Take 5: Designing and evaluating 5-minute eLearning for busy hospital staff

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Abstract

Introduction: Ongoing professional education is an essential activity to ensure that hospital staff are using the best available evidence to deliver healthcare. Hospital staff from a range of professional groups cite increasing work volume and being too time poor to complete or attend education. To address this issue, a new 5-minute online education format (Take 5) was developed.

Methods: A descriptive study using a short evaluation survey was undertaken at Royal Perth Hospital in Perth, Western Australia, to evaluate interprofessional healthcare staffs' levels of engagement with the new education format.

Results: The Take 5 education format facilitated the development of over 120 topics available via an intranet library page. During the study, it received 26,623 hits, averaging 19.3 visits per day. Topics were downloaded 45,611 times. Medication discrepancies (n = 1,326) and personal protective equipment (PPE) conservation (n = 1,115) were the most frequently downloaded. A total of 2,001 evaluation surveys were received, with nursing and medicine having the highest participation. The majority of staff (n = 1,895; 94.4%) rated the resource as having "good" to "high" quality content. Qualitative data showed that the topics were informative, easy to access and understand and perceived to help the participants change their clinical practice.

Conclusion: The Take 5 uptake has been strong and sustained, as highlighted by the substantive utilisation and evaluation. The concept was not designed to replace formal education but to act as an adjunct, providing key education to meet staff demands. It provided immediacy of information and quality evidence-based content and directed the learner to more formal learning content and resources.

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Introduction

There has been a rapid uptake in the utilisation of eLearning, as it allows users to self-manage their education needs and obtain automatic feedback/assessment, is cost effective and allows for widespread distribution of information (Dankbaar & de Jong, 2014; De Gagne et al., 2019; Lewis et al., 2014; Stevanovic et al., 2019; Vaona et al., 2018). For many years, eLearning has been utilised in the hospital setting for professional development and mandatory skills training of postgraduate nursing, medicine and allied health staff (Brooks et al., 2016; Lewis et al., 2014; Taveira-Gomes et al., 2016).

A review of the literature, which included studies from corporate, university and hospital settings, identified a variety of problems associated with the uptake of eLearning. Issues with eLearning included content relevancy, length of time required to complete training, insufficient work time to incorporate training, lack of awareness that eLearning modules were available and poor instructional design (Kim et al., 2017; Lewis et al., 2014; Rohwer et al., 2017; Stevanovic et al., 2019). These types of issues have been shown to greatly impact on eLearning engagement (Lewis et al., 2014; McNamara et al., 2016; Rohwer et al., 2017).

Microlearning is an innovative educational model whereby learning content is concise, enabling the delivery of small learning modules and skills-based activities (Buchem & Hamelmann, 2010). Microlearning facilitates self-directed continuous learning by providing education in small digestible amounts that usually take less than 15 minutes to complete.

Microlearning has been used as an educational strategy primarily in the academic environment for student learning. A scoping review on health professional student education using microlearning was undertaken by De Gagne et al. (2019). Within the 17 studies included in the final review, microlearning was used to deliver content to medical, nursing, biomedical, dentistry and pharmacy students. These studies used a variety of delivery modes, such as short message service (SMS), podcasts, social media and microblogging, to disseminate educational content to students (De Gagne et al., 2019). Findings suggested that microlearning can improve knowledge, confidence and skills development (De Gagne et al., 2019). The full potential of microlearning as a strategy to support continuing education in the acute hospital workforce requires further exploration.

Nursing educators at Royal Perth Hospital (RPH) reported increasing difficulties with clinical and non-clinical staff engaging in professional development and continuing education. Competing workload priorities meant that face-to-face classroom education was attracting very small numbers of participants, resulting in substantial numbers of staff missing key clinical, corporate and safety education sessions (May, 2019).

An appraisal of local online education at RPH showed that hospital staff were either unaware the content was available or it was considered irrelevant or too long by end users (May, 2019). Subramanian (2017) acknowledged the shrinking attention span of users, explaining that poor attention span is often accompanied by short, intermittent bursts of high audience attention. Based on this, a new educational format was developed specifically to engage clinical and non-clinical staff in continuing education.

The aim of this study was to design and market a new education format to address the learning needs of clinical and non-clinical staff in an acute tertiary hospital setting and to evaluate the new learning format with regard to usability, accessibility and satisfaction with resource content and delivery.

Methods

Design

A descriptive mixed methods study was undertaken to evaluate the Take 5 concise online educational resources. This project was undertaken with approval as a quality improvement activity from the Clinical Safety and Quality Governance Committee of Royal Perth Hospital.

Population

The initial target audience for the resources included all clinical and non-clinical hospital-based staff at RPH. However, as the concept became more widely known, other public hospitals in Western Australia asked to participate, resulting in five public hospitals providing utilisation and evaluation data.

Intervention development process

The Take 5 format was designed with the following governing rules:

1. Content should be concise, using no more than five PowerPoint slides.
2. High quality evidence-based content had to be distilled into digestible portions. This meant including only core information with links to supporting resources for further information.
3. Content was subject to peer review, utilising existing clinical and education governance structures prior to publishing (Buchem & Hamelmann, 2010; Subramanian, 2017).

Resource content was developed based on organisational priority areas and was initially undertaken by the primary author. However, with the rapid uptake of the concept, it became necessary to coach and support hospital content experts who expressed an interest in developing additional topics. Prior to release, all topics were subject to a peer review process to ensure the accuracy of information and that content was consistent with evidence-based clinical practice standards and/or hospital policy.

Marketing and accessibility

Marketing strategies favoured by the advertising industry were employed to engage the hospital staff. The name Take 5 was chosen to increase the appeal of the education modules, with the tagline "Five minute education for busy people". Existing communication portals, including intranet news feeds, organisation-wide emails, an electronic organisation-wide newsletter, a smartphone application and word of mouth, were all used to promote the modules. Brand identity was a critical factor, with in-house graphic artists designing a logo, which featured prominently in all promotions (see Figure 1).

Figure 1

Take 5 Logo

To facilitate easy access by staff, Take 5 was accessed from the main page of the hospital intranet portal or via a smartphone application, enabling the information to be accessible whenever it was required by the staff member.

To encourage engagement from all hospital professions, the resource was not categorised based on professional group. Instead, topics were grouped under content headings: clinical care; non-clinical Take 5s; professional development & personal growth; infection control; behavioural management and mental health; blood and blood products; medication safety; cognitive impairment, delirium and dementia; Take 5 information for managers.

The resource began with six topics, chosen to address specific organisational requirements, including:

- difficult conversations with colleagues
- managing adverse drug reactions
- goal setting
- freedom of information
- risk assessment for intravenous cannulation
- vancomycin administration.

To increase the profile of Take 5, single topics were periodically promoted across the organisation via email to staff and publicised in the hospital's electronic newsletter.

Data collection

Evaluation data was collected between February 2017 and February 2021 utilising an online survey. At the end of each topic, the reader was invited to complete an optional online 60-second multiple-choice format survey consisting of five questions. This survey sought information on the user's professional group, topic accessed, satisfaction with the content and the chosen mode of delivery. It also included an opportunity to provide free-text comments, including suggesting new topic areas to be included.

Data analysis

Data from the survey was analysed using Statistical Package for Social Scientists (SPSS) version 24. The qualitative comments from the evaluation surveys were reviewed separately by two of the authors (JY and NM), who independently and inductively grouped comments into categories by identifying common key words. Any disagreements in the categories were discussed until consensus was reached.

Results

The results are presented in two sections: 1) data obtained from the analysis of the website downloads and 2) data obtained from the online evaluation surveys.

Website downloads

Over a 4-year period, a total of 26,623 visits to the Take 5 intranet page were recorded, with an average of 19.3 visits per day. Staff made 45,611 downloads. Ten topics were identified as being the most frequently downloaded, and they accounted for 21% (n = 9,525) of downloads (see Table 1). Medication discrepancies, conservation of PPE, personal safety and difficult conversations accounted for 10.1% (n = 4,598) of all downloads.

Table 1

Frequency and Percentage of the Top Ten Take 5 Topics Downloaded by Staff

Topic	n	%
1. Medication discrepancies	1,326	2.9
2. Conserving PPE supplies	1,150	2.5
3. Personal safety	1,111	2.4
4. Difficult conversations	1,011	2.2
5. Managing drug reactions	916	2.0
6. Goal setting	864	1.9
7. Understanding anxiety disorders	859	1.9
8. Code blue (MET)*	859	1.9
9. IV cannula risk assessment	727	1.6
10. Code black (violence and aggression)	702	1.5
Total	**9,525**	21.0

* Code blue refers to medical emergency team response procedures

Evaluation surveys

In total, 2,001 evaluation surveys were completed. The majority of participants who completed the survey were nurses (n = 1,307; 63.2%) followed by medical staff (n = 215; 10.7%) (see Figure 2). The remaining participants included project staff, technicians, managers, patient support staff, etc. (n = 479; 24.2%).

Figure 2

The Frequency and Percentage of Respondents Who Submitted an Evaluation by Professional Group

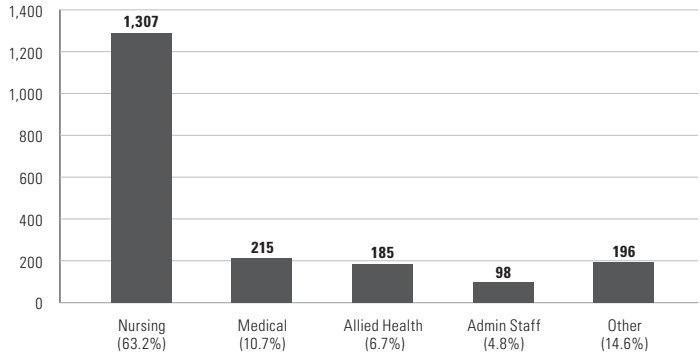


Table 2

The Frequency and Percentage of Top Ten Take 5 Topics Evaluated

Topic	(n)	%
1. Vancomycin	116	5.8
2. Difficult conversations	106	5.3
3. Personal safety	98	4.9
4. Code blue (MET)*	94	4.7
5. Managing drug reactions	91	4.5
6. Understanding anxiety disorders	88	4.4
7. Detecting delirium	67	3.3
8. IV cannula risk assessment	57	2.8
9. CPAP BiPAP patient assessment	55	2.7
10. Needle stick injury	55	2.7
Total	**827**	41.3

* Code blue refers to medical emergency team response procedures

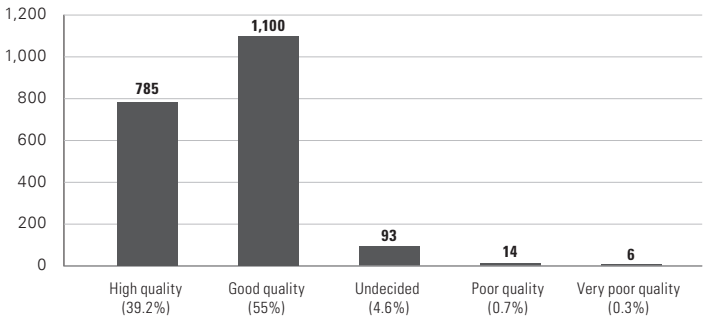
Professional Group

Evaluations of the top 10 topics listed in Table 2 accounted for 41.3% (n = 827) of all surveys received. The topics on vancomycin administration (n = 116) followed by difficult conversations with colleagues (n = 106) were the most frequently evaluated.

Staff were asked to rate their satisfaction with the Take 5 topic that they accessed. Results showed that of the 2,001 surveys completed, the majority (94.4%) of participants rated the resource as having good quality content (n = 1,100; 55%) or high-quality content (n = 785; 39.2%) (see Figure 3).

Figure 3

Quality Ratings of Take 5 Topics



Regarding communication about the resource, 64% (n = 1,277) of participants were informed via email followed by 31% accessing the intranet page (n = 619), with the smartphone app only being used by five people.

A total of 369 comments were received, and they were categorised into the following four themes: ease of access and usability, enabling practice change, additional information required or suggested new topics. Examples of comments are captured under each heading, along with the participant's professional group and topic evaluated for each.

Ease of access and usability

Participants commented that they could quickly download and share topics:

> *Concise, quick and very useful. I'm pregnant and will have the flu vaccine now [that I am] more reassured. Thanks for this information.* (Medicine: Surviving the flu season)

> *Clear information on penicillin allergy. Good to see inter-hospital collaboration [in developing/sharing these resources].* (Pharmacy: Penicillin allergies)

> *The detecting delirium topic was very helpful. It helps to quickly explain the needs of the patient.* (Patient support services: Detecting delirium)

Enabling practice change

Participants stated that they were provided with new knowledge that outlined correct procedures or reinforced the reader's existing knowledge and understanding:

> *This has been one of the most informative and relevant Take 5s to date! On the day of the Take 5 release, our ward had two blood transfusion incidents (one blood wastage and a transfusion reaction), both of which were not handled well. This information was implemented immediately by sharing the Take 5 at handover and by displaying some laminated pages for all staff to see. The information was essential and to the point, which was valuable when delivered in such a concentrated session. Thank you!* (Nursing: Patient transfusion reactions)

> *It's important not to just assume that all cognitive impairment is always due to dementia.* (Medicine: Detecting delirium)

Additional information required

Seven participants commented on adding more images or photos to the resource or tailoring the information to different professions.

> *The content was very good. However, I feel that an image of the stages of pressure injury would have been beneficial.* (Nursing: Pressure injury stickers)

> *Useful general advice but would perhaps be more useful tailored to specific groups (e.g., one for nurses, clerical staff, doctors).* (Medicine: Time management tips)

Suggested new topics

Topics for future Take 5 education were also identified by participants and included suggestions such as understanding depression or anxiety, professional conduct, reducing x-ray imaging for back pain presentations and new IV pump management.

> *Understanding depression or mood disorders is also needed.* (Nursing: Understanding anxiety disorders)

> *A topic [that] would be suited for the Take 5 format is professional conduct, accountability and responsibility by senior staff.* (Nursing: Difficult conversations with colleagues)

While the majority of evaluation comments received were overwhelmingly positive (n = 354; 96%), the remaining comments focused on when the reader felt the Take 5 format looked too visually crowded, with too much information, or the information not being profession specific.

I found this content very busy. (Nursing: Pharmaceutical waste management)

Jamming too much [information] onto each slide defeats the purpose of Take 5 being easily digestible. (Allied health: Improving the patient experience)

This Take 5 is only relevant to doctors, as allied health staff do not have access to the [online clinic letter] system. It should be added to the title of the Take 5 that it is relevant only to medical staff. Thanks. (Allied health: Accessing clinic letters online)

Discussion

The Take 5 education concept was found to be a useful model for the delivery of adjunct education to staff who are too busy to attend formal learning. There are several factors that have contributed to the successful uptake of the concept. Firstly, accepting staff criticism of existing online learning and interpreting this as an opportunity to improve the educational resources available was critical to the development of the Take 5 concept. This understanding led to the development of a sustainable, voluntary eLearning model, which allowed hospital-based educators and staff to deliver education content using a new delivery format.

Utilising microlearning concepts was key to developing an alternative educational engagement strategy such as the Take 5 model (Buchem & Hamelmann, 2010). Lessons learnt from studies undertaken in the academic area highlighted the benefits of providing bite-sized information to students (De Gagne et al., 2019). Unlike these studies that chose to deliver student learning via new electronic platforms, such as microblogging, texting and case-based gaming devices, the current study provided information via simple five-slide PowerPoint presentations. This allowed all staff with computer access to review or develop 5-minute learning content.

A group of UK geriatricians with an interest in clinical education developed an education format called Mini Geriatric elearning Modules (Mini-GEMs), which also utilised the concept of concise eLearning via video (Garside et al., 2018). This site promoted geriatric medicine topics, which were uploaded to YouTube. Like Take 5, Mini-GEMs also offer distilled PowerPoint content limited to approximately 5 minutes. This format differs slightly from the Take 5 delivery method as it uses a narrated slideshow in video format. Because Mini-GEMs are accessed via YouTube, global reach is provided to both health professionals and the general public. A limitation of the Take 5 library, due to organisational web security, is that it cannot be accessed publicly.

Mini-GEMs education achieved over 10,000 voluntary views over an 18-month period (Garside et al., 2018), and while the Take 5 site received a higher volume (14,079 visits) for this same timeframe, it should be noted that the focus of Take 5 education is much broader than the geriatric medicine focus of the Mini-GEMs.

A second factor to consider in the successful adoption of Take 5 education is the branding of this educational product, which appears to have resonated with the hospital staff it targeted, as evidenced by their sustained visits and downloads from the intranet site and their evaluation comments. The branding, coupled with a strong in-house promotional campaign, ensured that staff were made aware of the 5-minute learning format. This appeared to be an important aspect of the success of the resource, which encourages educators to be more proactive in promoting educational opportunities and resources to achieve higher engagement.

A third factor in the success of the resource was ensuring that learners were willing and motivated to engage with online learning. We opted not to declare Take 5 as mandatory, instead focusing on providing content that end users requested and ensuring that the concise format met their needs. Research has shown that allocating mandatory status alone is unlikely to improve poor educational uptake (Brooks et al., 2016). The audience will only engage willingly if the eLearning product is perceived as relevant, flexible, high quality and meeting their needs (Guiney, 2015). Interestingly, the uptake via the smartphone app for this sample was found to be negligible. The poor uptake of this mode of delivery may possibly be due to a combination of the functionality of the chosen application, the much smaller screen size when education is viewed on a smartphone or the impact on personal data download limits. The reasons for the failure of this strategy needs to be further explored.

Like Garside et al. (2018), providing editorial support and coaching for emerging authors, educators and content developers was found to be an important component. There were two main areas where RPH staff required assistance when writing for the resource. Specifically, some content experts found it difficult to distil education into the five-slide format. Others used complicated writing styles that did not meet the target audience needs and, therefore, required editorial support.

Over 4 years, the dissemination of the Take 5 model has expanded to include other West Australian public hospitals. All aspects of the model, including the logo, templates and access to topic content that was already developed were freely shared by RPH across sites. Sharing reduced content duplication and fostered collaboration between hospitals, resulting in staff being able to access all Take 5 topics, regardless of which organisation developed them.

The Take 5 format has now been shared nationally and internationally, with requests accepted from Australian eastern states and New Zealand hospitals (Paull, 2017; Zaman et al., 2018).

Limitations

Convenience sampling was used, with staff who accessed a Take 5 topic asked to complete a short survey. A sampling frame was not used, given the heterogeneity of Take 5 topics

developed and the uncertainty regarding which hospital staff would use the resource. Given the strong uptake by many professions, the evaluation surveys are being reviewed for rigour and validation.

Conclusion

The Take 5 uptake has been strong, sustained and has grown over time, as highlighted by the substantive utilisation and evaluation of topics. It should be noted that the concept was not designed to replace formal education but to act as an adjunct for providing key education content that meets staff demands. It provided immediacy of information, maintained quality evidence-based content and directed the learner to more formal learning content and resources.

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No funding was received for this study, and the authors declare no conflicts of interests.

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