Blended Learning Across the Nursing Lifespan: A Review of the Literature

Sarah Tougas 4th year BScN student; Keri-Ann Berga RN, MScN, IBCLC, PNC(C), MacEwan University

Abstract

- Blended learning (BL) uses a combination of online and face-to-face (F2F) instruction, with a reduction in face-to-face contact time. BL is intended to mitigate some of the challenges associated with online-only instruction, such as a lack of personalization, while improving flexibility when compared to F2F instruction.
- As the demographics of nurses and nursing students change, it is essential that nursing education is able to meet their needs. The purpose of this literature review is to examine the literature available on the use of BL as an instructional method for undergraduate, masters, and doctoral nursing programs as well as continued education of Registered Nurses (RNs) throughout their career.
- The results suggest that BL is at least as effective as traditional delivery methods and may offer additional advantages such as increased satisfaction and critical thinking for students, in addition to convenience and flexibility in delivery methods. More rigorous research of BL in the field of nursing is required to further explore the effects.

Methods

Literature Search

CINAHL Database was searched with the following terms: blended learning OR hybrid learning AND nurs*. Results were limited to the English language. 259 articles were retrieved. 85 met the criteria for inclusion based on abstract review. 40 articles met the inclusion criteria following complete article review. 4 main themes were identified: knowledge acquisition, satisfaction and self-efficacy, demographics/factors influencing success, and accessibility, cost, and workload.

Criteria for Inclusion

- BL must be used for Registered Nurses (RNs), undergraduate nursing students, masters level nursing students, or doctorate level nursing students
- The course must use both F2F and online methods for instructional purposes, with a reduction in F2F hours
- Grey literature was included to increase awareness of the use of BL in nursing education

Results

Knowledge Acquisition

Blended learning has been demonstrated to be an effective teaching method when compared to traditional teaching methods. In a systematic review, students were found to achieve similar or higher level of clinical skill when compared to traditional learning (McCutcheon, Lohan, Traynor, & Martin, 2015). Higher scores were noted in the BL group of a medication administration course for new nurses compared to the F2F group (Sung & Kwon, 2008). No statistically significant difference was found between BL and F2F groups taking undergraduate pathophysiology (Blissit, 2016), an undergraduate research course (Gagnon et al., 2013) , or a continuing competency pediatric fever management course (Jeong & Kim, 2014).

Satisfaction and Self-Efficacy (SE)

Students are generally satisfied with BL at the undergraduate level (Ireland et al., 2009; Salamonson & Lantz, 2005; Shorey et al., 2018), however, some students expressed a preference for F2F learning, which may suggest that support is needed to transition to the format (Blissitt, 2016; Salamonson & Lantz, 2005).

Satisfaction ratings for BL as a method of continuing competency were high (Crawford et al., 2013; Jeong & Kim, 2014; Parchen et al., 2016; Sung et al., 2008), as was use of BL in RN-BSN programs (Buxton et al., 2016), and master programs (Chmiel et al., 2017) . At the PhD level, satisfaction scores were initially low, but improved significantly following course changes(Newhouse et al., 2013).

SE is an important indicator as it may decrease anxiety in student clinical placements (Park et al., 2016). BL has been shown to be an effective method to improve SE in communication skills (Shorey et al., 2018), disaster management competencies (Chiu et al., 2011), abilities to perform patient-centered care (Johnson & Charlene, 2001) , and CPR skills (Park et al., 2016) . BL was as effective as F2F instruction for increasing SE of medication administration (Sung et al., 2008). SE of pulse measurement was unchanged following BL (Park et al., 2016).

Demographics and Factors Influencing Success

There was no identified relationship between age, hours worked, and satisfaction level of BL (Salamonson & Lantz, 2005). Time worked and attitude correlated with marks (Hsu & Hsieh, 2011), while age, gender, nursing experience, education, time management, study environment, and peer learning did not (Kumrow, 2007; Sherman et al., 2012) . Help seeking behaviours were identified as having a positive impact on BL grades (Kumrow, 2007) . It is suggested that higher-achieving students have developed alternate learning strategies and are less likely to seek help (Kumrow, 2007) , which may explain their relative preference for F2F learning (Salamonson & Lantz, 2005).

Accessibility, Cost, and Workload

Blended learning may help to remove some barriers to access, such as reaching students in rural areas (Bergstrom & Lindh, 2018; Burgess et al., 2006), improving recruitment into specialty areas of nursing (Ward et al., 2011) ,and improving access to evidence-based practice that is otherwise challenging to locate (Jeong & Kim, 2014; Stanley et al., 2008).

BL may be an effective tool in advancing the nursing practice, as BL improved access to an LPN to RN program (Thomas & Baker, 2008), and increased enrollment in a graduate level nurse educator course (Parker & Wassef, 2010). Further, students in BL appreciated the cost savings, ease of access, flexibility in scheduling, and ability to work at their own pace, especially for those who had additional obligations (Arving et al., 2014; Chiu et al., 2011; Crawford et al., 2013; Jonas & Burns, 2010; Sherman et al., 2012).

Creation of the course was noted to be time and labour intensive, however, BL was generally seen to be cost-effective or cost-saving long term (Chmiel et al., 2017; Ehrhardt et al., 2013; Parker & Wassef, 2010; Sung et al., 2008).

Level of Education	Undergraduate	RN	Master's	PhD
Educational topics delivered using Blended Learning	• Cardiopulmonary resuscitation (Park, Woo, & Yoo, 2016) • Mental health nursing (Rigby et al., 2012) • Pathophysiology (Blissitt, 2016; Salamonson & Lantz, 2005) • Patient-Centered Care (Johnson & Charlene, 2001) • Communication (Shorey, Siew, & Ang, 2018) • Cultural Competency (Aponte, 2012) • Research Ethics (Cho & Shin, 2014) • Nursing Ethics (Hsu & Hsieh, 2011) • Occupational Health (Ward, Beaton, Bruck, & de Castro, 2011) • RN to BSN (Buxton, Buxton, & Jackson, 2016; Posery & Pintz, 2017) • LPN to RN (Thomas & Baker, 2008) • Nursing Research (Gagnon, Gagnon, Desmartis, & Njoya, 2013)	• CVAD Care (Hainey, Green, & Kelly, 2017) • Medications (Sung & Kwon, 2008). • Critical Care Pharmacology (Sherman, Comer, Putnam, & Freeman, 2012) • Dysrhythmias (Brooks, Kanyok, O'Rourke, & Albert, 2016; Ehrhardt, Gormley, & Costanzo, 2013) • Pediatric Fever Management (Jeong & Kim, 2014) • Disaster Surge Training (Chiu, Polivka, & Stanley, 2011; Stanley et al., 2008) • End of Life Care (Andrew, 2011) • IV Therapy (Parchen et al., 2016) • Research Ethics (Cho & Shin, 2014) • Patient Oncology Navigation (Crawford, Brudnoy, & Graham, 2013) • Occupational Health (Ward, Beaton, Bruck, & de Castro, 2011) • Cancer Care (Arving, Wadensten, & Johansson, 2014) • Pediatric Pain (Jonas & Burns, 2010) • Nurse Prescribing (Burgess, Brooksy, & Ashworth, 2006)	• Women's Health (Rash, 2008) • Transition to the NP Role (Rossiter & Day, 2016). • Advanced Practice Nursing Program (Bergstrom & Lindh, 2018). • Health Care Economics (Kumrow, 2007) • Nursing Education (Parker & Wassef, 2010). • Semester of MN Program (Chmiel, Shaha, Schneider, 2017)	• Evidence Based Practice (Newhouse, Buckley, Grant, & Idzik, 2013) • PhD Program (Myers, Mixer, Wyatt, Paulus, & Lee, 2011)

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Conclusions and Future Directions

The effectiveness, satisfaction levels, and accessibility associated with BL are relatively established in the literature. Additional correlations between BL and knowledge retention (Blissitt, 2016), independent learning (Rigby et al., 2012), facilitation of communication (Shorey et al., 2018), development of metacognition and self-regulation (Hsu & Hsieh, 2011), learning readiness (Gagnon et al., 2013), and critical thinking (Chiu et al., 2011 have been suggested and merit further study. More, the impact of BL on students' willingness to ask questions and share experiences is controversial in the literature (Crawford et al., 2013; Chiu et al., 2011; Rigby et al., 2012; Sherman et al., 2012). While concerns with isolation have been addressed by some authors (Arving et al., 2014; Chmiel et al., 2017; Jonas & Burns, 2010), strategies such as weekly virtual office hours by instructors have met students' expectations for instructor contact (Newhouse et al., 2013). Courses should be developed to enhance the instructor's ability to help the students (Kumrow, 2007). Difficulty with technology was a barrier for some students (Arving et al., 2014), however, some studies noted an increase in technological skills resulted from the BL intervention (Buxton et al., 2016; Jonas & Burns, 2010). Faculty commitment and technical support is needed for students to be successful (Rossiter & Day, 2016).

In conclusion, BL is an effective instructional method that has the capacity to accelerate the nursing practice by reducing barriers to accessing education at the undergraduate, master, doctorate, or continuing competency level. Further rigorous research is required to establish potential additional benefits of BL including knowledge retention and impacts on clinical practice.

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Reference list available by request.