A feasibility study af a blended learning dementia care: elective course for nursing students

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ABSTRACT

As there is a limited long-term care options in Indonesia, people with dementia are cared for by their family. They often hospitalized as the condition progresses. Nurses are the profession with most contact. Therefore, preparing nursing students to care for people living with dementia is needed. Blended learning as e new learning strategy in dementia care for nursing student need to be evaluated to comprehend its feasibility in the future dementia care course. This study aimed to evaluate the feasibility of a blended learning course for nursing students about dementia. A blended learning course was developed as a three-credits elective course that voluntarily joined by 42 fourth year nursing students. This course integrates the schedule, modules, and assignments in a learning management system called eLOK (Moodle based). One group pre-post test was conducted to evaluate this course using DKAS (Dementia Knowledge Assessment Scale) and DAS (Dementia Attitude Scale) as instruments. Google form was integrated to evaluate the course and the use of eLOK. Data were analysed using a paired t-test. 37 students (88.1%) completed the questionnaires. There is a significant improvement in knowledge towards dementia (t = 5.96, p value < .00) but not the attitude (t = 2.50, p value = .17) right after completing the course. Students also well appreciated the quizzes and project as the evaluation of learning outcomes of the course. Moreover, the audio-visual material in eLOK made them feel helpful in learning new topics and made new constructive experience of learning. In conclusion, this blended learning is feasible to be used as a learning method for delivering dementia care course.

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1. INTRODUCTION

The number of people living with dementia increase globally. The number of people living with dementia has reached 50 million in 2017 [1]. It is also predicted that this number will be doubled every 20 years [2]. In Indonesia, the number of dementia patient has reached more than a million and most of these patients were cared for their family caregivers at home [3]. Due to the progress of the dementia, caring for people living with dementia will become more difficult and more expensive, aside from bringing negative impact on their social life [4]. Furthermore, caring for them become may be even more difficult as the general knowledge of dementia in Indonesia were relatively low [5], thus caregivers are needed to support families in caring for people living with dementia. Nurses as the first line or professional health care provider in the caring for this population and their carers need to be equipped with knowledge and skills in caring for people with dementia. However, some studies mentioned that knowledge of dementia among nurses may be considered as rather inadequate [6-8].

Nursing education need to be prepared in providing knowledge and skills related to dementia to the students, innovation in delivering knowledge and skills to the students is necessary [9]. Blended learning is one of relatively new teaching methods in nursing education in Indonesia. Blended learning itself, combining traditional face to face learning with at least 30% of online learning. This teaching method may be performed as a promising method in delivering nursing education towards dementia. However, less evaluation of blended learning in the dementia care course in rather low- and middle-income countries, while has shown many benefits to the students. Thus, evaluation about blended learning in a dementia care course using blended learning will need to be managed to see its application feasibility in the future. So that, the aim of this research is to evaluate the feasibility of a blended learning course for nursing students in caring for people with dementia.

2.   RESEARCH METHOD

This study was a one group pre-post-test feasibility design of a blended learning of dementia care course for nursing students. This research was conducted at School of Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada (FK-KMK UGM), Indonesia in March to April 2019. There were 42 students voluntarily participated in the study. This study was ethically reviewed by the Ethic Committee at FK-KMK UGM and registered on February 2019 Ref: KE/FK/0195/EC/2019. This course was delivered through face to face and online classes. As much as 33.3% of the class were delivered via online (*Table 1)*. This course was delivered in three weeks to cover three learning credits for the fourth-year nursing students. Dementia Care Course itself is an integration of the 18-hour version of Dementia Care Skills (DCS) training for care worker and evidence-based practice in nursing approach on dementia care. The DCS training is an educational intervention initially developed by the Dementia Training Center, Australia. The Indonesian language version was developed by Alzheimer's Indonesia, while the training of trainers is mainly delivered by Alzheimer's Singapore. Permission in integrating the DCS training for care workers was obtained from Alzheimer's Indonesia. The DCS training must be delivered by trainers that was certified by Alzheimer's Indonesia. Two certified lecturers deliver modules that covered in the DCS for care workers. In addition, they also deliver topics about: the evidence-based practice in nursing approach on dementia care, including current evidence in nursing process and intervention given to people living with dementia and their carers.

Table 1. Learning outcomes of blended learning dementia care course

Learning Outcomes	Topic Delivery	
	Face to Face	Online
Student able to explain the signs and symptoms of dementia	√	
Student able to explain person centred care concept in caring for people living with dementia	√	
Student able to perform therapeutic communication for people living with dementia	√	√
Student able to identify and deliver the response for behaviour changes due to dementia	√	√
Student able to understand the importance of engaging activity for people living with dementia	√	
Student able to formulate a proper nursing process on people living with dementia	√	
Student able to deliver basic information for families of people living with dementia	√	
Student able to perform proper article search on the current evidence in dementia	√	√
Student able to understand the current policy and care system for people living with dementia		√

An interdisciplinary teaching team was also invited to contribute in this course, including specialists in dementia care, non-government organization (Asia Pacific regional director of Alzheimer's Disease International), and nursing background entrepreneur. Different teaching strategies were applied, namely in

class meetings, experiential learning, flipped classroom, field trip, visual learning, online meeting and project-based learning.

Moodle as a Learning Management System (LMS) was used in this course to ease the process [10, 11]. This course is available at eLOK (Moodle-based) a Massive Open Online Courses (MOOC) that developed by Universitas Gadjah Mada, Indonesia. The integration of schedule, modules, and assignments were provided in eLOK and applied it in the actual class. Dementia care course that's available in eLOK are equipped with 6 original learning videos, supporting videos from other sources, supporting articles on each topic, discussion tab and quizzes. For the academic purposes, the course was incorporated student evaluation, including evidence-based search, field trip report, news search, project report and quizzes.

For this study purpose, learning outcome of the students was evaluated using Alzheimer's Dementia Knowledge (ADKS) [12] and Dementia Attitude Scale (DAS) [13] in Indonesian version (Mulyani, 2013). The ADKS used to measure current knowledge of Alzheimer disease. It consists of 30 questions with Guttman scale. While the student attitude toward dementia, people measured by using the DAS with 20 items using 5-point Likert scale. A paired *t-test* used to analyse attitude and knowledge towards people with dementia. We also incorporate Google form to evaluate the course and the use of eLOK. The course evaluation, including satisfaction of the topics, assignments given, and learning strategy performed.

3. RESULTS AND DISCUSSIONS
3.1. Student characteristics

Forty-two students were voluntarily signed up and completed this course. Thirty seven students (88.1%) completed the questionnaires. Most of the students are women (82.19%), Moslem (82.9%) and have no family history of dementia (85.4%, see Table 2). In addition, more than half of the students live in rural areas. Age of the participants in this study are ranged from 21 to 24 years old. These characteristics are nearly similar to many nursing student characteristics across Indonesia. Even though nursing is not gender related work, but female tend to study and work in this field [14]. This trend also applied in Indonesia as we also have tendencies to have more female students rather than male students.

Table 2. Sociodemographic data of the respondents (n = 37)

Variable	Results
Age	
Median	21
Min-max	21-24
Gender	
Male	34 (82.9%)
Female	3(17.1%)
Religion	
Moslem	3(17.1%)
Non moelem	34 (82.9%)
Area of living	
Rural area	23 (62.2%)
Urban area	14 (37.8%)
History of dementia in family	
Yes	2 (14.5%)
No history	35 (85.4%)

All participated students had passed an elderly care course as a mandatory course in their third year. In the elderly care course, dementia as the topic is delivered in one meeting, which may deliver basic information about dementia. However, by this topic students were eager to learn more about dementia and how to take care people living with dementia. Another attention grabbing for the students since it is the very first-time elective dementia care course has ever been opened. This dementia care course received an enthusiastic response from 42 out of 94 students in this academic year to voluntarily sign up for this course.

3.2. Preparation of the course

Preparation of a blended learning dementia care course taking enormous time and effort. The preparation includes not only the preparation of the teaching team, the content of the course in the LMS and evaluation forms, but also the permission to merge the content of Dementia Care Skills (DCS) training in the course. The DCS training modules must be delivered by certified trainer, means that we need to have at least two certified trainers deliver the content. Current DCS training programs and certification of the DCS trainer is conducted by Alzheimer's Indonesia. Teaching team in this course consists of interdisciplinary lecturers

from gerontology specialist, non-government organization, entrepreneur, and experts in older people care. Having an interdisciplinary teaching team may benefit the students in many aspects [15]. Students learn to experience point of view from many professionals and may develop an idea in collaborating with other professionals [15, 16].
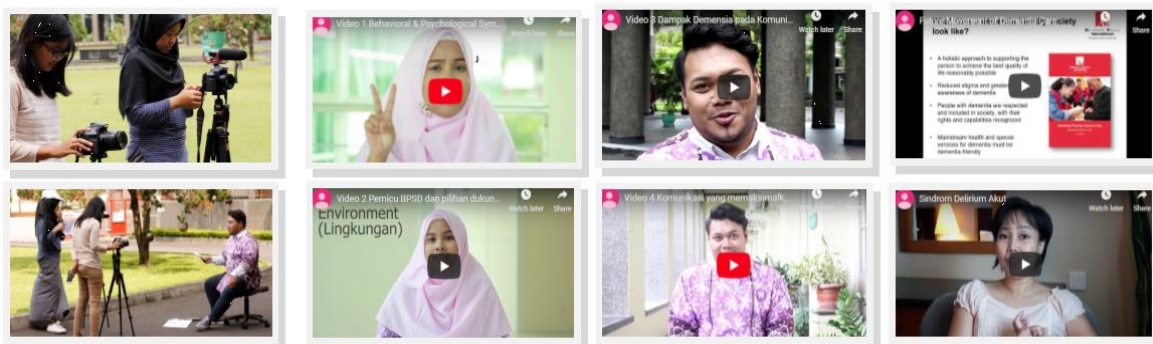

Figure 1. Development of the learning videos for visual learning in the course

In general, blended learning that involves e-learning technique should be comprehended the lecturer's role. Lecturers in blended learning are content facilitator, yet consultant rather than a mere transmitter of information [17]. Interdisciplinary teaching team provides a different perspective and greater insight about their field. Moreover, it is beneficial to the student as they may work in various settings [18]. We also acknowledge the possibilities of overlapping issues as many professionals teaching the same batch of the students. We lessen this possible disadvantage by conducting pre course workshops. In this pre-course workshop, we inform about each topic and any possible similarities between topics. A well circulated and updated syllabus is also necessary to avoid overlying of the topics.

3.3. Evaluation of the topics and assignments

It can be recognized from Table 3 that there are 6 best impression topics in the course. The quizzes were the most preferred by the students, representing just over a half (51.4%) of the students. Furthermore, in their opinion, they found that the quizzes were fun and challenging. Although the students found the raising awareness project was more difficult, they also stated that this assignment is pleasurable to do (*Figure 2*).

Table 3. Favourited topics of the students ($N = 37$)

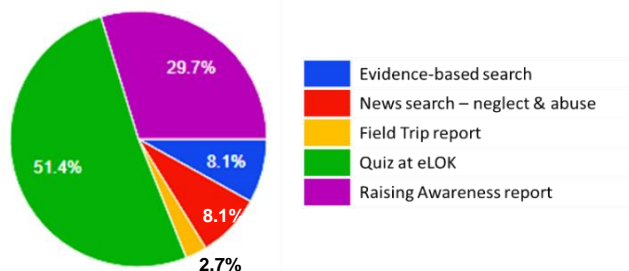| Topic	Frequency	Percentage
Signs and Symptoms of Dementia	27	73%
Behaviour and psychological symptoms of dementia (BPSD)	26	70,3%
Managing homecare nursing: lesson learnt from "Wulan 247"	15	40,5%
Physical, social, and emotional of the environment	14	37,8%
The impact of dementia in communication	12	32,4%

Figure 2. Proportion of favourite assignment of the students (N = 37)

The quizzes were one of the interactive methods which was most preferred by the student (51.4%). A study by Cook and Babon [19] showed that online quiz is one of effective strategies to reward the student's effort in engaging in the learning process. Afterwards, it was mentioned that another advantage of using quiz is, a student can receive quick feedback for their work. So it is efficient in student and even lecturer's perspective [17].

3.4. Evaluation of the visual learning

As reported by many studies, blended learning is the one of innovation to conduct an effective and efficient learning [20]. The use of some interactive methodologies such as quizzes, field trip, and problem-based learning can improve the learning result [21]. In this study, it can be shown by a higher average score of all quiz section on BPSD ($M = 8.26$; min-max= 6-10) and effective communication to people with dementia ($M = 8.95$; min-max = 7-10). In addition, some of the students mentioned that using video made them more focused on understanding the topics. The student did independent learning through read the lecture's material or supplemental articles and watching videos that uploaded in eLOK.

Table 4. Student's statements on visual learning evaluation

P1	'The quality of the video is exceptional; addition of subtitles will be helpful.'
P22	'the flexibility is a plus point, we can learn from anywhere and it is easier for us to understand.'
P34	'We can focus on the understanding the topic as we can replay the video.'
P36	'Better in understanding, downloadable, and re-playable.'

3.5. Evaluation of the Online meeting

Online meeting was conducted to facilitate interactive learning and discussion with peers. It was supported by video conference or face to face meeting section. This combination of learning method is ideal for many student's preferences [22]. Students also appreciate the online meeting as this is a new approach to learning from them.

Table 5. Student's statements on online meeting evaluation

P1, P19, P21, P30	'It (the app) is easy to do, it was fun in my learning, great experience.'
P3, P4, P19, P21	'We do not need to go to campus, relaxing, and more efficient.'
P13, P30	'The app is easy to use, fun, and more focus in hearing the teacher.'

Some of the students argued that online meeting using Zoom is more effective and efficient. The effectiveness of this method can be described as online meeting gain student's focus on listening to the teacher, easy to use, fun, efficient and engage the student during the class. It is also notably supportive the flexible on time and place to study [23] and may improve the student independence in self-directed learning [22].

3.6. Learning Management System (LMS) utilization

Moodle as a Learning Management System (LMS) was used in this course to ease and facilitate the process [10, 11]. This course is available at eLOK (Moodle-based) a Massive Open Online Courses (MOOC) that developed by Universitas Gadjah Mada, Indonesia. Table 6 shows that students mostly satisfied using eLOK as the LMS. They felt eLOK can support them in the learning process and eager to use it again in the future. [24] stated that student satisfaction is a core requirement for measuring the quality of an online learning method. This included evaluation about the instructor, technology, class management, interaction, and instruction. Furthermore, the internet and communication technology is the key for success for the learner's satisfaction [25, 26].

Table 6. Evaluation of the Management System (n = 37):

Variables	Frequence	Percentage
Accessibility of eLOK	37	100%
Satisfaction of using eLOK	37	100%
Satisfaction of the appearance of eLOK	36	97,3%
Satisfaction of eLOK in learning facilitation	37	100%
Willingness to use eLOK in the future course	28	75.7%

3.7. Evaluation of the Learning Outcome

The evaluation of the learning outcome was analized using a paired t - $test$. It is shown in Table 5 that this learning method statistically significant in improving the knowledge of the student on dementia ($t = 5.96$, p $value$ $< .00$). However, even though there is improvement in the attitude score, it is not statistically significant ($t = 2.50$, p $value$ $= .17$). Further consideration related to the sample size. As it is an elective course, the number of the participants may not represent the whole batch of the students.

Table 7. Student Knowledge and Attitudes toward dementia (n = 37)

Variable	Mean (SD)		t	df	p-value
	Pre-test	Post-test			
ADKS score	17.97 (2.46)	21.03 (2.27)	5.96	36	< .00
DAS score	39.59 (3.15)	40.41 (3.13)	2.504	36	.17

In our finding, there is a significant improvement in knowledge towards dementia (t = 5.96, *p value* < .00) but not the attitude (t = 2.50, *p value* = .17) right after completing the course. It is still not clear weather knowledge and attitude toward people with dementia have positive or negative correlation [5]. Based on Cheston, et al. [27] attitude also formed by multifactorial, which may be explained through modelling. Measurements of the attitude also challenging as it may not change as much during a short period of time [28].

Justice and Zhu [26] showed that satisfaction, learning performance, and knowledge construction are important issues in learning outcomes evaluation of blended learning. The student's experience of emotional feeling in term of intrinsic motivation toward blended learning process should be measured as it is refers to student's feeling that affected by environment and influence their motivation on learning, doing the task, or availability of resources such as tension, anxiety, or nervousness [26]. At last, from this study, we learn that measuring motivation in taking the course need to be considered in the future.

4. CONCLUSION

We concluded that a blended learning on dementia care course for nursing students is feasible. Support is needed from many divisions in delivering a blended learning course, namely permission in using DCS training for care workers 18-hour version, development of the learning videos, and utilization of LMS. The use of visual learning in the eLOK as learning management system may facilitate learning process of the students. Further improvement in the preparation of the course, including making a video, quizzes, MOOC preparation on eLOK, training kit and online meeting platform need to be handled before the class. The blended learning format is feasible to be delivered in the dementia care course and showed improvement on the student's knowledge in dementia. The used of visual learning in the eLOK as learning management system facilitate learning process of the students. Improvement of the contents and piloting online meeting suggested by the students. This course will be open again next year with the use of Cisco WebEx for the best experience of online meetings.

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