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An eLearning Approach for Training Healthcare Workers in Long-Term Care: The Strengths, The Shortcomings, The Reality

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Abstract

Objectives

Bruyère Continuing Care's Learning Department and the Bruyère Centre for Learning, Research and Innovation in Long-Term Care designed and delivered an eLearning approach to training staff in order to meet the Ontario Government's training expectations and comply with the new regulatory Long-Term Care Homes Act, 2007. This project investigated how the content, delivery, structure and service of eLearning modules impacted healthcare workers' learning outcomes and transfer of knowledge.

Methods

Seven focus group interviews were held with a total of 36 Registered Nurses, Registered Practical Nurses, and Personal Support Workers from two long-term care facilities. Interviews were audio recorded, transcribed, and analyzed using qualitative methods and the W(e)Learn framework as a quality standard.

Results

Findings revealed participants enjoyed the modules and found them relevant. Healthcare workers reported difficulty completing the modules during work because of workload and technical challenges. Healthcare workers provided examples of new information they learned regarding resident care. Healthcare workers said they could not always transfer what they learned because they didn't have the time or resources to care for residents the way the modules promoted.

Conclusions

The findings provided suggestions on how to improve the content, delivery, structure and service of the eLearning modules. Healthcare workers perceived a disconnect between standards of care for best practice outlined in the modules and what they could implement in reality due to lack of resources and time. The findings provide crucial information regarding the use of eLearning in long-term care.

Keywords: Long-Term Care; Healthcare workers; eLearning modules; Healthcare training; Nurses and personal support workers; Francophone; French

Introduction

The Bruyère Centre for Learning, Research and Innovation in Long-Term Care's (LTC) Annual Education Day is a regional event held in Ottawa, Ontario, Canada to provide healthcare educators with tips, tools and knowledge to improve the design, delivery and evaluation of education within LTC homes. An informal needs analysis conducted at the 2012 event revealed many participants felt overwhelmed in meeting the Ontario Ministry of Health and Long Term Care's (MOHLTC) new mandatory training requirements for LTC staff. Participants reported that due to lack of time and resources, meeting these regulations was a challenge.

Some of the participants felt that designing and delivering training in accessible eLearning modules was a viable approach to conveniently provide authentic information requiring less time away from vulnerable residents*.

In previous studies in LTC facilities, healthcare workers recognised and appreciated the flexibility and convenience online learning afforded and found eLearning to be a successful approach in helping them achieve the learning objectives the resource was designed to meet [1-8]. In addition to providing information to improve existing and future eLearning modules in LTC, and facilitating meeting MOHLTC training regulations, it was hoped the knowledge and skills healthcare workers acquired would be transferred to the workplace and improve resident care.

The purpose of this study was to explore how an eLearning approach impacts healthcare workers' learning outcomes and transfer of knowledge. The eLearning approach included the following seven modules accessible from home or work through the organization's Learning Management System, in both English and French:

- Module 1 - (three parts) Home Mission Statement, Residents' Rights and Whistleblower Protection
- Module 2 - Pleasurable Dining
- Module 3 - Abuse and Neglect
- Module 4 - Least Restraint, Last Resort
- Module 5 - Protect Residents, Prevent Falls
- Module 6 - Continence Care and Bowel Management
- Module 7 - Pressure Ulcer Prevention in LTC

Module 1 was made available to staff in January 2013. The remaining modules rolled out over the following months with the final Module 7 released in June 2014. The modules varied in length from 20 to 60 minutes (Module 1 has three topics combined which increases its length). The modules promote best practices and were developed using many best practices

sources and subject matter experts.

Methods

Conceptual Framework

The W(e)Learn framework [9,10] was adopted to guide the evaluation of the eLearning approach. Developed through collaboration among educators, academics, healthcare professionals, and industry, W(e)Learn reflects expertise in curriculum design, psychopedagogy, and evaluation methods. W(e)Learn outlines four critical dimensions of online education-structure, content, media, and service-and is grounded in socioconstructivist theories and interprofessionalism (see Figure 1). W(e)Learn is intended to elicit four levels of outcomes, the pinnacle of which is organizational change and the resulting improvement in care delivery that promotes patient well-being (for an interactive version visit <http://www.enovativesolution.com/WeLearn/>).

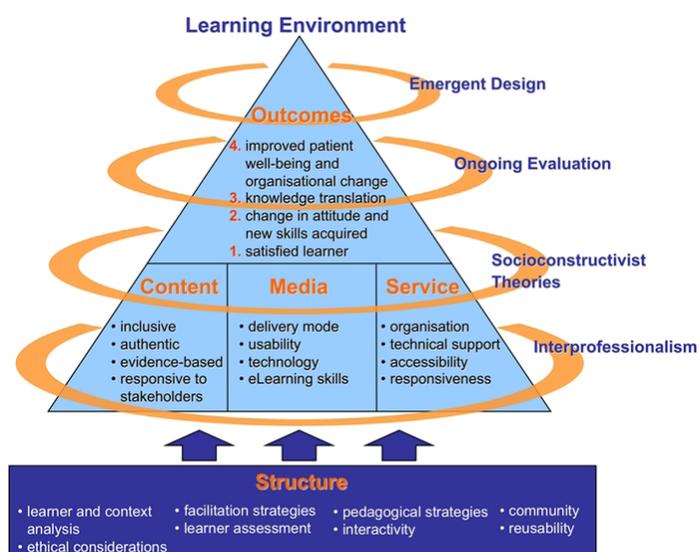


Figure 1. The W(e)Learn Framework for Online Interprofessional Education.

Research Question

The research question addressed in this study was: how do the content, media (delivery), structure and service of eLearning modules impact healthcare workers' learning outcomes and transfer of knowledge?

A qualitative research design was used to evaluate the eLearning approach in order to attain rich data to understand the strengths and areas that need to be improved.

Focus Group Interviews

The purpose of the focus group interviews was to gain greater insight into the learning experiences of healthcare workers with regards to the eLearning approach. Seven focus group

*Patient(s) are called resident(s) in long-term care

interviews (five at one LTC site and two at another) were conducted in October to November 2014 with homogeneous groups of healthcare workers. A total of 36 staff took part (22 Personal Support Workers (PSW)* and 14 Registered Practical Nurses (RPNs), and Registered Nurses (RNs). There were 29 participants at site one and 7 participants at site two. The breakdown of participants in the seven interviews was as follows:

1. Focus Group 1- 5
2. Focus Group 2- 2
3. Focus Group 3- 5
4. Focus Group 4- 7
5. Focus Group 5- 6
6. Focus Group 6- 7
7. Focus Group 7- 4

The interviews ranged from 37:54 to 1:16.25 in duration with the average interview being 46 minutes. Six of the seven interviews were approximately the same length. However, in one interview, two of the seven participants arrived half way through the interview. Once all the questions were adequately covered in the interview, the five participants who arrived on time departed and the two participants who arrived late were invited to stay to answer the questions they missed. Therefore one interview was much longer than the other six.

The interviews were guided by a set of open-ended questions influenced by the W(e)Learn Framework and the W(e)Learn Program Evaluation Survey (see appendix A). The interviews were audio recorded (with permission) and transcribed verbatim. All interviews took place during the workday or at the beginning or end of shifts. Two focus group interviews were conducted in English and five in French. Two interviewers were involved in conducting the seven interviews. One interviewer conducted the two English interviews and the other interviewer conducted the five French interviews. A bilingual PhD researcher sat in on all seven interviews to ensure consistency between and among interviews. At the beginning of each interview, participants were briefed on the rules of a focus group and informed that their information would be used anonymously in any reports and publications. Participants read and signed a consent form prior to the interviews taking place.

Data Analysis

Qualitative data analysis was guided by Merriam [11] and Bogdan and Biklen [12]. The researchers were interested in understanding how healthcare workers made meaning of a situation or phenomenon. The meaning was mediated through analysis of the data and through numerous discussions among

the researchers and practitioners in the study. The strategy was inductive and the outcomes descriptive [11]. Data was inductively analyzed to identify recurring patterns or themes which emerged under the facets of the W(e)Learn framework highlighting the components of effective eLearning. Open coding of the text was performed by hand. After a preliminary list of codes was developed, the transcripts were coded a second time to group common codes together and form themes. The coding was reviewed several more times to ensure that no new codes emerged from the data.

The data was assigned to categories guided by the W(e)Learn framework variables (content, delivery/media, structure, service and outcomes) to provide rich, detailed, and comprehensive information that addressed the research question. Any disconfirming information or themes are included in this paper in order to confirm validity.

Relevant information from the emerging themes was used to weave a story from the healthcare workers' perspectives portraying current strengths, barriers, and challenges, with regard to the LTC eLearning approach. Direct quotations were used throughout the report to allow healthcare workers' voices to be heard and to obtain objective evidence regarding their perceptions of the eLearning approach.

Ethics

This project received ethical approval from the Bruyère Continuing Care Research Ethics Board.

Results

The findings from the focus group interviews are chronicled in the ensuing sections. The findings are organized under the facets of the W(e)Learn framework: content, media, service, structure and outcomes.

Content

Healthcare workers' responses with regard to content fell into five themes: Relevance, Length, Level of Difficulty, Best Practice versus Reality, and Confusing. These themes are discussed in the ensuing sections.

Relevance

Healthcare workers stated the modules covered topics pertinent to residents. One nurse elaborated, "For example falls happen pretty often here. If we can find ways to prevent falls that is pertinent." A second nurse agreed, "The content was applicable. Pressure Ulcers, Incontinence, Restraints, all of it was applicable." One healthcare worker stated she enjoyed the modules because the content was educational. In her words, "You are using real people and real situations." Another said she appreciated the content's simplicity. She explained, "We're taken right back to basic principles like feeding. With unregu-

* PSWs are an unregulated workforce in Ontario.

lated staff we insist things are done a particular way. It reinforces how it should be done and the policies.”

One nurse appreciated that the modules reminded her of the importance of being kind to the elderly. She elaborated, “Sometimes we don’t realize what we are doing [when we] tell patients to wait. It also reinforces that we have to be careful with body language.”

Several nurses noted the modules reinforced what they were doing in practice and provided a rationale for enforcing policies and procedures with PSW staff. One nurse shared, “It gave you credibility.” Another nurse explained, “The e-module reinforces what we learned in school. For example, make sure when you are feeding the resident, the head is straightforward at 45 degrees.” Similarly, a nurse stated, “Not only are the modules educational, they reinforce what I already know and make me feel good.”

Length

Although some healthcare workers were happy with the length of the module, many stated they found the modules long. One explained, “The problem is the time and length. Sometimes, it’s too long”. One healthcare worker expressed her experience with the modules: “When the person reads the module, if you finish reading you can’t change pages until the person is done talking. I found that a bit long.” The nurses agreed with the PSWs with regard to the modules being too long. One nurse stated, “It was too long.”

Level of Difficulty

Several healthcare workers reported they found some of the modules difficult. One reason was because the questions in the quizzes were so similar it made it difficult to identify the correct answer. One healthcare worker stated, “You have to pay attention”. One healthcare worker communicated that although she didn’t find the modules difficult, she knew some of her colleagues did. In her words: “Many of them are not great at computers. Very often I helped when I had time. Even to enroll or find a module.”

Healthcare workers complained that if they didn’t understand the question or know the answer, sometimes the program would not allow them to proceed. One healthcare worker explained, “You could be stuck there for half an hour. That is time you don’t have.” The healthcare workers shared coping strategies they developed. “We had to write a lot of notes. It was probably cheating but that was the only way we could remember.” Another PSW elaborated, “At one point even the nurses did not know the answer.” One healthcare worker added, “It was tricky. You think it is one thing but it’s something else.” Her colleague agreed and continued, “You are like ‘Oh my god, you would never think that is the answer.’”

In one of the nurses’ interviews, a participant agreed with

the PSWs that some of the modules were difficult. One nurse shared, “There was a [drag and drop activity]. It was a challenge. It was difficult.”

Best Practice versus Reality

Several healthcare workers reported that the best practice content in some modules did not always reflect their reality in the workplace. One participant commented, “... all the information was interesting because it is related to the residents. But when we compare the information in the modules with what we see in the units, they are two different things”. In each example, the reason they reported they did not, and could not, implement what the modules were promoting was due to lack of time and human resources.

The conflict between the best practices the modules promoted and what the healthcare workers were able to do in practice was a source of frustration in all seven interviews. One of the most consistent examples of this was regarding information in the module on pleasurable dining

The modules were just not realistic. The meals module, [informs us] we should begin by giving the resident juice, then salad, soup, milk, the main meal, dessert, milk, tea or coffee. But the residents show up

“I want my coffee, I want my tea”. You can’t say “No, I have to give you that last.”

Although healthcare workers got through the modules by providing the required answers to quizzes, they admitted they continue to serve the food according to their judgment and what they perceive to be the needs and desires of the resident. One healthcare worker explained, “We can’t start with juice when we know that after they won’t eat. If we start with the main meal, we at least know that they ate their main meal.” Another healthcare worker pointed out, “The modules suggested we feed one resident at a time. But in reality, we don’t have the time. In the real world, it doesn’t work.”

In addition, healthcare workers pointed out that the modules stated they should look at, and talk to, the resident when they were feeding them. However, they explained that often they were feeding five residents at a time as well as getting residents up and to the dining room. One PSW specified, “Even when feeding them, you have to say hurry up, hurry up because you don’t have time”.

When asked if they learned anything that they implemented into practice, one healthcare worker clarified, “We are doing some of it but we are not able to do all of it. But at least 75% of it we are using.”

Confusing

Healthcare workers pointed out they found some of the infor-

mation in the modules confusing. One example provided was finding the correct balance between restraining the resident and having them fall. This organization and most LTC homes have a least restraint policy on restraint use. Healthcare workers reported that often the resident pushes their call button because they need to go to the bathroom. Sometimes there are just one or two healthcare workers on duty and both are busy. If the resident is not restrained and feels they can't wait, they may get up and fall.

One healthcare worker highlighted, "The restraints module said "...ok, we don't do restraints but when you are in this situation you do." There was a lot of confusion; what is a restraint and what isn't? Many healthcare workers agreed the restraints and falls modules were "ambiguous." One healthcare worker agreed and purported, It's complicated...and we say that he did not fall. Is it a fall?

Another aspect of the eLearning modules the healthcare workers consistently identified as confusing was answering quiz questions. Several complained that the answers were tricky and often very similar. Healthcare workers stated that often they would have to try five or six times before they finally got the correct answer and were able to continue on in the program. Moreover, healthcare workers stated they often didn't agree with the answer that was 'correct' but just gave the system what it wanted in order to be able to continue and finish the module. One healthcare worker clarified, "Sometimes it has to do with the way the question is asked [that was confusing]. You think it's the right answer but it's not."

Media

Healthcare workers' responses with regard to media fell into three themes: Technical Glitches, Computers, and Activities. These three themes are discussed in the ensuing sections.

Technical glitches

Several healthcare workers stated they had trouble with the technology in the modules. One stated that she did the modules at work and had difficulty hearing what was being said because it was noisy. "We can barely hear it." When asked if she used headphones, she responded there were none available. Another healthcare worker reported that she did the modules at home and didn't have any difficulties. "I looked on the sheets from the course I took in the past and it explained it well."

Some healthcare workers reported they completed the modules and received a message that they had successfully completed the module but their completion wasn't recorded in the system. A second healthcare worker reiterated the same message, "There is one module, I started three times. It didn't register. I said that's it, I'm not doing it anymore." One healthcare worker described this technical glitch as discouraging. Another healthcare worker agreed and stated, "You're finished

and after it says it wasn't done. You say, 'I did it! It's there!' But no, you didn't save." One nurse explained that sometimes while working on the modules she would have to leave to give residents their medications and she needed to be able to return to the module without starting over.

Healthcare workers said they enjoyed the modules when they could participate as a group, help each other and learn from one another. One said, "In a group it was fun. We could give each other the answers. It went faster. When you were stuck someone could help you and say, 'Oh I did this'. Sometimes she would explain why."

Computers

Several healthcare workers explained that the computers on the units were very slow and by the time they logged in and found the module on their breaks they only had five minutes to work on them. Healthcare workers were adamant that conditions for completing the modules during their 15-minute breaks were far from ideal. One PSW communicated, "They are too slow. Holy moly. They need to put money into computers. Invest." Another explained, "The computers are too slow. By the time you open them you need to leave". The same sentiment regarding slow computers was reiterated several times in the seven interviews. One PSW stated that she did a lot of the modules at home but resented having to complete them on her own time.

Activities

When asked how they responded to the activities in the modules the healthcare workers were generally very enthusiastic. One PSW reported, the puzzle activity was good. "It helps us understand." Another PSW had difficulty with the drag and drop exercise. When probed she explained that she didn't understand what to do. Another learner said she enjoyed the case studies. She said, "The [case studies] are what permits us to understand." Similarly another healthcare worker stated, "The case studies were realistic. They put you in specific situations." Additional comments from healthcare workers regarding the activities included, "interesting", "they [make] you think", "We want more", and "they were fun."

Service

Healthcare workers' responses with regard to service fell into five themes: Time, Passport, Launch Sessions, Posters and Support. These five themes are discussed in the ensuing sections.

Time

The biggest complaint about the modules was that healthcare workers just do not have the time to do the modules during work hours. One healthcare worker shared, "The due date comes and sometimes we didn't have the time [to do it]. At that moment you do it just to get rid of it." Several healthcare

workers said they thought the modules were useful but they resented having to do them during their breaks. "Most often we do them during our breaks. There are some [modules] that take 45 or 55 minutes. We have care tasks and it is our break!" A nurse elaborated, "We work in care. We don't ever have time. I find that to be the biggest problem." When healthcare workers complained about having to complete the modules during their breaks they were told they had the option of completing them at home. One healthcare worker shared, "At home we have other things to do. We don't have time at home."

Moreover, healthcare workers said the amount of time they were told it would take to complete the module and the actual time it took was very different. "They say it is 30 minutes but by the time we finish it is 50 minutes. That's another thing. The time wasn't real."

Passport

There was very little discussion when healthcare workers were asked if the passport tool designed in the form of a booklet to help them track their learning was useful. One healthcare worker stated, "I liked it". In another interview, a healthcare worker confessed, "I think the passport is in the same place they were given, we left them there." One nurse said, "Honestly, it is a document we received but didn't use." Another elaborated that there was little good communication regarding what the passport was for and how they should use them. In another interview, a healthcare worker stated, "I found that useful. I still use it but nobody really asked to see our books".

Launch Sessions

Launch sessions were provided to introduce the modules and offer support by helping healthcare workers log on and navigate the program. When asked if the launch sessions were beneficial several healthcare workers said they were. One participant said, "Yes, that helps". Another healthcare worker responded, "Yes it was appreciated. It was really practical." Other comments provided with regard to the launch included, "It helps because there were lots of people who had difficulty."

One healthcare worker pointed out that in the launch session, once again time was an issue. She explained that they would arrive and start a training session with the facilitator but barely get started when their break was over and they had to return back to duty.

In another interview, a healthcare worker stated that their director of care personally came to support them in the launch. In her words, "She sat with the new staff and helped them navigate."

Posters

When asked if they found the posters hung to inform them when new modules were available and their deadlines were

helpful, responses were mixed. Many healthcare workers said, "Yes." One elaborated, "Sometimes people pass them and say, "Oh, did you see?" Other healthcare workers said the posters were not helpful. They never noticed or saw them. Healthcare workers stated they are so busy, they pass by the posters without taking notice. The PSWs emphasized communication needs to be improved so they are aware when modules are available and their deadlines.

Support

Some healthcare workers explained they did not have a lot of computer skills or experience and they didn't feel they were sufficiently supported to take on this project. In the words of one PSW, "We have no one to help us. We are on our own." Another PSW agreed and voiced, "There are some people that don't know anything about computers. They don't have computers at home. So it's hard for them."

Healthcare workers explained they sometimes did not understand the questions or know the answers to the questions in the modules. One admitted that some of them coped by asking others who had already completed the modules the answers to the questions.

Some PSWs suggested they did not receive enough support to switch from face-to-face to online learning. "Before they used to give training days to everyone for mandatory training. Then all of a sudden we are doing electronic modules. Like...were we prepared for it?" A second PSW agreed and explained, "I am not good with computers. ... I'm obligated to do it without really understanding what I'm doing". Other healthcare workers said they would like support in the form of more appreciation for completing the modules on their own time, covering for colleagues who left the floor to complete the modules and using their breaks to work on the modules.

Structure

Healthcare workers' responses with regard to structure fell into two themes: Night Shift and Release Time. These themes are discussed in the ensuing sections.

Night Shift

Healthcare workers reported that leaving residents to complete modules during the night shift when there were only two on duty would jeopardize resident care. One explained, "We are only two at night. The residents come before everything. We don't have anyone to replace us. It's impossible for us to do it." Some nightshift workers stated they coped by doing some of the modules at home. When healthcare workers discussed the night shift, they consistently confirmed that they felt it was not possible to leave the residents to participate in the eLearning modules, "The evening is completely unrealistic because at night the staff is cut in half."

Release Time

Several healthcare workers stated when their colleagues went to work on the modules, they were left to cover for them causing them additional work and stress. One healthcare worker explained that she stopped doing the modules at home because she resented her colleagues being pulled off the floor to complete them when she was expected to work harder to cover for them. She explained, "They are getting pulled off and I have to pick up their work." Healthcare workers who did do the modules at home complained that it intruded on their personal time and therefore they should be paid. "It's fun to do them at home because you're not being disturbed. You can concentrate. But you know 'pay us.'" Healthcare workers suggested if they had 30 minutes of scheduled time, with enough staff to take care of the residents so they felt comfortable leaving them, they would be much more receptive to participating in the modules.

Outcomes

Healthcare workers' responses with regard to outcomes fell into two themes: New Knowledge and Skills and Knowledge Transfer. These themes are discussed in the ensuing sections.

New Knowledge and Skills

Several healthcare workers stated they learned new knowledge and skills from the modules. One stated the modules reinforced and supported her practice regarding the need to reposition residents to prevent pressure ulcers and that using a piqué (small quilt) as a second layer is not good practice as it can bunch and irritate the skin. Another healthcare worker said she learned that putting on the brakes on the wheelchair when residents are capable of propelling themselves is considered a restraint. Another said the modules helped her realize that exercise helps when a resident is constipated. In addition, she learned that a new resident may be afraid to ask to go to the bathroom and "holding it" can cause constipation. Healthcare workers reported learning the need to reposition bedridden residents.

It tells you with older people you have to respect them." A nurse elaborated, "I learned the bill of rights and things to do with feeding, eating, the whistleblower. I'm being updated on current things happening in healthcare." One healthcare worker told a story about how the module on whistleblowing impacted her, "Women tend to throw remarks and they call that horizontal abuse. It was helpful to learn you can say 'you better not do that because it can be abuse and aggression in the workplace.'" Healthcare workers liked that the module on whistleblowers mentioned zero tolerance for abuse. One PSW pointed out, "So that rings a bell to tell people [colleagues] you are putting your job on the line and risking consequences." However, several healthcare workers acknowledged that although they realized they should blow the whistle when they

witness abuse, it is easier said than done.

Healthcare workers recognized that they learned new information on how often they were supposed to change residents' continence products and that landing in a chair in a particular way was considered a fall. They also admitted the modules helped them realize they could improve the way they do certain things. "We tend to lack a bit with giving enough fluids and we end up with one or two UTIs [urinary tract infections]." One PSW stated she learned, "If I put a lap tray in front of the resident and forget to remove the tray, that is a restraint and [this was] our routine."

Transfer of Knowledge

There were several examples of learners reporting they transferred knowledge and skills learned in the modules into their practice. One healthcare worker reported she now talks to the residents when feeding them. Another PSW responded, "Now we are there for the resident and [realize] our conversation should be centered on them". Similarly, another PSW explained that before completing the module they often fed the resident without talking to them. After completing the module the PSW explained, "We talk to the residents when we feed them. Sometimes it calms the resident and they cooperate more when we talk." "It changed everything". It follows and supports the finding that the worker now talks to her residents. Other healthcare workers provided examples of changing practices with regard to putting on the brakes on the wheel chair if the resident was capable of moving themselves or putting the resident's lap tray in a different position so they did not restrain them.

When asked if the new information on how to transfer the resident correctly changed the way they were transferring residents, one healthcare worker stated, "Some transfers are not by the book or the way we are supposed to do them. But when you are working with a resident that you know is paralyzed on one side, sometimes transferring them on the weak side is better than on the strong side. Everybody is different."

In one focus group when asked if they learned something from the modules that they put into practice there was a long pause and no one responded. When asked what they would need to be able to put what they learned in the modules into practice, the healthcare workers all agreed, "More time." One healthcare worker elaborated:

They [the modules] are a little contradictory. The modules tell you to do something a certain way. But if we did it that way, we wouldn't get much done. Take the meals module. We tried to do [what the module suggested] but found it takes more time. It's not realistic.

Discussion

In response to the research question, this study highlights the need to have all five dimensions of the W(e)Learn framework

(content, media, structure, service, and outcomes) intertwined throughout the design, delivery, and evaluation of an eLearning approach. It is the collective impact of these dimensions that leads to a cohesive learning experience [9].

Healthcare workers reported they enjoyed the modules and found the content relevant. Most said the modules were too long, the time to complete the modules was underestimated, and some content was ambiguous or confusing. Healthcare workers reported they often didn't have time to do what the module proposed in practice.

With regards to media, healthcare workers reported technical glitches were frustrating and time consuming. Healthcare workers revealed sometimes the system did not record what they had done. Similarly, they complained they often had to answer questions five or six times in order to be able to move on. Several healthcare workers stated they enjoyed the learning activities.

With regard to service, healthcare workers reported the launch sessions were helpful. Some found the posters helpful while others did not and wanted supervisors to play a role in communicating information such as module availability and due dates. For the most part, the healthcare workers reported the passports were not used or helpful. Healthcare workers would like support in the form of recognition or appreciation for completing the modules on their own time, covering for colleagues who left the floor to complete the modules and using their breaks to work on the modules. The literature on training in LTC found that learners are motivated by certification or some form of career progression for their participation [13,14].

With regard to structure, several healthcare workers said it was difficult to complete the modules during work hours and impossible to do them during the night shift when staff is cut in half. Other research also points out that heavy workloads and shift work environments make training in LTC difficult [15,16].

Healthcare workers communicated trying to do the modules on their 15-minute breaks resulted in unrealistic learning conditions, frustration and resentment. Healthcare workers begrudged doing the modules at home and not being paid.

With regard to learning outcomes, healthcare workers reported they learned new knowledge and skills from the modules and provided examples of learned information. There were also examples provided of transferring learning to the workplace and changing practices to improve resident care.

Findings from this research supported the literature that states eLearning modules can be a convenient and effective way for healthcare workers in LTC facilities to meet learning outcomes [2-7]. This study also demonstrated that evaluation is critical for eLearning training design, improvement and long-term success [17]. Sustainable high-quality education is facilitated

through systematic integration of evaluation into the learning process [18].

The eLearning approach in this study was implemented by one organization to assist in meeting the new mandatory training requirements of the MOHLTC and the LTC Homes Act, 2007. However, healthcare workers reported several examples of information in the modules that conflicted with how they currently do things in practice. In general, the reason for conflict was lack of time or human resources.

Healthcare workers were challenged in implementing the best practices suggested by the modules. Healthcare workers admitted that sometimes they have no choice but to rush the resident when feeding them, feed several residents at the same time, and cannot always get residents out of bed when they want. Healthcare workers were not happy with some of the ways they cared for residents but said in order to change they need a decreased workload or additional resources.

In conclusion, although this study was limited to only two sites and 36 healthcare workers, our findings suggest that although eLearning may be a convenient way to train in LTC and facilitate meeting educational needs and regulations, it is not a panacea to the training needs in LTC.

Healthcare workers provided the following recommendations for improving the modules to facilitate learning and increase transfer of knowledge:

- Make modules shorter and provide realistic completion times.
- Provide easier access to, and faster, computers.
- Provide release time to complete modules and have someone cover.
- Pay healthcare workers to complete the modules on their own time.
- Do not use healthcare workers' breaks to complete the modules.
- Allow healthcare workers to work on the modules in groups to support learners not familiar with computers or who have trouble understanding the language.
- Have someone available to answer questions regarding computers or content.
- Involve healthcare workers in the design of the modules to eliminate ambiguity from content learner confusion.
- Fix computer glitches to record participation.
- If a learner does not get a quiz answer correct after

two attempts, the program should provide guiding hints.

- Improve communication by having the supervisors inform learners when a new module is available and due dates.
- Recognize healthcare workers' time and commitment to the program.
- Recognize some things the modules are proposing are not possible to implement without addressing workloads and support.
- Ensure modules are launched simultaneously in both French and English to ensure healthcare workers have the opportunity to complete the modules in their preferred language.

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Conflict of Interest

The authors declare that they have no conflict of interest.

Appendix A: Focus Group Interview Questions

1. Overall, how did you find the content covered in the modules?
2. Did you learn anything new from these modules? If yes, what?
3. Do you use what you learned from these modules in your work? Can you provide me with an example?
4. Was there anything in any of the modules that validated what you currently do in your practice? If so, what?
5. Was there any information that challenged what you currently do in your practice? How did you resolve that difference or challenge?
6. How did you find the learning activities used (for example, quizzes, multiple choices, stories/case studies; puzzles drag and drop)?
7. How did you find the online delivery with regard to the modules?
8. What was the most rewarding or satisfying aspect of the modules?
9. What was the least rewarding or satisfying aspect of

the modules?

10. How could the modules be improved?
11. How did you find the passport resource designed to track your participation?
12. Did you find the launches and computer clinics, helpful?
13. Thank you for your participation! Your feedback is important to us!!

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