Journal of Professional Nursing 35 (2019) 379–388

Contents lists available at ScienceDirect

Journal of Professional Nursing

journal homepage: www.elsevier.com/locate/jpnu

Teaching context contributing to nursing students' adoption of a deep approach to learning

Miyuki Takase[a,*], Takiko Imai[a], Mayumi Niitani[b], Mari Okada[c]

[a] School of Nursing, Yasuda Women's University, Japan
[b] Institute of Biomedical & Health Sciences, Hiroshima University, Japan
[c] School of Nursing, Prefectural University of Hiroshima, Japan

ARTICLE INFO

Keywords:
Nursing students
Nurse educators
Deep approach to learning
Teaching context
Undergraduate education

Introduction

Nursing educators endeavour to prepare competent nursing students (Kamath & Udayakiran, 2015). Competent students are equipped with a wide range of knowledge and deep understanding, the ability to see phenomena critically to grasp the essence of health-related problems, and skills to solve problems in an efficient manner (Huang, Huang, Lee-Hsieh, & Cheng, 2018). In reality, however, preparing such students poses a huge challenge for nurse educators. As the scope and role of nursing expands in response to social expectations, today's nurses are expected to take not only a clinical role in healthcare institutions, but also to take an active role in nursing education, nursing management, community and home care nursing, and even treat the injured at disaster sites. The result is a crammed curriculum, which requires educators to teach an increasing list of subjects within a limited time-frame (Ministry of Health Labour and Welfare, 2011). Such a curriculum prevents educators from investing enough time in teaching each learning topic. The excess workload also leads students to resort to rote-learning in order to just pass exams (Biggs & Tang, 2007; Entwistle & Walker, 2001; Lublin, 2003).

In order to improve students' competence within a limited time-frame, educators must encourage students to adopt an effective learning approach, with which students are motivated to understand learning topics in depth, and acquire an ability to apply their existing knowledge to the practice setting. However, how to encourage such an approach within nursing students is underexplored.

Background

An approach to learning is defined as a way of learning a particular task (Biggs & Tang, 2007). The approach to learning consists of three parts: students' *intention* regarding learning, their *motive* behind it, and the associated learning *strategy* to fulfil their learning intention (Biggs, Kember, & Leung, 2001; Entwistle & Walker, 2001; Ramsden, 1988). Unlike learning style, which is a stable student disposition that is difficult for educators to change, the approach to learning depends on both the student's personal characteristics and the learning context, thus it is considered as something educators can change (Biggs & Tang, 2007).

Several learning approaches have been proposed, but the most well-known learning approaches are the surface and the deep approaches to learning (Biggs & Tang, 2007; Entwistle & Walker, 2001; Marton & Säljö, 1997; Ramsden, 1988). The surface approach to learning (SAL) is defined as learning by doing the minimum amount of work to meet the course requirements (Campbell & Cabrera, 2014). Students' intention is, thus, to reproduce the course content (Dolmans, Loyens, Marcq, & Gijbels, 2016), with the intention stemming from students' extrinsic motivation to avoid failure (Biggs & Tang, 2007; Campbell & Cabrera, 2014; Entwistle & Walker, 2001). Students who adopt the SAL are not interested in the subject, so they consider the learning tasks to be things they have to finish off rather than understand (Biggs & Tang, 2007). Strategies used by these leaners include rote-learning; passive processing of information and facts without reflecting, integrating or relating these to each other; and reproducing memorised knowledge in exams (Biggs & Tang, 2007; Dolmans et al., 2016; Hay, 2007; Lee & Baek,

* Corresponding author at: 6-13-1 Yasuhigashi, Asaminami-ku, Hiroshima-shi, Hiroshima 731-0153, Japan.
E-mail address: takase@yasuda-u.ac.jp (M. Takase).

https://doi.org/10.1016/j.profnurs.2019.04.006
Received 13 September 2018; Received in revised form 4 April 2019; Accepted 12 April 2019

2012). This approach is often adopted by students, who must cope with heavy workloads (Lublin, 2003), which is the case in current nursing education. Unless a subject requires memorisation of facts, this approach is detrimental for students as it hinders them from understanding learning topics in depth.

The deep approach to learning (DAL), on the other hand, is defined as learning, which involves students' meaningful and appropriate engagement with subject matter, and structuring their ideas about what they have learnt (Biggs & Tang, 2007). Students who adopt the DAL like to get an overview of the materials; look for underlying principles and ideas; examine the logic of arguments; and relate and integrate one concept with another, or with pre-existing knowledge, and reality (Biggs, 2001; Biggs & Tang, 2007; Entwistle & Walker, 2001; Marton & Säljö, 1997; Turner & Baskerville, 2013). Students' intention when adopting DAL is to understand what is being studied (Dolmans et al., 2016), and this intention is driven by students' intrinsic motivation, such as their interest, willingness, and desire to learn and understand the study materials (Biggs, 2001; Biggs & Tang, 2007; Campbell & Cabrera, 2014). Actual strategies employed by these students include actively engaging themselves in self-learning such as reading widely; critically examining ideas based on the available evidence; and using high level meta-cognition (Biggs, 1987; Entwistle & Walker, 2001; Lee & Baek, 2012) (See Fig. 1).

According to Biggs (2001), the learning approach students adopt is influenced by two factors. One is student factors such as students' prior knowledge, ability, and preferred approaches to learning. The other is teaching context, including teaching objectives, teaching climate, assessment, and teaching approaches/methods (Fig. 1). While the learning approach used by students is based on their motive and preference, Biggs (1993) maintains that their perceptions of the teaching context also affect their intention, motive and the learning strategy to be employed. In fact, when non-nursing students' perceived educators provided clear learning goals and explanations, and encouraged students' activities in class, the students tended to adopt the DAL (Bevan, Chan, & Tanner, 2014; Wang, Pascarella, Nelson Laird, & Ribera, 2015).

Biggs (2001) also maintains that different learning approaches produce different learning outcomes. In fact, Leung, Mok, and Wong (2008) reported that the academic achievement of nursing students was negatively correlated with their use of SAL. On the other hand, the use of the DAL, which involves high levels of cognitive activities including reflecting, examining, applying, and relating study materials to reality (Biggs & Tang, 2007; Entwistle, 2000), improved students' critical thinking skills (Wang et al., 2015) and their academic grades (Salamonson et al., 2013; Snelgrove, 2004). Moreover, the DAL has been found to facilitate students' enjoyment of study (Laird, Seifert, Pascarella, Mayhew, & Blaich, 2014; Wang et al., 2015); hence, a preferable learning cycle occurs (Fig. 1). Most importantly, when students are motivated to deeply understand learning topics, they are willing to invest more effort in study without the guidance of others.

While the impacts of the DAL on students' academic achievement are promising, factors that affect nursing students' adoption of the DAL have not been well investigated. Nursing scholars have reported the effectiveness of some teaching methods, such as the use of participatory learning activities (Kamath & Udayakiran, 2015), flipped classrooms (Hu et al., 2018), and problem-based learning (Gholami et al., 2016; Ling-Na, Bo, Ying-Qing, Shao-Yu, & Hui-Ming, 2014), on students' learning. However, it is not certain whether or not these teaching methods precipitated the students' use of the DAL. Even if they had done so, however, preparing and implementing some of these teaching methods would be too demanding (Aydın & Demirer, 2016; Kilroy, 2004) so it might not be feasible to administer them on an everyday basis. Hence, what is necessary to understand is teaching strategies which can be integrated into everyday teaching practice, and which facilitate students' adoption of the DAL. By understanding these, nurse educators could create a learning environment which motivates students to engage in their own learning with deep understanding, and turns them into competent nursing students.

Study aim

The aim of this study was to explore nursing students' perceptions of the teaching context that facilitated their adoption of the DAL in lecture subjects.

Methods

Design

A qualitative design with semi-structured interviews was used to explore the students' perceptions of the teaching context that facilitated the DAL.

Participants

Students were recruited from Bachelor of Nursing Courses provided at one private and two public universities in Japan, using a purposive sampling. The following criteria were used to select the students: 1) they had attended lectures specific to nursing at the above universities for more than one year, and 2) they had the desire to continue their current nursing courses. Those who were considering leaving the

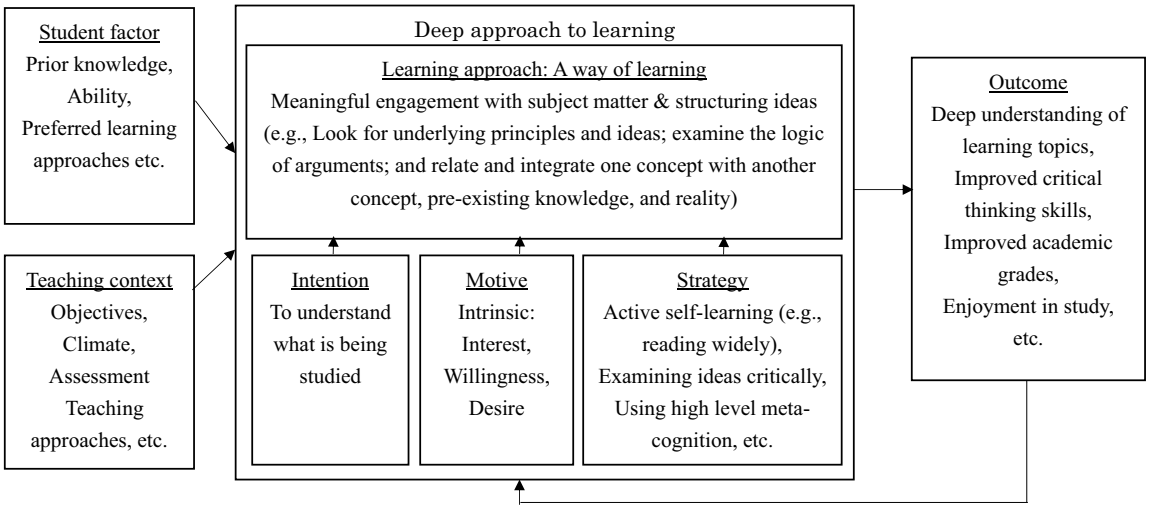

Fig. 1. The conceptualisation of deep approach to learning.

Table 1
The interview guide used in the study

Introduction
We, as nurse educators, want students to proactively engage in their own study. We also think about what we can do to enhance students' learning activities through our teaching. Therefore, we would like to understand your usual learning approaches, and what kinds of lecture either facilitate or hinder your active engagement in your learning.

About lectures
To begin with, we would like to understand your approaches to learning in lecture courses.

1. How do you usually engage in learning? Please describe your approaches and strategies to learning lecture subjects within and outside classes at the university. ←Aim: To ask about their general approach to learning.
2. Why do you do so? ← Aim: To identify students' motivation to learn.
3. Among all lecture subjects you have ever undertaken in the university, please tell me which subject you have (or had) the most interest in and tried the hardest to understand. ←Aim: To identify a subject in which a student actively engages (or engaged) in learning for his/her own interest, using a deep approach to learning.
4. Why are (or were) you so interested in that lecture subject?

1) What are (or were) the purposes and motives? ← Aim: To identify a student's learning *intention* and *motivation.*
2) How do (or did) you try to understand the study topics? ← Aim: To identify their *learning approach and strategies*, such as reading widely, relating new knowledge to old, and thinking about learning topics by applying them to everyday life, etc.
3) What kinds of *teaching context* made you try to learn? ← Aim: To elicit the teaching factors, which facilitated the use of the DAL based on the work of Biggs (2001).
   (1) Lecture content
   (2) Teaching methods
   (3) Assessment
   (4) Lecture climate
   (5) Educator's attitude
   (6) Others

5. Are there any other factors which make you think "I would have tried harder if lectures had been this and that"? ← Aim: To explore other factors which are not mentioned above.

courses were excluded from the study. Participants were recruited until data were saturated, and this strategy resulted in the recruitment of 23 nursing students.

Data collection

The potential participants were recruited in classrooms. The purpose and methods of the study were explained to the students verbally and using an information sheet. The students were asked to contact the researchers if they were willing to participate in the study. When they contacted the researchers, they were informed of the main questions that they would be asked during the interview. This gave them the opportunity to reconsider their participation as well as to contemplate their answers prior to the interview.

To collect the data, semi-structured interviews were conducted by the second and third authors as well as a trained research assistant with a master's degree, between November 2017 and January 2018. The interview guide was developed based on the work of Biggs (2001), and in such a way as to elicit students' intention, motives, strategies for learning, and their perceptions of the teaching context that facilitated their use of the DAL (see Table 1). The interviews were conducted in a quiet room within each participant's university, and audio-recorded with the participant's permission. To elicit honest responses from the students, the students were interviewed by researchers who were either external to the students' universities or internal but not involved in marking the students' work at the time of the interview. At the end of the interview session, each participant was given a $10 library card as a gesture of appreciation for his/her participation. The interviews lasted on average 50.43 (SD = 7.45) minutes.

Ethical considerations

Prior to the study, ethical approval was obtained from the Institutional Review Boards of all the participating universities. The participants were informed that their decision about not participating in or withdrawing from the study would not affect their student status. Upon agreement, written consent was obtained from each participant.

Data analysis

Prior to the analysis, all the interviews were transcribed verbatim. Then, thematic analysis was employed, using NVivo 12 (QSR International, Melbourne, Australia), to analyse the interview scripts (Rice & Ezzy, 1999) in order to identify subcategories, categories, and themes.

Rigour

To maintain the rigour of the study and avoid bias, the whole analysis was conducted by the first author, who was not involved in the data collection. The results of the analysis could not be shared by the students' participants because at the time of completing the analysis, some had already graduated and others were in the midst of clinical placement. Therefore, the results produced by NVivo, which showed the hierarchy of codes, subcategories, categories and themes, were checked by the second and third authors, who were experienced qualitative researchers, to ascertain the validity of the analysis.

Findings

The demographic characteristics of the 23 students are shown in Table 2. The mean age of the students was 20.82, and 47.83% of them were in the fourth grade, followed by 39.13% in the second grade and 13.04% in the third grade. Of 23 students, four were male (17.39%) and 19 were female (82.61%). In addition, 47.8% of them were from private universities, while the rest were from public universities.

The results of thematic analysis yielded five themes with 10 categories and 27 subcategories (see Table 3), which described the teaching context that motivated students to engage in the DAL. Due to a space limitation, only themes and categories are explained here.

Table 2
The demographic characteristics of the students.

ID	Gender	Age	Grade	Types of university
1	Female	21	3	Public
2	Male	22	4	Public
3	Female	21	4	Public
4	Male	21	3	Public
5	Female	21	3	Public
6	Female	22	4	Public
7	Male	22	4	Public
8	Female	20	2	Private
9	Female	20	2	Private
10	Female	19	2	Private
11	Female	20	2	Private
12	Female	20	2	Private
13	Female	20	2	Private
14	Female	20	2	Private
15	Female	20	2	Private
16	Female	19	2	Private
17	Female	22	4	Private
18	Female	22	4	Private
19	Female	21	4	Public
20	Female	22	4	Public
21	Female	21	4	Public
22	Female	22	4	Public
23	Male	21	4	Public

Table 3
Themes, categories and subcategories, which explain teaching context for DAL.

Themes, categories and subcategories	Brief description
Theme 1: Engaging students' attention	The first theme identified was “engaging students' attention”. When lecturers successfully drew students' attention to their classes, students' adoption of the DAL was facilitated. There were two means to draw students' attention: one was to deliver lectures in a fun way for students, and the other was to facilitate students' concentration in class.
Category 1-1: Lecture with elements of fun	Students' attention to class was facilitated, when the lecture itself was enjoyable for them. The enjoyment was produced when the contents of the lecture were intriguing for students, and when lecturers themselves were funny and fun-loving.
Subcategory 1-1-1: Intriguing and sympathetic lecture contents and atmosphere	Students' attention to classes was facilitated when the content of lectures was interesting and fun, and something which students can relate to. The atmosphere of lectures was also important, as a pleasant atmosphere with many responses/interactions between students and a lecturer also facilitated students' attention to classes.
Subcategory 1-1-2: Fun-loving lecturers	Students' attention to classes was improved, when lecturers themselves were funny (e.g., making jokes) or fun-loving (so that students were not bored).
Category 1-2: Facilitating students' concentration	Another method of engaging students' attention was helping students concentrate on classes. To do so, lecturers used well-designed hand-outs, which facilitated students' note-taking, and/or created a sense of tension and quiet surroundings within the class to improve students' concentration. Lectures also changed their pace in lectures in order to balance between tension and relaxation (i.e., release students' tension).
Subcategory 1-2-1: The use of well-designed hand-outs which facilitate students' active note-taking	Some lecturers improved students' concentration by encouraging note-taking. For instance, lecturers encouraged students to take notes by specifying the points to be written. Lecturers also used hand-outs which contained only the main points of the lecture or blanks for students to fill in. These methods increased students' attention to lectures because without taking notes, hand-outs cannot be understood by themselves.
Subcategory 1-2-2: Lectures with a sense of tension	Some lecturers walked around while giving lectures, and others posed questions and asked students to answer them during the class. The fact that lecturers approached students created tension within the students. Furthermore, students were worried that they might not be able to answer the questions well when asked, so this created more tension within the students. Still other lecturers told stories about their clinical practice, which created a good sense of tension in the class.
Subcategory 1-2-3: Quiet surroundings that facilitate concentration	Students' concentration was heightened, when others were quietly listening to lectures with enthusiasm. A small size of class also facilitated their concentration because the class was quieter than the larger one. In contrast, classes with a lot of noise (e.g., other students' talking) made it difficult for students to listen to a lecture and concentrate on it.
Subcategory 1-2-4: Lecture with changing pace	Students said that it was hard for them to concentrate on class continuously for 90 min without a break. Therefore, they appreciated lecturers who provided a time for relaxing by showing videos or telling funny stories. In this way, they could distinguish a time for concentration and a time for relaxing. The students also appreciated lectures which were carried out with changing pace and intonation because lectures with a monotonic tone made them bored, thus they lost concentration.
Theme 2: Facilitating learning activities	Another theme identified was “facilitating learning activities”. When students' learning activities were facilitated within and outside class, DAL was also facilitated. Students' learning activities outside class were encouraged when lecturers provided directions and points for study, and set tasks for students to get credit for subjects.
Category 2-1: Facilitating learning activities in class	Students' learning activities in class were encouraged, when they had opportunities to think and discuss in class, actively participated in some class activities, and had chances to ask questions in class.
Subcategory 2-1-1: Providing opportunities for students to think in the class	Students appreciated the opportunities to think through discussion with other students about topics illustrated in textbooks, and about clinical scenarios, which were either real or devised by lecturers, in the class. Students also liked the opportunities to contemplate clinical scenarios presented by themselves, and express their opinions.
Subcategory 2-1-2: Providing student-centred participative lecture	Students liked participative classes. For example, students liked active participation in classes through group work and role-play. They also liked to experiment and experience something in classes. Some students thought that even being asked to read out textbooks in the classes was good, rather than quietly sitting and doing nothing while listening to lectures.
Subcategory 2-1-3: Creating environment in which students can ask questions easily	DAL was facilitated in an environment where students could ask lecturers questions easily and in a timely manner. It was important that students had opportunities to ask the questions when they arose and obtained the answers from lecturers on the spot.
Category 2-2: Providing directions and points for study	Students appreciated lecturers providing them with direction and points for study. In particular, students appreciated lecturers giving them feedback on their work, specifying what and how to study, and emphasising which subjects were important for the future.
Subcategory 2-2-1: Providing feedback to help students identify their learning tasks	Students appreciated the opportunities to receive feedback from peers and lecturers on their work (e.g., group presentations, and/or written assignments) to learn their strengths and limitations. Students also liked to check the weaknesses in their knowledge through short tests.
Subcategory 2-2-2: Providing direction for the study	Students' learning was facilitated when lecturers indicated the important points for study. Such points included subject contents, which had been covered by the national examination for RNs, and the end-of-semester examination. Students' learning was also encouraged when useful textbooks were introduced by lecturers, and when they understood how to tackle subjects.
Subcategory 2-2-3: Emphasising the importance of subjects	While the above category illustrates lecturers' highlighting the important study points within a subject, this category concerns lecturers' emphasising the importance of a subject as a whole. Some lecturers even used examples of their seniors students' situation (e.g., the fact that the fourth-grade students were struggling with anatomy and pathology in their preparation for the national examination for RN) to stress the important of these subjects for study.
Category 2-3: Setting tasks	Setting tasks for getting credit for a subject also improved students' motivation to study. Simply setting an exam drove students to active learning. If the exam was known to be difficult to pass, students' motivation to study was further stimulated.

(*continued on next page*)

Table 3 (*continued*)

Themes, categories and subcategories	Brief description
Subcategory 2-3-1: Subjects with examinations	Students' motivation to study was increased when getting credits for a subject required passing the end-of-semester exam. Students also mentioned that the frequent administration of short exams (e.g., testing the extent of knowledge acquisition) also encouraged them to review the subject content by the next class.
Subcategory 2-3-2: Difficult subjects for pass	Students tended to study hard when they knew that subjects would be difficult for them to pass unless they understood the subject content deeply and memorised it all. In particular, students tended to concentrate on classes where they had difficulty understanding the subject content without listening to the lectures carefully.
Theme 3: Providing explanation that facilitates students' understanding	Still another theme identified was “providing explanation that facilitates students' understanding”. Students' adoption of DAL was promoted when lecturers devised their explanation in a way that helped students understand the learning topics. Some lecturers used learning media to aid students' understanding when explaining. Other lecturers utilised a systematic and easy-to-understand explanation to enhance students' understanding.
Category 3-1: Explaining using learning media	Students' adoption of DAL was promoted when lecturers used learning media that helped students understand the learning materials. The types of media used in classes were illustrations, anatomical models, videos, and photos. Some lecturers also provided clinical stories of their own to facilitate students' understanding. Others provided the students with opportunities to experience the learning content in order to facilitate their understanding.
Subcategory 3-1-1: The utilisation of audio-visual media that help students grasp the learning contents	Students preferred lectures in which such audio-visual media as illustrations, anatomical models, videos, and photos were used. This was because these assisted them gaining a mental image of the learning contents, which were otherwise difficult to comprehend with only verbal explanation. The media also provided students with quasi-experience of clinical scenes and opportunities to explore body structure, which they had never experienced before.
Subcategory 3-1-2: The use of actual and fictitious scenarios that help students' understanding	Students appreciated lecturers' talking about their actual clinical experience in relation to learning contents, and/or lecturers' demonstration of a patient with a particular health problem. This was because such talk/demonstration helped them imaging and familiarise themselves with the learning contents, hence facilitating students' understanding of the topics. Many students also appreciated having clinical nurses talking about their patient experiences, because they were interested in the reality of clinical practice, of which they lacked experience. Listening to the stories of lecturers/nurses also helped them picture the nurse they wanted to be.
Subcategory 3-1-3: Providing opportunities for actual experience	Students' interest and understanding of the learning contents were improved by actual experience of (or see other students' experiencing) clinical situation. For instance, having an opportunity to intubate an infant using a simulation model and actual equipment used in the NICU engaged students' attention and interest.
Category 3-2: Systematic and easy-to-understand explanations	Students' understanding of the learning topics was facilitated when lecturers explained difficult concepts in plain language and gave examples. When lecturers explained the topic in a sequence based on a cause-effect relationship and/or based on its underlying mechanisms, students' interest and understanding of the learning topic were facilitated.
Subcategory 3-2-1: Easy-to-understand explanation	Students appreciated lecturers explaining difficult learning concepts and materials with easy-to-understand language/accounts and examples. Understandable explanation was essential for encouraging students' learning. On the other hand, when lecturers' explanation was difficult to follow and grasp, students said that they stopped trying to comprehend it because they simply could not understand it even though they tried hard. Students also complained about lecturers who continued with their lecture on the assumption that students understood everything, and who progressed too fast and left some students behind.
Subcategory 3-2-2: Explaining study topics in relation to others and/or in sequence	Students' interest in the learning topic was heightened when lecturers explained the topics based on cause and effect; when they explained them in relation to other subjects, which served as the foundation (e.g., explaining the necessity of nursing care based on pathophysiology and symptoms); and when they explained them in a sequential manner. Students also liked lectures where lecturers taught learning topics in relation to the contents of the national nursing examination, and what is necessary for nurses.
Theme 4: Providing knowledge that deepens and widens students' views	This theme is concerned with helping students extend their knowledge in vertical and horizontal ways: i.e., deepening students' professional knowledge and widening students' frame of reference. These are core aspects of learning. If the quality of learning in class is high, the quality of the approach to learning is also enhanced.
Category 4-1: Deepening students' professional knowledge	Students' approach to learning tended to be deep when they felt that the subject they were learning deepened their professional knowledge, and thus was important for their nursing career. In particular, when students found that the contents of a subject were related to areas which they wanted to pursue in their career, their approach to learning tended to be deep.
Subcategory 4-1-1: Important subjects for basic nursing	Students' motivation to learn did not only depend on the teaching methods of lecturers, but also on how they felt about the importance of the subjects. When students felt that certain subjects were important for nursing (i.e., those closely related to nursing, and provided basic as well as more professional nursing knowledge, which is necessary for good patient care), their DAL was facilitated. For example, students felt the need to study certain subjects because there were abundant opportunities to apply the learnt knowledge to their care; because they learnt the significance of the learning topics (e.g., the effect of treatment) through their clinical practice; and because the learning contents were helpful in preparing for the national nursing examination.
Subcategory 4-1-2: Subjects closely related to the occupations/ areas of practice students aspired to work	Schools of nursing at Japanese universities offer several courses for students (i.e., the courses for Registered Nurses, Public Health Nurses, Midwives, and School Nurses). When students were interested in becoming community nurses or midwives, they were more interested in subjects related to these occupations than those related to clinical nursing. Students aiming to become clinical nurses were more interested in studying subjects in specific clinical areas/specialties they wanted to practice in. Students wanted to deepen their knowledge in the areas in which they wanted to pursue their professional careers, thus, their personal interests drove students to DAL.

(*continued on next page*)

Table 3 (*continued*)

Themes, categories and subcategories	Brief description
Category 4-2: Widening students' frame of reference	Students' approach to learning tended to be deep when their frame of reference was widened through class. Two methods were identified as used by lecturers, and as effective in widening students' perspectives. One was widening the frame of reference through opinion sharing, and the other was providing knowledge, which could not be obtained from textbooks and lecture hand-outs.
Subcategory 4-2-1: Widening frame of reference through opinion sharing	Some lecturers utilised group work within or outside their classes. Students appreciated the group work because it provided opportunities for them to share their opinions with others and/or to learn from others' ideas and perspectives. These opportunities increased their interest in the subject.
Subcategory 4-2-2: Providing knowledge, which cannot be obtained from textbooks and lecture hand-outs	Students were interested in acquiring extra knowledge which widened their frame of reference and helped them understand the learning topics. When lecturers explained something which was not written in textbooks and hand-outs, students felt that they were learning something extra, something special, and something new, which boosted their interest in the topics. Providing extra knowledge to students also helped them understand the subjects.
Theme 5: Showing enthusiasm	The last theme identified was "showing enthusiasm". This theme represents lecturers' attitudes to students as well as to teaching. This theme consisted of one category: being enthusiastic.
Category 5-1: Being enthusiastic	Students' interest in a class and a subject was enhanced when lecturers showed interest in students; when they delivered lectures as if they were having a personal conversation with students; when they provided positive feedback to students; and when they demonstrated enthusiasm in teaching.
Subcategory 5-1-1: Showing interest in students	Students' interest in class was heightened when students felt lecturers were interested in them. This feeling occurred when students found lecturers had remembered their names, provided support for study (e.g., had listened to them and had given advice on how to work with learning problems), and noticed small changes in students (e.g., noticed when students felt unwell, or when they worked little bit harder in class). When students perceived lecturers trying to teach from students' standpoints, their interest and understanding of the learning topic were improved. On the other hand, students got bored when lecturers did not look at students during classes.
Subcategory 5-1-2: Delivering lectures as if conversing with students	When lecturers gave lectures as if they were conversing with them, students' interest in the class was improved. Some students preferred to keep the conversational ball rolling between lecturers and themselves, for example by lecturers posing questions and students answering them, or vice versa. Others just liked lecturers delivering the lecture as if they were talking to each student.
Subcategory 5-1-3: Providing positive feedback to students	Students were motivated to study when they received positive feedback from lecturers on their work (e.g., individual or group assignments).
Subcategory 5-1-4: Being enthusiastic	Students tried to respond positively when lecturers showed enthusiasm in their lectures. On the other hand, when lecturers seemed to lack motivation in teaching, students also did not show interest in the class and did not listen to lectures.

Theme1. Engaging students' attention

This theme is concerned with the teaching climate and approaches that increased students' attention to and interest in lectures. The theme consists of two categories: "Lecture with elements of fun" and "Facilitating students' concentration".

Category 1-1. Lecture with elements of fun. Students' attention to the class was facilitated when the lecture itself was enjoyable for them. The enjoyment was produced when the contents of the lecture were intriguing for students, and when educators themselves were funny and fun-loving (e.g., making jokes).

> *"When the lecture was enjoyable, I could listen to it with enthusiasm."*
>
> (ID 18)

Category 1-2. Facilitating students' concentration. Another method of engaging students' attention was helping students concentrate on classes. Some educators facilitated students' concentration by encouraging note-taking. For instance, educators encouraged students to take notes by specifying the points to be written down. Educators also used handouts, which contained only the main points of the lecture or brackets for students to fill in. These methods facilitated students' attention to lectures because without taking notes, they cannot review the lectures.

> "*If a handout contains blanks for us to fill in, the content of the lecture can more easily soak into my head.*"
>
> (ID 9)

Other method for facilitating students' attention to lectures was to create a sense of tension, which helped to create a quiet environment to assist students in concentrating on the class. To do so, some educators walked around a classroom while giving lectures, and others posed questions and asked students to answer them in front of the others.

> "(*My concentration was*) *heightened... I had to listen to the lecture… When I thought that I might be asked to answer the question, …sort of (laugh)…I tensed...*"
>
> (ID 19)

To improve students' concentration, some educators balanced times of tension with times for relaxation by inserting small talk and videos during the class, or by varying the tone of their voices. This balancing was necessary because students' concentration on the class did not last for long, and unwinding students' tension was necessary so they could rest and recharge their mental energy for the next period of concentration.

> *"When my concentration was about to ebb, the teacher wandered from the subject and made small talk…there was laughter in the class…the teacher switched my concentration on and off."*
>
> (ID 10)

Theme 2. Facilitating learning activities

This theme is related to teaching approaches and assessment that facilitated students' learning activities. Three categories constitute this theme: "Facilitating learning activities in class", "Providing direction and points for study", and "Setting tasks".

Category 2-1. Facilitating learning activities in class. Students' learning activities in class were encouraged when they had opportunities to think and discuss in class, actively participated in class activities such as engaging in practical tasks, role-playing, group work, or even reading aloud a textbook, and had chances to ask questions easily and in a timely manner.

> *"When I had opportunities to think about something in class, for example, if a teacher asked us "What do you think about this", I was motivated to study at home as well."*
>
> (ID 20)

"Uhum... a clinical scenario! When we had a lot of opportunities to think of clinical problems presented by a teacher, I was able to participate in the class actively."

(ID 22)

Category 2-2. Providing direction and points for study. Students appreciated educators providing them with direction and points for study. For example, some students appreciated educators giving them feedback on their work, or giving them short tests to identify their own strengths and limitations. In this way, the students could identify the best direction of their study, and engage in self-learning.

"A teacher pointed out the parts I could not do well in an assignment in detail, so I could understand my weaknesses...it was effective."

(ID 15)

"For example, in a chronic disease class, we studied representative symptoms of diabetes first, and then answered questions (in a short test) in the class…in doing so, we went back to previous handouts, checked the contents for where we made mistakes, marked those parts with a red pen...it was good (for active learning)."

(ID 22)

The students also appreciated educators' specifying what and how to study, and emphasising which subjects were important for their future. These specifications made them identify which learning activities were important and should be pursued.

"I felt as if we had been taught… "Among these things, this part is important" "Among those, that part is important", … I am motivated to listen to the lecture."

(ID 23)

Category 2-3. Setting tasks. Setting tasks also improved students' motivation to study. Simply setting an exam drove students to self-learning. If the exam was known to be difficult to pass, students' motivation to study in and out of class was further stimulated.

"Our seniors told us "you cannot answer the exam questions, unless you have really studied hard."…Passing the exam was difficult, … so we needed to listen to the lecture carefully."

(ID 19)

Theme 3. Providing explanation that facilitates students' understanding

The theme is concerned with teaching approaches that increased students' interest and understanding of their learning topics. This theme consists of two categories: "Explaining using learning media" and "Systematic and easy-to-understand explanations".

Category 3-1. Explaining using learning media. Students' adoption of the DAL was promoted when educators used learning media that helped students understand the learning materials. The types of the media used in classes were illustrations, anatomical models, videos, and photos. In addition, educators' talks or demonstration of actual clinical scenes also facilitated students' visualisation and understanding of the learning contents.

"I had very idiosyncratic images of psychiatric patients…I was scared… But, psychiatric nursing teachers…demonstrated the reconstruction of a clinical scene where, for example, patients with depression displayed this and that symptom using their bodies…it would have been hard to comprehend the symptoms if we had to read only words (in the textbook)...that was a time I had the most interest." (ID 17)

Students' interest in and understanding of the learning content were further facilitated by actual experience of a clinical situation. For instance, having an opportunity to intubate an infant using a simulation model and actual equipment used in the Neonatal Intensive Care Unit increased students' attention and interest in the class.

Category 3-2. Systematic and easy-to-understand explanations. Students' understanding of learning topics was facilitated when educators explained difficult concepts using plain language and examples. Their interest and understanding were also heightened when educators explained the topics based on the cause and effect; when they explained them in relation to other subjects; and when they explained them in a sequential manner.

"The teacher explained... (body mechanisms) in sequence! (He explained) "This organ has these functions, so (if this organ fails to function) this disease will occur,…and if this organ becomes dysfunctional, that organ will also be dysfunctional, etc."…"

(ID 11)

Theme 4. Providing knowledge that deepens and widens students' views

This theme is concerned with teaching objectives/contents and approaches that helped students extend their knowledge in vertical and horizontal ways: i.e. "Deepening students' professional knowledge" and "Widening their frame of reference".

Category 4-1. Deepening students' professional knowledge. Students' motivation to learn did not only depend on the teaching approaches used by educators, but also on how they felt about the importance of subjects. When students felt that certain subjects deepened their professional knowledge, their DAL was facilitated. In particular, when students found that the contents of a subject were related to areas which they wanted to pursue in their career, they tended to adopt the DAL.

"I did (study at home). Maternity nursing as well. The reason I came here to study was to become a midwife. So, I've been working hard on (understanding) maternity nursing from the beginning."

(ID 20)

Category 4-2. Widening students' frame of reference. Students' adopted the DAL when their frame of reference was widened through class. Two methods were identified as being effective in widening students' perspectives. One was opinion sharing with other students.

"I like group work…It was fun to learn the opinions of others through discussion with friends…it was fun to have my frame of reference widened."

(ID 5)

The other method used by educators was providing extra knowledge that could not be obtained from textbooks or lecture handouts. When educators explained something that was not written in textbooks and handouts, students felt that they were learning something extra and something new, which boosted their interest in the topic.

"I think just reading a textbook is something I can do myself. So I want to learn something extra (in class) which is not written in the textbook."

(ID 17)

"…If something can be learnt only in that lecture, then I can listen with interest."

(ID 3)

Theme 5. Showing enthusiasm

The last theme represents educators' attitudes towards students as well as teaching. This theme consists of one category: "Being enthusiastic".

Category 5-1. Being enthusiastic. Students' interest in class and a subject

was enhanced when they felt that the educators were enthusiastic. These feelings occurred when students found educators had remembered their names, when educators provided support for their study, and when educators tried to teach from the students' perspective. Furthermore, when educators delivered lectures as if they were conversing with the students, and/or when they provided positive feedback to students, the students' interest in class and their motivation to study were also elevated. Lastly, students' motivation was heightened when educators demonstrated enthusiasm in teaching.

> "*We all thought that we wanted to repay the teachers for what they were trying to teach us with such great effort.*"
>
> (ID 17)

Discussion

The present study explored teaching context, which facilitated nursing students' adoption of the DAL. The results showed that when educators engaged students' attention, facilitated learning activities, provided explanations that facilitated their understanding, provided knowledge that deepened and widened their views, and showed enthusiasm, the students' adoption of the DAL was encouraged.

Engaging students' attention in lectures was the first step in promoting students' intrinsic motivation to study, which is the fundamental aspect of the DAL (Biggs, 2001). Without attention, students' interest in a subject and their desire to understand it will not be aroused. Keller (1987, 2000) stated that engaging students' attention involves a two-phase endeavour: the first phase is to direct students' attention to the appropriate stimuli, and the next is to sustain their attention during the lecture. Students' initial attention can be attracted, for instance, by starting a lecture with a clinical story which highlights the learning topic of the day, since students are often interested in the reality of clinical practice. If appropriate, making jokes can also be an effective way of getting students' attention. Sustaining their attention is much more difficult than getting their initial attention. The findings suggest that encouraging students to take notes, walking round the classroom, and posing questions for students to answer can be good means to create tension and concentration within students. Creating tension also contributes to sustaining a quiet learning environment, which further helps students pay attention and concentrate. However, existing studies suggest that maintaining students' attention during an entire class is challenging, as students' attention to lectures tends to fade away soon after the lecture begins (Bradbury, 2016; Lamba et al., 2014; Wilson & Korn, 2007). This can be particularly true if a lecture speaks in a monotonic voice. Thus, it is important for educators to make short breaks or to introduce variability in teaching, for example by showing videos (see Keller, 1987) so as to balance the time for concentration and relaxation. In this way, students can recharge their mental energy and prepare for the next period of concentration.

The second context that enhanced students' adoption of the DAL, was the facilitation of learning activities in and out of class by educators. By facilitating students' learning activities, such as group work/discussion, solving clinical problems, and role-playing in class, students can feel that they are active participants in a class and take control of their learning. These feelings are important for sustaining the DAL, because the sense of autonomy elicits intrinsic motivation in individuals (Deci, Ryan, & Guay, 2013). Furthermore, Dolmans et al. (2016) argue that an activity such as problem-solving in small groups helps students see presented problems from different angles, critically examine the underlying principles and mechanisms, integrate and relate different information sources, and apply them to solve the problem. Since the DAL involves higher-order cognitive activities including "applying", "hypothesising", "relating", and "arguing" rather than lower-order activities of "memorising" and "paraphrasing" (Biggs & Tang, 2007), working on a clinical scenario and solving a clinical problem in groups is effective in teaching learning approaches and strategies necessary to implement the DAL (Dolmans et al., 2016).

In addition to class activities, providing direction and points of study, along with appropriate assessment of student's learning are essential to facilitate the DAL. Since the DAL involves such learning strategies as reading widely and researching extensively (Snelgrove, 2004), providing direction and points for study could make it easier for students to engage in the DAL. In addition, giving students feedback on their work helps them identify their own learning needs (Canniford & Fox-Young, 2015), which motivates them to engage in self-study. Students' motivation to study also come from tasks, including exams, set by educators. However, caution is required when preparing for an exam. If an exam requires only reproduction of memorised learning, it will encourage students' adoption of the SAL. Thus, exams should preferably contain scenario-based questions, which could assess students' understanding of learning topics (Leung et al., 2008).

The third context that encouraged the DAL was educators' provision of explanations to facilitate students' understanding of learning topics. Entwistle and Walker (2001) maintain that among many ingredients that facilitate the DAL, the three Es, represented by explanation, enthusiasm, and empathy, are the most effective contributors. Good explanation by educators is fundamental to facilitating the DAL. This is because the intention of taking the DAL for students is to understand learning topics in depth (Biggs & Tang, 2007), and good explanation helps them achieve their aim. The findings indicated that explanation complemented by the use of learning media and/or clinical examples are good means to facilitate students' understanding. Nursing students need to study concepts and mechanisms, such as anatomical functions, pathological mechanisms, and interpersonal relationships with patients, which they cannot directly observe in the classroom. Audio-visual media help them understand the mechanisms and concepts, which are difficult to explain verbally, through acoustic and optic sensations (Agama-Sarabia et al., 2017). Therefore, the use of media not only maintains students' attention, but also improves their understanding of learning topics.

Furthermore, the way educators explain learning topics has a significant impact on students' adoption of the DAL. Explaining difficult concepts with plain language and examples, relating new knowledge to other concepts, and explaining in a sequence - all served to induce the DAL. This is natural, since the DAL involves linking, integrating and building new knowledge on existing knowledge (Biggs & Tang, 2007; Geitz, Brinke, & Kirschner, 2015), describing the underlying mechanisms of a phenomenon, and exploring the cause-effect relationship (Marton & Säljö, 1976). In fact, a study showed that cohesive explanations, represented by less fragmented and more intertwined explanations, by expert educators contributed to students' engagement in the DAL (Lachner & Nückles, 2015). Hence, a good explanation is vital in encouraging students' use of the DAL.

The fourth context that enhanced the DAL was providing students with knowledge that deepened and widened their views. The results showed that a subject which deepens students' professional knowledge is likely to facilitate the DAL. This finding is consistent with those of other researchers (see the literature review by Baeten, Kyndt, Struyven, & Dochy, 2010). The reason for encouraging the DAL is that if a subject is relevant, important and of value to students, it will instill intrinsic motivation to study it within students (Biggs & Tang, 2007; Keller, 2000). However, students sometimes do not notice how important a subject is for their careers. Thus, it is necessary to explain the significance of a subject to students in order to increase their motivation to study it.

Students' adoption of the DAL can also be encouraged if a lecture stimulates students' curiosity, which turns them into active self-learners. One way to do this is to challenge a student's perspective and provide opportunities to widen it. Opinion sharing through group work/discussion enhances students' willingness to learn (Gagnon & Roberge, 2012). Giving extra information is also a good strategy which educators can use in everyday practice.

Finally, showing enthusiasm, which is another of the three Es (Entwistle & Walker, 2001), had a positive impact on students' adoption of the DAL. According to Biggs (1993), educators and students are in a reciprocal relationship, in which educators' perceptions of students' motives influence their teaching decisions, while students' perceptions of teaching context affect their motives. Thus, if educators are enthusiastic, their motivation to teach will positively impact on students' motivation to study, which further affects educators' enthusiasm to teach. Educators should keep in mind that it is their role to initiate this positive reciprocity. Showing interest in students, talking to each student in class to make the lecture personal to them, providing positive feedback to encourage students, and showing motivation to teach are things which educators can do to demonstrate their enthusiasm. Such activities will enhance students' attention to lectures and their learning experience (Chan, Tong, & Henderson, 2017).

Limitations

There are several limitations to this study. First, the study was conducted in Japan. Thus, the transferability of the findings to other countries may be limited. Second, the themes identified in this study should be empirically tested to determine if they really contribute to the use of the DAL. Third, the students' personal factors that contribute to their use of the DAL need to be explored. This is because the students' adoption of the DAL is not only determined by their perceptions of teaching context, but is also influenced by personal factors (Biggs, 2001).

Conclusion

There are many ways nurse educators can turn students into active self-learners and help them understand learning materials in depth. Regardless of what approaches nurse educators use in teaching, certain features of the learning context must be in place to help students adopt the DAL. These are: engaging students' attention, facilitating learning activities, providing explanation that facilitates students' understanding, providing knowledge that deepens and widens their views, and showing enthusiasm. Nurse educators should integrate these features into their everyday teaching to encourage students' adoption of the DAL.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

Declaration of interest

This study was supported by JSPS KAKENHI (Grant Number 17K12147).

References

Agama-Sarabia, A., Trejo-Niño, G., De-la-Peña-León, B., Islas-Ortega, M., Crespo-Knopfler, S., Martínez-Felipe, L., & González-Velázquez, M. S. (2017). Audiovisual aids in nursing education: Literature review. *Enfermeria Global, 47*, 526–538.

Aydın, B., & Demirer, V. (2016). Flipping the drawbacks of flipped classroom: Effective tools and reccomendation. *Journal of Educational and Instructional Studies, 6*(1), 33–40.

Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2010). Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness. *Educational Research Review, 5*(3), 243–260.

Bevan, S. J., Chan, C. W. L., & Tanner, J. A. (2014). Diverse assessment and active student engagement sustain deep learning: A comparative study of outcomes in two parallel introductory biochemistry courses. *Biochemistry and Molecular Biology Education, 42*(6), 474–479.

Biggs, J. (1987). *Student approaches to learning and studying.* Hawthorn, VIC: Australia: Council for Educational Research.

Biggs, J. (1993). What do inventories of students' learning processes really measure? A theoretical review and clarification. *British Journal of Educational Psychology, 63*(1), 3–19. https://doi.org/10.1111/j.2044-8279.1993.tb01038.x.

Biggs, J. (2001). Enhancing learning: A Metter of style or approach? In R. J. Sternberg, & L. Zhang (Eds.). *Perspectives on thinking, learning, and cognitive styles* (pp. 73–102). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology, 71*(1), 133–149. https://doi.org/10.1348/000709901158433.

Biggs, J., & Tang, C. (2007). *Teaching for quality learning at university.* New York: Open University Press.

Bradbury, N. A. (2016). Attention span during lectures: 8 seconds, 10 minutes, or more? *Advances in Physiology Education, 40*, 509–513.

Campbell, C. M., & Cabrera, A. F. (2014). Making the mark: Are grades and deep learning related? *Research in Higher Education, 55*(5), 494–507.

Canniford, L. J., & Fox-Young, S. (2015). Learning and assessing competence in reflective practice: Student evaluation of the relative value of aspects of an integrated, interactive reflective practice syllabus. *Collegian, 22*(3), 291–297. https://doi.org/10.1016/j.colegn.2014.04.003.

Chan, Z. C. Y., Tong, C. W., & Henderson, S. (2017). Uncovering nursing students' views of their relationship with educators in a university context: A descriptive qualitative study. *Nurse Education Today, 49*, 110–114. https://doi.org/10.1016/j.nedt.2016.11.020.

Deci, E. L., Ryan, R. M., & Guay, F. (2013). Self-determination theory and actualization of human potential. In D. M. McInerney, H. W. Marsh, R. G. Craven, F. Guay, D. M. McInerney, H. W. Marsh, R. G. Craven, & F. Guay (Eds.). *Theory driving research: New wave perspectives on self-processes and human development* (pp. 109–133). Charlotte, NC, US: IAP Information Age Publishing.

Dolmans, D. H., Loyens, S. M., Marcq, H., & Gijbels, D. (2016). Deep and surface learning in problem-based learning: A review of the literature. *Advances in Health Sciences Education, 21*(5), 1087–1112. https://doi.org/10.1007/s10459-015-9645-6.

Entwistle, N. (2000). Promoting deep learning through teaching and assessment: Conceptual frameworks and educational contexts. *Paper presented at the TLRP conference, Leicester*.

Entwistle, N., & Walker, P. (2001). Conceptions, styles, and approaches within higher education: Analytic abstractions and everyday experience. In R. J. Sternberg, & L. Zhang (Eds.). *Perspectives on thinking, learning, and cognitive styles* (pp. 103–136). Mahwah: NJ: Taylor & Francis.

Gagnon, L. L., & Roberge, G. D. (2012). Dissecting the journey: Nursing student experiences with collaboration during the group work process. *Nurse Education Today, 32*(8), 945–950. https://doi.org/10.1016/j.nedt.2011.10.019.

Geitz, G., Brinke, D. J.-t., & Kirschner, P. A. (2015). Goal orientation, deep learning, and sustainable feedback in higher business education. *Journal of Teaching in International Business, 26*(4), 273–292.

Gholami, M., Moghadam, P. K., Mohammadipoor, F., Tarahi, M. J., Sak, M., Toulabi, T., & Pour, A. H. H. (2016). Comparing the effects of problem-based learning and the traditional lecture method on critical thinking skills and metacognitive awareness in nursing students in a critical care nursing course. *Nurse Education Today, 45*, 16–21. https://doi.org/10.1016/j.nedt.2016.06.007.

Hay, D. B. (2007). Using concept maps to measure deep, surface and non-learning outcomes. *Studies in Higher Education, 32*(1), 39–57.

Hu, R., Gao, H., Ye, Y., Ni, Z., Jiang, N., & Jiang, X. (2018). Effectiveness of flipped classrooms in Chinese baccalaureate nursing education: A meta-analysis of randomized controlled trials. *International Journal of Nursing Studies, 79*, 94–103. https://doi.org/10.1016/j.ijnurstu.2017.11.012.

Huang, H.-M., Huang, C.-Y., Lee-Hsieh, J., & Cheng, S.-F. (2018). Establishing the competences of clinical reasoning for nursing students in Taiwan: From the nurse educators' perspectives. *Nurse Education Today, 66*, 110–116. https://doi.org/10.1016/j.nedt.2018.04.007.

Kamath, N., & Udayakiran, N. (2015). Effectiveness of Participatory Learning Activity (PLA) and lecture method on knowledge in HIV/AIDS among nursing students. *International Journal of Nursing Education, 7*(2), 223–228. https://doi.org/10.5958/0974-9357.2015.00109.9.

Keller, J. M. (1987). Development and use of the ARCS model of instructional design. *Journal of Instructional Development, 10*(3), 2–10.

Keller, J. M. (2000). How to integrate learner motivation planning into lesson planning: The ARCS model approach. *Paper presented at the VII Semanario, Santiago, Cuba*.

Kilroy, D. A. (2004). Problem based learning. *Emergency Medicine Journal,* 411–413. https://doi.org/10.1136/emj.2003.012435.

Lachner, A., & Nückles, M. (2015). Bothered by abstractness or engaged by cohesion? Experts' explanations enhance novices' deep-learning. *Journal of Experimental Psychology: Applied, 21*(1), 101–115. https://doi.org/10.1037/xap0000038.

Laird, T. F. N., Seifert, T. A., Pascarella, E. T., Mayhew, M. J., & Blaich, C. F. (2014). Deeply affecting first-year students' thinking: Deep approaches to learning and three dimensions of cognitive development. *Journal of Higher Education, 85*(3), 402–432.

Lamba, S., Rawat, A., Jacob, J., Arya, M., Rawat, J., Chauhan, V., & Panchal, S. (2014). Impact of teaching time on attention and concentration. *IOSR Journal of Nursing and Health Science, 3*(4), 1–4.

Lee, H.-J., & Baek, E.-O. (2012). Facilitating deep learning in a learning community. *International Journal of Technology and Human Interaction, 8*(1), 1–13. https://doi.org/10.4018/jthi.2012010101.

Leung, S. F., Mok, E., & Wong, D. (2008). The impact of assessment methods on the learning of nursing students. *Nurse Education Today, 28*(6), 711–719.

Ling-Na, K., Bo, Q., Ying-Qing, Z., Shao-Yu, M., & Hui-Ming, G. (2014). The effectiveness of problem-based learning on development of nursing students' critical thinking: A systematic review and meta-analysis. *International Journal of Nursing Studies, 51*(3), 458–469. https://doi.org/10.1016/j.ijnurstu.2013.06.009.

Lublin, J. (2003). Deep, surface and strategic approaches to learning. Retrieved from https://www2.warwick.ac.uk/services/ldc/development/pga/introtandl/resources/

2a_deep_surfacestrategic_approaches_to_learning.pdf.
Marton, F., & Säljö, R. (1976). On qualitative differences in learning: 1—outcome and process. *46*(1), 4–11.
Marton, F., & Säljö, R. (1997). Approaches to learning. In F. Marton, D. Hounsell, & N. J. Entwistle (Eds.). *The experience of learning: Implications for teaching and studying in higher education* (pp. 39–58). Edinburrgh: Scottish Academic Press.
Ministry of Health Labour and Welfare (2011). Report on the content and methods of nursing education. Retrieved from https://www.mhlw.go.jp/stf/shingi/2r9852000001 3l6y-att/2r98520000013lbh.pdf.
Ramsden, P. (1988). Context and strategy. In R. R. Schmeck (Ed.). *Learning strategies and learning styles* (pp. 159–184). New York: Plenum Press.
Rice, P. L., & Ezzy, D. (1999). *Qualitative research methods: health focus.* Victoria, Australia: Oxford University Press.
Salamonson, Y., Weaver, R., Chang, S., Koch, J., Bhathal, R., Khoo, C., & Wilson, I. (2013). Learning approaches as predictors of academic performance in first year health and science students. *Nurse Education Today, 33*(7), 729–733. https://doi.org/10.1016/j.nedt.2013.01.013.
Snelgrove, S. R. (2004). Approaches to learning of student nurses. *Nurse Education Today, 24*, 605–614.
Turner, M., & Baskerville, R. (2013). The experience of deep learning by accounting students. *Accounting Education, 22*(6), 582–604.
Wang, J.-S., Pascarella, E. T., Nelson Laird, T. F., & Ribera, A. K. (2015). How clear and organized classroom instruction and deep approaches to learning affect growth in critical thinking and need for cognition. *Studies in Higher Education, 40*(10), 1786–1807.
Wilson, K., & Korn, J. H. (2007). Attention during lectures: Beyond ten minutes. *Teaching of Psychology, 34*(2), 85–89.