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Mobile Learning in Nursing:Tales from the Profession

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Abstract. During the last five years, research about mobile learning conducted with nurses, nurse supervisors and undergraduate students has provided insight into the complexity of this emerging issue, which has the potential to positively impact the workflow of nursing care and improve patient outcomes. Survey and focus group studies including confirmation of beliefs of nurses and nurse supervisors and interviews with representatives from nursing profession organisations were undertaken. Nursing student perspectives about mobile learning were also explored through an online survey. This paper draws on participant narratives from this research revealing 'tales from the profession', to demonstrate the complexity of installing mobile technology for learning at point of care for the benefit of healthcare professionals and their patients. This research demonstrates the urgency for introducing governance to provide guidance regarding safe and appropriate use of mobile learning at point of care. Teaching digital professionalism early in undergraduate nursing curricula and promotion of modelling digitally professional behaviour by nurses within healthcare environments is also imperative.

Keywords. Digital professionalism, mobile learning, mobile technology, nursing, point of care, social media, workflow.

Introduction

How long can healthcare professionals ignore the opportunity to advance nursing practice through real-time learning at point of care? This vexing question about accessibility and use of mobile technology at the bedside demands an answer. Nurses are highly flexible and pragmatic in responding to situations, finding workarounds for nursing practices that do not work as intended, become redundant or are viewed as onerous [1]. This cognitive and behavioural capability leads nurses to reconfigure and normalise new practices into nursing work when the benefits outweigh non-use [2]. Historically, nurses have embraced the use of mobile technology in healthcare environments. However, as 'tales from the profession' emerged, the deployment of mobile technology to enhance learning opportunities at point of care stalled [2].

Use of mobile technology for learning has disrupted traditional workflow patterns. The advent of real-time access to information has led to a range of systems and organisational responses that initially included the prohibition of mobile technology's use at the workplace and at point of care [3]. However, some healthcare organisations now ignore mobile technology use by specific health profession groups at the workplace

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[4]. Other groups, including nurses, believe they are still precluded from the benefits of legitimate mobile technology use when at work [3].

The absence of governance protocols relating to mobile technology use at a national and organisational level in Australian healthcare environments has generated confusion between its use for leisure and learning [5]. This lack of direction about when and how to deploy mobile technology in healthcare settings has historically blurred boundaries for health professionals, created adverse media attention, and negatively impacted the capability to incorporate new technology into workflows [6]. Recent investigation by the authors of the reasons for slow acceptance of mobile technology from nursing professionals and students while at the workplace, highlights an absence of capability and capacity to use mobile technology for learning at point of care. Drawing on a series of narratives from original research, this paper uncovers the additional complexity as expressed from within the domain of nursing regarding the installation of mobile learning at point of care.

1. Methods

The aim of the studies was to understand the *mobile learning paradox* of easy, timely, and convenient access to health information being more available away from the workplace, rather than when at work [7-9]. Mobile learning refers specifically to learning and teaching interactions that use mobile or portable hand-held devices such as electronic notebooks, tablets or smartphones [10]. Using a systems framework, the authors have researched the barriers, risks, challenges and benefits of mobile learning at point of care in two Australian States. Nurses and nurse supervisors participated in surveys and focus groups. Undergraduate nurses participated in online surveys. Individual interviews were undertaken with representatives from national nursing profession organisations (Table 1). Analysis was undertaken by coding 'meaning units' as open codes [11]. These were tabulated, labelled and reduced from open to axial and finally to selective codes to enable the sub-themes to be revealed. Themes were developed independently by two researchers and then cross-checked, to ensure validity. Information from synthesis of the studies themes is used to highlight the participant beliefs relating to mobile technology use for mobile learning. University Ethics Committee approval was gained prior to the commencement of the studies (Table 1).

Table 1. Summary of studies.

Method	Study group	Focus of systems framework level	Ethics approval number	Date of study
Online questionnaire	Nurse supervisors	Individual	H0012527	2014
Focus group 1	Nurse supervisors	Individual, organisation and systems	H0013729	2014
Online questionnaire	Nursing students	Individual, organisation and systems	H0013729	2014
Focus group 2	Nurse supervisors	Organisation and systems	H0013729	2015
Individual interviews	Nursing profession organisations	Organisation and systems	H0016097	2017

2. Results

In Australia, nurses and undergraduate students, through a range of attitudes and behaviours at systems, organisational and individual levels, are generally actively dissuaded from using mobile technology for learning or to advance nursing practice at point of care. The following sections provide narrative excerpts from these studies demonstrating participant beliefs relating to mobile technology use for mobile learning at point of care.

2.1. Nurse Supervisors

Through recorded and transcribed focus groups, the extent of the inability to access and use mobile technology was explored (H0013729). Nurse supervisors reported that due to organisational policy they were precluded access to digital resources to assist with guidance and mentoring of undergraduate students undertaking work integrated learning, while at the workplace [12]. Some participants demonstrated firm beliefs about the use of mobile technology and it became evident nurses are negatively enculturated about using mobile learning at point of care. As one nurse supervisor explained:

> Well, I don't use it when I'm at my workplace, we're not allowed to use it supposedly. We're supposed to have it away and not be in sight at all. Yet the doctors around have their mobiles and use them all the time, although sometimes I think if you were taking it out again to look up drug calculations and things like that but generally it's not supposed to be in sight. We did have a lot of people who were using it for the wrong reason. I think that sort of scarred and marked everyone down. So we haven't been able to use it (Focus Group 1).

Participants used human factor examples to rationalise why nurses and students were not sanctioned to use mobile technology for learning at the workplace. For example:

> I can see a student could be sitting there if they've got free time to look over their assignment or look up stuff. I think it would be okay for them to be looking up something relevant to what they're doing. No, not on Facebook but if doing something relevant and doing an assignment or just looking up something that's related to what they're practicing then I think it's fine (Focus Group 5).

Another participant indicated that learning in real-time was useful, however doubt about trust continued to be evident:

> They can give that patient really good education re that medication they're on or whatever discharge, information going home, whatever, they can be up to date. I can see that side as being a really good thing as well. But I can see them sitting in the office and sometimes not doing what they're supposed to be doing (Focus Group 2).

Nurse supervisors understood the importance of students developing digital professionalism while learning in real-time at point of care. One respondent, acknowledging that students mimic the behaviour of their mentors including situations where mobile technology was used for mobile learning, stated:

> [T]he other side to that is that, if we're modelling what we want them to do as RNs [registered nurses], then them having the capacity to be able to show and discern [that] is probably important as well (Focus Group 2).

The findings of the original focus group study were presented to a workshop of nurse supervisors who were involved in the first study. This group confirmed professionalism, accessibility (physical environment) and human factors were the highest priorities [2]. It also became evident that the concept of modelling digitally professional behaviour was emerging for nurses working in healthcare environments.

2.2. Student Nurses

The publication of the Australian Nursing and Midwifery Accreditation Council explanatory note regarding embedding health technology into undergraduate nursing programmes [13] provided further impetus to ensure students were educationally prepared to use mobile technology for learning prior to undertaking work integrated learning as part of their studies. To understand their perspective, undergraduate nurses were surveyed about their current and preferred use of mobile technology during and away from nursing practice. The online questionnaire included three free-text questions (H0013729) and provided opportunity for respondents to give further feedback about the barriers and benefits of using mobile technology. Similar to nurse supervisors, students provided a range of human factors that hindered access to mobile technology:

> Patients and their families could think that we are busy talking to our friends or doing something that is not related to caring patients. Also, nurses and doctors can waste their time even though they try to use mobile phones for right purpose (i.e., Facebook, Twitter).

Comments demonstrated students understood their decrement of mobile technology while undertaking work integrated learning [8]. One student stated:

> Some might use it for personal reason and get preceptors off side which would be a disadvantage for people that are using them correctly.

The historical failure to clarify the boundaries of digital professionalism is a legacy that continues to hinder access to mobile learning at point of care by student nurses.

2.3. Nursing Profession Organisations

Interviews of representatives from six nursing professional organisations provided further information about the lack of mobile learning at point of care (H0016097). Participants referred to the circumstances they had experienced as clinicians or educators, highlighting how technology is dynamically transforming the clinical and professional environment of nurses. Responses further demonstrated a lack of nursing influence in how workflows in healthcare environments were managed. One representative stated:

> I think there has to be some work about letting patients know I'm not on Facebook here, I'm actually you know, searching something, looking up a drug or whatever (Participant 2).

The deficit of nurse involvement as a primary stakeholder in shaping the access and use of mobile technology was evident [14]. This leadership gap, further perpetuated by the nursing professions' inability to provide clear direction within the Standards for Practice [15] or through the revised Codes of Conduct and Professional Boundaries [16], is cause for concern. The Australian Nursing and Midwifery Accreditation Council is the only national nursing organisation that provides unequivocal statements obliging the mandatory educational preparation of nurses regarding the use of health technology, which does at least demonstrate that nurses recognise the need for the nursing workforce to develop capacity and embrace its presence [13]. While nurses remain excluded at systems and organisation levels from input into reforms, such 'tales from the profession' at point of care, will continue to abound.

3. Discussion

A lack of supportive governance of mobile technology at a national level shapes organisational culture, individual cognition and behaviour, perpetuating negative attitudes to mobile technology use [17]. The 'tales from the profession' promulgated by nurses risk perpetuating the slow acceptance of mobile technology at the workplace. The narratives provide evidence that support for access to mobile technology for learning is inadequate. Deficiencies in confidence coupled with an inability to use digital technology and resistance by some nurses perpetuates professional reluctance, which will not be overcome, while mobile technology use remains an unsanctioned activity [12].

Nurses are the largest proportion of the healthcare workforce, are more visible, and have more consistent contact with patients and their families than any other health profession. The continuance of 'tales from the profession' that promote the misrepresentation of the potential of mobile learning both supports and enables missed opportunities for improving patient outcomes. During this research, nurses and undergraduate students reported that they believed colleagues and patients disapproved of nurses using mobile technology and that they feared being viewed as untrustworthy or accused of misuse. Respondents reported a desire to avoid the ire of their colleagues despite claiming they understood the boundaries of digital professionalism. Through their narratives, participants acknowledged the existence of an mobile learning paradox by identifying the benefits of the new mobile technologies side by side with their inability to access it [6]. The fear of peer disapproval and/or of breaching local culture or organisational policy was sufficient to inhibit its use. Nurses also perceived a deep inequity in access to mobile learning, providing examples of other health professionals they believed had unfettered use to it to seek and retrieve information [4].

The Australian National Digital Health Strategy [14] states there is a need for a workforce that can confidently use digital health technologies to deliver health and care. Strategic Priority 6 states that trust and confidence in digital technologies needs to be developed. The strategy identifies a need to integrate digital technology into normal workflows by supporting health professionals through supply of digital change champions, on-demand training, promotion of leadership opportunities and innovation within higher education institutions and in healthcare environments [14]. Successful implementation of this strategy would improve the capability of nurses to combat embedded negative 'tales from the profession' and enable positive cultural change. Current stereotypes of misuse and untrustworthiness from within the profession could be challenged if digital professionalism was incorporated earlier in undergraduate programmes. Overtime, installation of a standardised approach, supported by appropriate protocols, would enable a re-framing of the current, negative narratives. In the meantime, confusion regarding using mobile technology for leisure and learning and blurring of personal and professional lives will persist [17]. Disruption to workflows created by the inability to access mobile learning will remain until these issues are addressed at a systems, organisational, and individual level [9].

4. Conclusion

Learning in real-time at point of care is currently a casualty of governance arrangements that create confusion and cause a perception of double-standards regarding which groups of health professionals are permitted to seek and retrieve information at the bedside. This

uncertainty perpetuates complicity in the 'tales from the profession' that nurses tell that have become embedded as nursing folklore. There is a need to embrace the Australian Digital Health Strategy [14] to ensure nurses are part of the solution and influence the incorporation of mobile technology into workflows for learning at organisation, national and international levels. Since the protection of relationships within the health professions and with patients is the primary imperative, legitimate access to mobile technology must only occur within the boundaries of appropriate digitally professional behaviour. Since this is developing and can be specified in protocols, there is a missed opportunity for learning at point of care that is hindering the potential for mobile technology and mobile learning to contribute to improving patient outcomes and enhancing student learning.

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