



Research article

Undergraduate nursing students' perceptions of active learning strategies: A focus group study

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ABSTRACT

Background: Active learning strategies have been identified as promoting critical thinking, strengthening clinical reasoning, and supporting the transfer of theoretical knowledge to practice amongst nursing students.

Aim: This study aimed to understand the undergraduate nursing students' perceptions of the active learning strategies being used in the classroom and to identify critical elements within their learning spaces which contribute to their learning.

Design: Qualitative, focus group study.

Setting: A four-year undergraduate baccalaureate nursing program in the Middle East.

Participants: 50 undergraduate nursing students selected through purposive and snowball sampling participated in the study.

Methods: Five focus group sessions were conducted with 10 participants in each session. Data collected from the discussions were transcribed and thematically analyzed and aligned with the Taxonomy of Significant Learning.

Results: Study results show that undergraduate nursing students affirm that the use of active learning strategies supports the acquisition of foundational understanding, application and integration of knowledge, caring about the learning process, learning to learn, and the human dimension of learning. Participants also identified how best active learning strategies should be utilized and aspects of learning spaces that promote learning.

Conclusions: Although the use of active learning strategies positively enhances the learning process, it is important to ensure that strategies are intentionally integrated into the classroom and aligned with the expected learning outcomes. Considerations of the learning space used are also of importance.

1. Introduction

Nursing practice is complex, and learning for nursing students can be challenging as nursing students must integrate multiple learning domains. Active learning strategies have been identified as pedagogical approaches that engage students in the classroom and spur the higher-order thinking necessary in nursing education and practice (Chan et al., 2021). Learners engage in the learning process by interacting with the content and then reflecting to create new knowledge. During the learning process, students acquire new knowledge through activities or conversations that aid learning, in contrast to acquiring knowledge passively. The use of active learning strategies in nursing education has been explored internationally and found to significantly improve critical thinking abilities, clinical performance, knowledge competence, and the

translation of nursing knowledge to clinical skills (Shin et al., 2014; Ghezzi et al., 2021). Researchers have also observed that active learning encourages a deeper understanding of the material being learned, increases test scores, and improves self-efficacy for nursing students (Ghezzi et al., 2021). Active learning strategies include problem-based strategies, such as case studies and concept-based mapping; collaborative and cooperative learning strategies, such as group work and discussions; and experiential approaches, such as the use of simulation or standardized patients and reflective practice, amongst others (Carvalho et al., 2017).

As active learning has become significantly crucial in student-centered pedagogy, understanding how physical space supports learning and concerns about physical learning spaces have arisen. It has been identified that the conscious design of learning spaces to encourage

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active learning increases innovation in education, as well as conceptual and applied forms of learning and engagement in the learning process (Baeppler et al., 2016). Beichner et al. (2007) reported an increase in students' conceptual understanding, skills, and attendance and a reduction in the student drop-out rate over time after the reconfiguration of the classroom to an active learning space. Similarly, a systematic review of 108 articles from multiple countries found significant relationships between the learning space and positive learning outcomes (Leijon et al., 2022).

Active learning is a student-focused approach to teaching, with an increasing body of research supporting its use in nursing education. In addition, the importance of the appropriate learning space to support active learning has been highlighted. However, in nursing educational research, there is a scant contribution from the Middle Eastern nursing context. To address this gap, this qualitative study aims to investigate undergraduate nursing students' perceptions of active learning strategies currently being used in their classrooms and identify critical elements within their learning spaces that are meaningful to their learning.

2. Method

2.1. Study design

A qualitative approach was adopted with focus groups used as a method of data collection to encourage co-construction of knowledge by participants (Rodriguez et al., 2011). Focus group discussions aim to provide a space for participants who share similar characteristics to engage in an interactive, moderated discussion session that generates diverse perspectives (Hennink, 2014). Perceptions are subjective and based on an individual's interpretation of the phenomenon under study, in this case, active learning strategies. Adopting a social constructivist lens, which assumes that multiple realities exist based on different individuals' experiences, enables the authors to view the perceptions of the participants as reality (Creswell and Creswell, 2018). As educators, the authors implement active learning strategies and this research project is an attempt to evaluate the effects of active learning strategies on learning from the student's perspective. Cognizant that our experiences and bias can affect our interpretation of the data from this study, the authors focus explicitly on highlighting the student's experiences with active learning.

2.2. Theoretical framework

The conceptual framework Taxonomy of Significant Learning (Fink, 2013) provides the foundation for the study design. According to Fink, for meaningful learning to occur, the learner needs to undergo a change as a result of the learning experience. The taxonomy is a framework to support the process of creating meaningful learning experiences that deepens students' learning, and incorporates core skills needed in today's world. The taxonomy includes six categories: foundational knowledge - the basic understanding of the topic being learned which is required as a foundation to build on, application of knowledge - the process of participating in intellectually, physically, or socially stimulating activities while learning, integration - connecting current learning to prior knowledge and experiences, human dimension - learners learning something important about themselves or others during the learning process, caring - when the learning experience encourages learners to care, and learning how to learn - learning something about the process of learning. Adopting the six categories in our work, we agree with Fink that for learning to be meaningful, a change needs to occur within the learner. We believe that undergraduate participants in our research project might experience a transformation by actively participating in the learning process, as evidenced by the six categories within the taxonomy.

2.3. Setting and participants

Participants were recruited through a purposive and snowballing sampling approach from the 417 students enrolled in a four-year undergraduate nursing program in Qatar (Creswell and Creswell, 2018). Email and posters were used to recruit potential participants from the student population. Students were invited to sign up for focus group sessions based on availability and interest. Based on interest from participants, five focus groups sessions were held with 10 students from various years in each group. Focus group discussion sessions were held between January and March 2020. All focus group participants were female except for one male student. This is representative of the student population at the institution which is 90 % female.

2.4. Data collection

Participants were invited to elaborate on their experience with active learning strategies and learning spaces. As the authors were faculty members at the institution, focus group discussions were facilitated by trained research assistants to avoid power disparities. Semi-structured open-ended questions were used to guide the sessions, which started with a broad question asking students to describe their most memorable learning experience. The facilitator used prompts and guiding questions aligned with the research questions to facilitate interactive discussions. During the sessions, participants were able to co-construct knowledge with other participants, clarify their thinking based on what they heard, and elaborate on their perspectives. Field notes were used to document observations of interactions during focus group discussion sessions. Focus group sessions were conducted at the university, with the conversations recorded and professionally transcribed.

2.5. Data analysis

As the goal of the research project is to describe the perceptions of undergraduate nursing students, we adopted the six-phase theoretical thematic analysis approach to analyzing data (Braun and Clarke, 2006). During the first phase of the analysis process, the authors familiarized themselves with the data by reviewing the transcribed data and making notes of initial thoughts. In the second phase, the authors individually engaged in the coding process using In Vivo codes with participants' words used as the codes (Saldana, 2021). Group discussions were held amongst the authors during the third phase of the analysis process to discuss identified codes and reach a consensus on codes to use. In the next phase, the authors engaged in reflective discussions to identify themes from the emerging patterns within the data and organized codes around identified themes. In the fifth phase, the themes were further refined, with ascribed meaning clarified, and aligned with the theoretical framework. All the authors engaged in writing the report in the final phase of the project.

2.6. Trustworthiness

Trustworthiness issues were addressed during the research process. The credibility of this study was established by researcher triangulation, transferability was established by providing a thick description and participant exemplars, dependability was established by keeping detailed and documented records, and conformability was established by agreement between the authors through discussions. Researcher reflexivity was achieved by keeping detailed records of research decisions and researcher debriefings during the research process.

2.7. Ethical considerations

Ethics approval was received from the Conjoint Health Research Ethics Board, University of Study (ref: REB19-0512.REN1) and the Primary Health Care Corporation Ethics Board (ref: PHCC/IEC/19/07/

003). Participation was voluntary, and participants completed consent forms with the knowledge that anonymity could not be guaranteed for participants in focus group sessions. However, all data collected were anonymized before analysis.

3. Findings

Study participants shared their perception of the active learning strategies being used in their classrooms at the institution of study. Themes from the analysis of the data collected include the effects on learning, self-awareness, and teaching influence. In the following section, themes are aligned with Fink's Taxonomy of Significant Learning, the theoretical framework for the study.

3.1. Effects on learning

The effects of active learning strategies on students learning were clearly articulated by the study participants.

3.1.1. Acquiring foundational knowledge

Overall, study participants believed that active learning strategies used in the nursing classroom at UCQ were instrumental in the development of foundational knowledge of the topics being taught. Undergraduate nursing students felt that they could recall learning better as engaging in active learning activities helped simplify the learning process, reinforce learning, and foster retention of what was learnt. Participants used descriptors such as participants B2 (B-participant, 2-focus group session) mentioned "*stick to your mind*" or A5 stated, "*be in my mind*," and "*not forget*" to represent the result of learning actively. One student, participant A3, explained that "*active learning really helps me to understand*", while participant C1 added that "*it makes us remember the thing for longer...when we are being involved in the topics being taught, we remember them for a longer time as compared to the class where just the instructor is speaking*". The opportunity to actively engage in the learning process helped undergraduate nursing students gain a basic understanding and foundational knowledge as they understood content better when compared to learning passively.

Active learning strategies identified by multiple students that promote foundational knowledge include collaborative strategies such as group work with examples including small group discussions or jigsaws described by participants as the "upside down classrooms". Participant A3 explained that "... *there's that idea where it's very difficult for you to understand*", but then participant C3 mentioned that "*when another student explains it for you in the group work, they make it easier, so that's, like they can simplify the information for you*". Other active learning strategies identified by participants that support basic understanding of the topic include resolving and reviewing questions, quizzes, or the use of computer adaptive tests that are levelled to foster the acquisition of basic knowledge and stimulate critical thinking. Participants (A3, B3, and C3) also identified the instructor's use of storytelling and visual aids, including videos, photos, diagrams, and animations, as contributing to the acquisition of foundational knowledge.

3.1.2. Application

Engaging in active learning activities enables students to think critically, creatively, or productively while acquiring new skills through knowledge application. Undergraduate nursing student participants acknowledged improved ways of thinking critically and creatively and enhanced communication and collaboration skills when active learning strategies are used. Participant A4 described this experience "*It already happened to me in one class, We had a combination of case studies that kind of stimulate your critical thinking like the question is not yes or no. Whether you know the information or not, no. You have to dig through..... the given material and then work it out based on the information that you've been taught, and then you're going to get an answer. So, I really liked that, and I really liked how it builds your critical thinking. ...*".

Examples of active learning strategies that promote the application of knowledge, according to study participants, include questioning by the instructor or reviewing and resolving questions related to the topic. Other strategies are reflection activities, the use of games, visuals, and flipped classroom strategies where students have the opportunity to review pre-work on the relevant topics before class, quizzes and case studies. The use of these strategies in the classroom creates an opportunity for students to apply critical and creative thinking skills during the learning process.

3.1.3. Integration

Participants affirmed that the use of active learning strategies enabled the transfer of learning to clinical practice. It enhances the process of making connections to future nursing practice, in addition to reflecting on and connecting learning to real-life situations. Participant C4 described this experience as "*it helps in a way that when we do active learning [than] the lecture and then we go back to the clinical setting, we still remember the information even though we didn't review the information. It already sticks in our minds. It's kind of easy to do the clinical and understand what's going on.*"

Active learning strategies that support the integration of knowledge according to participants include the use of simulation, case studies, clinical and lab experiences, stories, group work, and activities that include reflection.

3.2. Self-awareness

3.2.1. Human dimension

Participants noted that the use of active learning strategies made them more engaged in the learning process as they were expected to participate. Furthermore, students identified improved relations with other students, an increase in self-awareness of their learning preferences, and the opportunity to engage in experiences out of their comfort zones as gains of active learning. Most participants agreed with the fact that the use of collaborative active learning strategies increased inclusiveness in the classroom as they acknowledged the perspectives of their classmates. Participant A2 explained, "*I like the active learning strategy. It increases my sense of being responsible for the learning, makes me more involved as a part of the learning and also interacting with the instructor.*"

According to the participants, active learning strategies that promote the human dimension in learning include the use of role-play, group work, discussion, sharing in class, case studies, storytelling, and activities that include reflection.

3.2.2. Caring

Participants in this study believed that the use of active learning strategies motivated them to aim to achieve even more. They felt encouraged to attend classes and enjoy the learning process as they adopted new values, interests or developed new feelings. As participant D4 stated "*I feel like active learning actually encourages me to go to class, whereas if it was the traditional way, I wouldn't want to go to my classes.*"

Active learning strategies that foster caring include the use of storytelling and group discussions, as participant C4 mentioned "*I think it help [s] you to learn more about the material when the instructor like shares the clinical plus personal experience like when she was a student. It actually motivates you to become someone like the instructor who is actually good [at] engaging the student and all that. It will actually make me study more.*"

3.2.3. Learning to learn

Participants (B4, C4, and D4) believed that the use of active learning strategies in their classrooms helped them to organize learning effectively, seek further knowledge around what was being learned on their own, and engage in independent learning. Participant C4 explained that, "*Active learning actually really makes the course more interesting and more engaging and makes me like I want to do something about it. I want to study more about the topic themselves.*"

Strategies identified by undergraduate students that encourage the process of learning to learn include the use of case studies, games, and challenging questions that made them go further in search for answers.

3.2.4. Control

Some of the participants in this study linked the learning space to a learning strategy. Although most participants preferred an active learning approach, it was also stressed that there is room to accommodate formal lecture settings with a larger group of students. Some of the participants were particularly interested in using a U-shaped or circle table in the learning environment. Participant A2 specified *"And in the lab, the u-setting is better than groups because there are few people in the lab, sitting in a circle, right?"*. Having a choice to decide on the type of furniture they use or choosing the group they are working with to do activities was significantly important to them. Participant C2 stated, *"I will sleep, I need hard furniture... like a wooden chair"*, when Participant A4 mentioned *"I prefer the students to choose where they feel comfortable to sit, and who are. The people that they feel more comfortable with."*

Although the participants recommended access to natural light as their first choice, having control over the amount of artificial lighting is an essential requirement for learning space. Participant H5 declared, *"Also lighting because it is too dark in a room and it's a very heavy topic."*

Some of the participants expressed that control of the temperature in the learning environment is important. Participants B4 mentioned: *"the room should not be cold, every time it's so cold and so uncomfortable to even sit, how can I even focus...some people feel so hot...so hot they just put the AC in like it's freezing."*

3.3. Teaching influence

According to the study participants, effective implementation of active learning strategies depends on the instructor. Participants agreed that when active learning strategies were appropriately included in the lesson, they gained the most from the lesson. Suggestions from participants include, appropriately timing the incorporation of active learning strategies. An example given was to incorporate active learning strategies at the start of the lesson through a brainstorming session. Participant A4 explained how this deepens learning after an introduction by the instructor, *"If we had it in the beginning...in the beginning, it would be good for brainstorming, like getting what you already know about this material out but toward the middle or the end, I think it would be more effective because after you learn something [new], you apply it now it stick[s] in your mind."*

Participants also believed that learning is more effective when the active learning strategies implemented are aligned to the learning outcomes. As participant A3 added, *"It depends on the course and the content, if you choose the wrong active learning strategy to the wrong content, it's not going to be effective. You have to know which one is the best"*. In addition, further comments demonstrated the fact that active learning strategies used had to be concise to ensure they add to the process of meeting the lesson outcomes. Finally, all participants agree that the successful implementation of active learning strategies requires the educator to have the competence needed to use the strategy. This helps to ensure that they use the strategy properly to facilitate learning.

4. Discussion

The aim of this study was to understand how undergraduate students perceive the use of active learning strategies, how best they believe active learning strategies should be implemented, and what active learning strategies are currently being used in their classrooms. In addition, we sought to understand the student's perspective on how the learning environment, including location, furniture, temperature, and light in a classroom space, influences their learning.

Results from this study overwhelmingly show that undergraduate nursing students believe that the use of active learning strategies in their

classrooms enhances the learning process and deepens learning. This result aligns with Chan et al.'s (2021) study that found that students were more engaged in the learning process, and they retained learning when active learning processes are incorporated in the classroom. Engagement includes feeling motivated and encouraged to attend classes and learn, a willingness to participate in the learning process, and the urge to seek out further learning. In this process, students deepen their learning as they engage with the content and seek to make learning meaningful, as well as seek personal growth through high-level engagement (Marton and Säljö, 1976). This is in contrast to surface learning, where the focus is on a lower level of abstraction of knowledge, without a clear understanding of the essence of what is being learned and its use, with a motivation skewed toward passing exams (Manalo, 2020).

Critical thinking is described as the ability to analyze and assess information received to support decision-making (Berg et al., 2021), while creative thinking leads to innovating new ideas (Manalo, 2020). The ability to think critically and creatively are vital skills needed in nursing practice as it supports the development of clinical reasoning skills needed to develop clinical competence (Ghezzi et al., 2021). Results from this study are consistent with results from a recent scoping review of 19 published studies exploring the teaching strategies used to support critical thinking, which found that critical thinking is promoted when teaching strategies are student-centered and the learning environment is active (Westerdahl et al., 2022). A systematic review and meta-analysis, found that problem-based learning significantly increased critical thinking skills when compared to other teaching and learning strategies (de Oliveira et al., 2016). However, undergraduate nursing student participants in this study confirm that various active learning strategies, including reflection activities, use of games, visuals, flipped classroom strategies, quizzes and case studies, enhance their creative and critical thinking skills.

It is not uncommon for students to perform better in the theoretical sections of their programs but struggle to transfer learning to practice settings when taught using strategies that do not provide a cognitive challenge for students (Benner et al., 2010). Study participants identified various active learning strategies that support the transfer of learning to practice settings that align with research results, including quizzes, which encourage retrieval practices (Karpicke and Blunt, 2011), storytelling to create connections to real-life (Persellin and Daniels, 2015), and collaborative learning practices which supports deeper learning (Huda et al., 2016). However, results from the study show that student participants stress the need for educators to intentionally integrate active learning strategies to ensure strategies used align with the desired learning outcomes.

With regards to the current and preferred learning environment, control was one major theme identified as the preference over the learning environment or space. In a learning environment context, having the choice of a comfortable, user-friendly classroom requires enabling learners to have control over changing the space according to the learners needs and activities (Rands and Gansemer-Topf, 2017). The finding of this project has shown that having control over adaptability and flexibility is needed for all participants. On the other hand, Hunley and Schaller (2009) support the project's findings by explaining that flexibility in space design allows different learning designs and pedagogy to function when needed. Similarly, the capability of controlling the learning environment lights and temperature was important for the majority of participants in this project.

5. Limitations

The participants in the study were selected through a convenient sampling process as all students were invited to participate. However, we did not capture the demographic data of participants beyond academic year which we regard as a limitation. The focus group sessions were held as mixed groups, and the data collected was not linked to the

year of study of the participants. Different year groups might have differing opinions on the use of active learning strategies and this information was not captured. In addition, participants may have diverse experiences that impact their perceptions of active learning, such as cultural and language diversity or various pre-university school experiences. Although this study was conducted at one institution, the in-depth descriptions provided supports the process of implementing similar studies at different institutions. Finally, seminal work in active learning published over six years ago has been cited in this paper.

6. Conclusion

This study confirms the global understanding of how active learning informs or influences students' learning. Linking learning to the multiple dimensions of the Taxonomy of Significant Learning provides a theoretical understanding of the effectiveness of active learning strategies. Study participants confirmed that the use of active learning strategies supported the application and integration of knowledge, the human dimension of learning through increased self-awareness, caring through increased motivation to learn, and the process of learning to learn by seeking knowledge beyond the classroom. From the student perspectives from this study, we can infer that students want and crave the best possible learning for themselves; they understand that they are participants in the learning process, not passive recipients of content.

The literature describes the need for more nursing educational research with a broad global perspective (Westerdahl et al., 2022). This study adds an additional diverse perspective on the perceptions of students in the Middle East regarding active learning in their nursing programs. The results of this study confirm the depth of learning achieved when active learning strategies are thoughtfully implemented. Additionally, students have provided meaningful insight into their learning, including how they learn, what works, and what does not. This study confirms and supports what other studies have concluded in that active learning supports the critical thinking of nursing studies. It is imperative that nurse educators offer evidence-based teaching strategies. Future studies about active learning should explore perceptions of active learning and help nursing students understand their learning.

CRedit authorship contribution statement

FK- Conceptualization, methodology, data collection, data analysis, writing, funding acquisition, project administration.

CW- Contribution to conceptualization, data collection, data analysis, writing, funding acquisition.

PE- Data collection data analysis, writing.

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Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.nedt.2023.105986>.

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