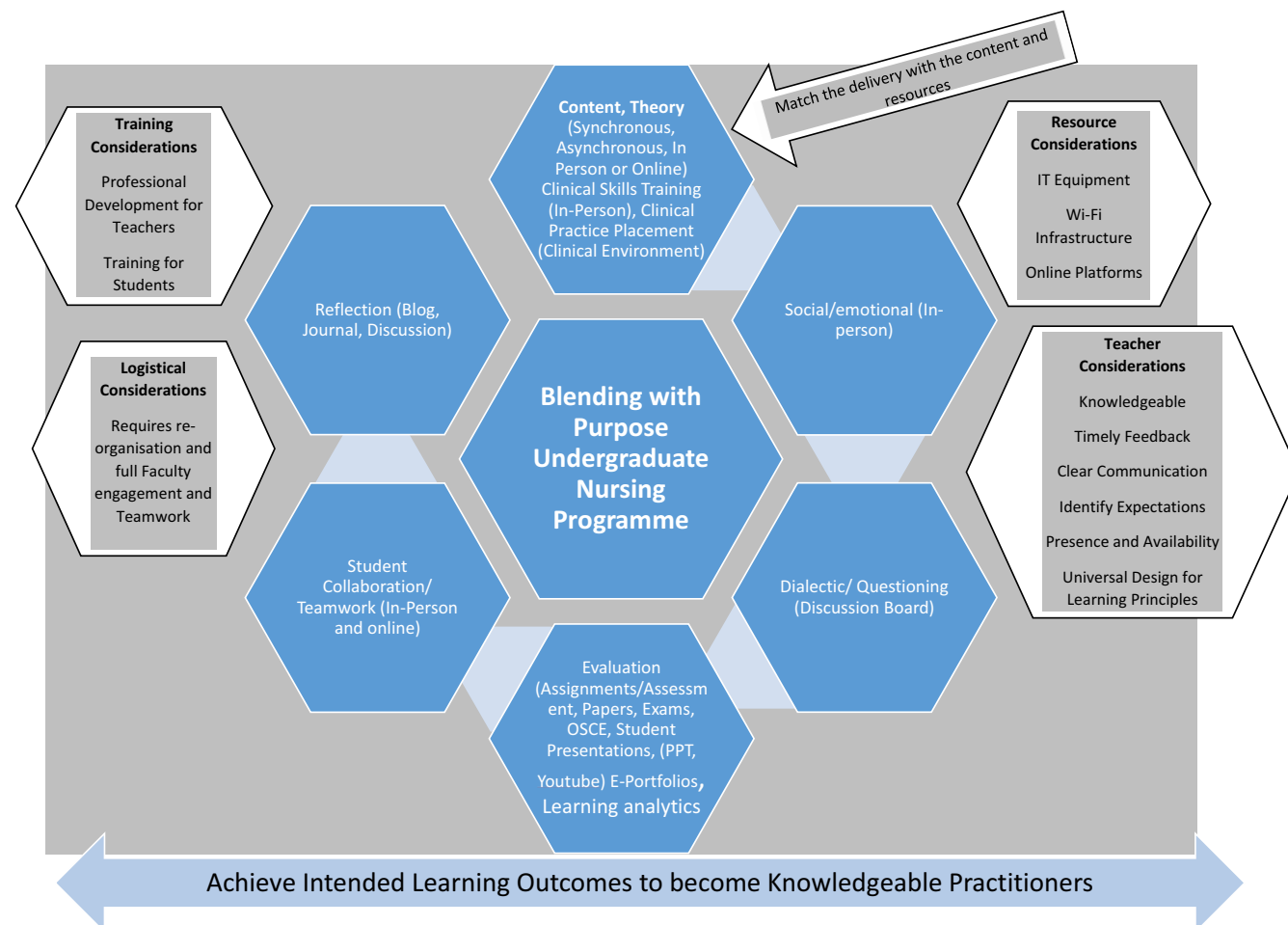


FIGURE 3 Blending with purpose: The multimodal model for undergraduate nursing programmes with considerations (Adapted from Picciano, 2009).

Students perceived assignment overload in the online environment (Bdair, 2021; Smith et al., 2021; Wallace et al., 2021) and a lack of communication and coordination among educators (Suliman et al., 2021; Wallace et al., 2021). Communicating effectively to students is imperative so they fully understand what is expected of them (Smith et al., 2021).

5.7 | Respects diverse talents and ways of learning

Transitioning to online learning helped students identify new ways of learning that they never realized were possible (Jiménez-Rodríguez et al., 2020). They became more creative, satisfied and confident with online learning over time (Bdair, 2021; Jiménez-Rodríguez et al., 2020; Ramos-Morcillo et al., 2020; Ropero-Padilla et al., 2021; Suliman et al., 2021; Wallace et al., 2021) and grades improved (Smith et al., 2021). Students appreciated being given time to adapt to a new way of learning (Aldridge & McQuagge, 2021; Ramos-Morcillo et al., 2020). The online skills learned during the pandemic were skills identified that would be useful for future nursing practice:

Due to this health emergency situation, teleconferencing with a patient now serves as an experience for the future (Student, Spain, Jiménez-Rodríguez et al., 2020)

Many educators used different media to accommodate different ways of learning (Aldridge & McQuagge, 2021; Bdair, 2021; Jiménez-Rodríguez et al., 2020; Kang et al., 2021; Langegård et al., 2021; Mambwe & Tembo, 2021; Ramos-Morcillo et al., 2021; Ropero-Padilla et al., 2021; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021). Learning theory online was seen as a better and more flexible way of learning, allowing students to learn at their own pace (Ropero-Padilla et al., 2021; Suliman et al., 2021). However, preferences for online or face-to-face learning varied among participants across all studies and a hybrid model of learning was suggested:

It is good to listen to the lecture and watch videos, but we prefer to have face-to-face discussions (Student, Jordan, Suliman et al., 2021)

A consistent theme that emerged across all studies in this review was that clinical placement was essential and practical skills need to

be learned in an in-person simulation environment as online learning was not sufficient to learn practical hands-on skills:

(...) "oh, this is practice" but it's not. It's clicking on a button to introduce yourself or to take the blood pressure and there's no emphasis on skills in my opinion. (Student, USA, Aldridge & McQuagge, 2021)

It really makes a difference to be in-person and hands-on with nursing classes... it's one thing to recite the steps of doing something, but it's different when you're actually doing it and it felt very hard and stressful to know that I wasn't able to practice it fully. (Student, USA, Wallace et al., 2021)

Students had self-efficacy concerns and worried that they were not competent practitioners due to a lack of face-to-face practical skill development (Mambwe & Tembo, 2021; Ramos-Morcillo et al., 2020; Smith et al., 2021; Suliman et al., 2021; Wallace et al., 2021):

I worry a lot that I may fail practical licensure examinations if I do not grasp the skill through practice in the skills laboratory.[...] In-person demonstrations are very helpful because they require return demonstrations. (Student, Zambia, Mambwe & Tembo, 2021).

6 | DISCUSSION

This systematic review of qualitative research synthesized what is currently known about the experience of nursing students of online learning during the Covid-19 pandemic. Covid-19 has highlighted social inequalities globally and while our synthesis identified similarities in the challenges experienced by nursing students, it also identified very differing challenges for some during the remote response to online learning. These challenges varied from basic resources such as electricity to knowledge of using online resources, reiterating that 'we're not all in this together' (Bowleg, 2020; Nolan, 2021; Sobande, 2020).

The synthesis demonstrated differing views and experiences, and differing learning preferences among nursing students, which is not unique to our study (Berga et al., 2021; Hall et al., 2012; Ilankoon et al., 2022; Jackson & Usher, 2022; Leidl et al., 2020). It must be noted that the students' experiences with online learning were during a remote response to a global public health emergency, without prior training, planning or organization.

One of the key findings in our synthesis and one that is essential for effective online learning (Mills et al., 2016) was the importance of the social presence of the teacher through effective communication and interpersonal relationships. Social presence relates to feelings of connection (Garrison & Arbaugh, 2007). Mills et al. (2016) found that online communication is an excellent medium for social interaction. Social interaction in live online learning meetings can create a sense of community and belonging for students, offset the loneliness of

learning at home (Kunaviktikul et al., 2022; Mills et al., 2016) and is recognized by many as key to student success (Barr & Tagg, 1995; Biggs & Tang, 2011; Chickering & Gamson, 1987; Fiock, 2020; Garrison et al., 2010; Kunaviktikul et al., 2022; Thirsk et al., 2023). Mills et al. (2016) found that lecturers were key to students' experiences and students identified that visual and regular contact with the lecturer through live online meetings assisted in clarifying content, getting invaluable immediate feedback and access to expertise. Live interaction with the lecturer is considered invaluable social presence of online communication (Mills et al., 2016).

The findings of this QES highlight the importance of well-designed online or blended learning programmes using digital tools that support interaction and teamwork. Recent studies support our finding that courses can be transformed into effective and efficient high-quality student-centred education, provided that various supporting means for online learning are actively implemented (Berga et al., 2021; Carolan et al., 2020; Kang et al., 2021; Kunaviktikul et al., 2022; Leidl et al., 2020; McGeehin Heilferty et al., 2021; Thirsk et al., 2023; Urban et al., 2022; Usher et al., 2022).

Our synthesis found that interactive elements such as problem-based learning, gamification or peer tutoring together with timely feedback can keep students engaged and motivated. This finding is supported by others (Fiock, 2020; Leidl et al., 2020; Sayyah et al., 2017) and has been described as a means of encouraging a deeper understanding of the material and improving performance (Ashwin et al., 2020; Carolan et al., 2020; Chickering & Gamson, 1987; Sayyah et al., 2017).

Undoubtedly and not surprisingly, this QES identified that clinical placement was essential and practical skills training needed to be delivered in an in-person simulation environment, as online learning was not sufficient to learn practical hands-on skills. Our synthesis highlights the importance of practical, traditional and a mix of online teaching methods to accommodate student-learning styles, life challenges and course requirements. The flexibility that blended learning approaches offer leads to improved student engagement than online learning solely (Leidl et al., 2020; O'Connor et al., 2011).

Carolan et al. (2020) suggest that there is an unprecedented opportunity to transform undergraduate nursing curricula, which requires collaboration among Higher Educational Institutions, Clinical Practice Partners and Regulatory Bodies. This can be achieved by drawing on the lessons learned from remote teaching during Covid-19 and traditional teaching to plan and organize teaching and learning effectively (Fawns et al., 2019; Hodges, 2020; Laurillard et al., 2018; McGeehin Heilferty et al., 2021; Moore et al., 2021; Salmon, 2013; Thirsk et al., 2023). Working together and sharing educational resources could enhance the quality of learning materials and allow educators more time to engage in meaningful online teaching methods to foster deeper understanding (Carolan et al., 2020). A literature review of blended learning approaches in nursing during Covid-19 pandemic by Ilankoon et al. (2022) also identifies that a blended learning approach to undergraduate BSc Nursing education using digital tools should be considered incorporating the best components to deliver the content.

7 | FRAMEWORK DEVELOPMENT

The findings of this QES clearly identify that there are benefits of including online learning and strengthening blended learning in undergraduate nursing programmes in the future. Carolan et al. (2020) agree that embracing online learning in undergraduate nursing programmes will free students from the geographical and time constraints of traditional face-to-face teaching. Moreover, blended learning approaches have been referred to as the best possible environment for improving student engagement, achievement and satisfaction (Berga et al., 2021; Dziuban et al., 2013; Leidl et al., 2020; Picciano, 2017) and have the potential to foster innovative and flexible learning opportunities (Berga et al., 2021). Prior to the Covid-19 pandemic, Leidl et al. (2020) conducted a scoping review of blended learning in undergraduate nursing programmes and found that there were a variety of blended learning approaches being used successfully, mainly in the classroom setting. While Leidl et al. (2020) advocate for distance learning for clinical skills training and there are interactive skills training packages available that may scaffold skills training (ADInstruments, 2019), it was clear from the powerful student views in our synthesis that there is no replacement for face-to-face clinical skills and practice placement learning. Similarly, prior to the Covid-19 pandemic, Bramer (2020) found that students preferred blended learning over solely online programmes, as the nursing profession relies on practical skill development through practical hands-on education.

Our synthesis identifies the challenges that students encounter that must be considered by faculty and Higher Educational Institutions before fully blending undergraduate nursing programmes. Our synthesis supports the incorporation of Hall et al.'s (2012, p. 121) Universal Design for Learning (UDL) Principles including: (1) multiple means of engagement (Stimulate motivation and enthusiasm for learning by promoting various ways of engaging in material), (2) multiple means of representation (present information in a variety of ways to support understanding by students with different learning styles/abilities) and (3) multiple means of action/expression (offer options for students to demonstrate their learning in various ways). From the key findings of this synthesis, we suggest an adaptation of a 'Blending with Purpose: The Multimodal Model' (See Figure 3) (Picciano, 2009, 2017). Picciano's model suggests that *'blending the objectives, activities, and approaches within multiple modalities might be most effective for, and appeal to, a wide range of students'* (Picciano, 2017, p. 178). The most important consideration is that pedagogy informs the teaching approach that will work best to support student learning (Picciano, 2017). We suggest the incorporation of key *training, logistical, resource and teacher* considerations (highlighted in Figure 3) for undergraduate nursing programmes *'where pedagogical objectives and activities drive the approaches, including online technology'* (Picciano, 2017, p. 178). This can assist leaders in nursing education to review nursing curricula and incorporating appropriate considerations for effective planning and implementation.

8 | STUDY LIMITATIONS AND FUTURE RESEARCH

The studies in this review represent undergraduate student nurses' experience of transitioning to online learning during the Covid-19 pandemic, where traditional delivery of content was rapidly transferred to an online platform without prior planning, organization or professional development for educators. Student nurses' experience of purposefully designed online programmes may elicit different results. A specialist librarian did not peer review the search strategy. Adhering to the PRESS criteria (McGowan et al., 2016) would have strengthened this review. The search strategy was limited to the English language. The experience of educators was not considered.

Future research should examine the professional development needs of educators to deliver blended undergraduate nursing programmes. Our adapted 'Blending with Purpose: The Multimodal Model' (Picciano, 2009) with key considerations should be pilot tested and outcomes evaluated to guide future programme delivery. Further research is required to explore graduates' views and experience of self-efficacy after online learning during Covid-19 pandemic.

9 | CONCLUSIONS

This QES using a BFFS has highlighted that online content can be transformed into effective and efficient high-quality student-centred education within blended learning undergraduate nursing programmes incorporating essential face-to-face and practical components. To achieve this, various supporting means for both students and educators are required. This could be achieved through our adaptation of the 'Blending with Purpose: The Multimodal Model' (Picciano, 2009) with considerations where the pedagogical objectives drive the activities and approaches.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE*): (1) substantial contributions to conception and design, acquisition of data or analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content.

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No conflict of interest has been declared by the authors.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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