

Faculty and Students' Perspectives on using Games-Based Learning as A Teaching Strategy in Nursing Education

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Abstract:

Background and objectives: In general, the term 'games-based learning' (GBL) refers to an activity that encourages students to participate in the lesson through game-playing in order to engage and keep them focused. The games can be both non-digital and digital.

Methods: A quantitative design and cross-sectional descriptive study were done. The study included 70 nursing and midwifery students as well as 30 faculty. This study was conducted from the period of November 2021 until October 2022.

Results: Most of the faculty were 40-49 (36.7%). The faculty gender was 50 % male and 50% female. According to this study's findings, the majority of the faculty (80 %) and more than half of the students (60 %) agreed that game-based learning is beneficial in the nursing educational program. While (80%) of the faculty and more than (72%) of students agreed that game-based learning increases students' critical thinking skills.

Conclusion: Game-based learning as a teaching approach in nursing education programs plays a crucial role in increasing students' involvement. This study found that students and faculty believe that game-based learning improves students' critical thinking skills, which will help them do better in school.

Keywords: Game-Based Learning, Teaching Strategy, Student, Faculty, Nursing Education.

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Introduction:

In general, the term 'games-based learning' (GBL) refers to an activity that engages and keeps students focused by encouraging them to participate in the lesson through game-playing. Both non-digital and digital games are possible (Baker et al, 2005). GBL is stated as an educational teaching strategy that needs the students to join in an activity with predetermined rules. Educational gaming is a form of active learning in which students are given material and then asked to apply it to real-world scenarios. Students can practice decision-making, problem-solving, and participating in discussions in an active learning environment by utilizing GBL (Ismel et al, 2019). Gaming is a new teaching strategy that has been shown in research to increase nursing student learning outcomes. Gaming, in particular, helps nursing students retain information, enhances problem-based learning, and encourages them to become more involved in their studies. According to the literature, using gaming in nursing education improves active learning, improves critical thinking, makes learning more interesting, and can mimic real-life situations (Royse & Newton, 2007).

For nursing students, game-based learning can be an excellent active teaching strategy. According to studies, nursing students can use gaming to have a deeper understanding of the issue. Nursing students become more motivated and enjoy participating in a non-threatening environment, which reduces stress and encourages critical thinking. Attitudes, values, cultural understanding, and caring are just a few examples of how gaming might help today's technologically sophisticated nursing students learn more effectively (Petitte & Farris, 2020). Games are increasingly being used in nursing school. It helps students in developing empathy, critical thinking, patient safety, and clinical practice abilities, as well as to increase clinical learning, self-efficacy, and confidence. Students learning demands have evolved as a result of new technology, with games becoming a practicable option for engaging students' interests while achieving deep knowledge learning, primarily through lab simulations or virtual serious games (Castro et al, 2019).

This study was undertaken since there hasn't been enough research on game-based learning as a teaching strategy in the classroom. To encourage nursing students to think critically, faculty must use game-based learning as a teaching strategy in the classroom. Thus, the main aim of this study was to assess faculty and student perceptions of the use of games-based learning in nursing education at a nursing college.

Methodology:

Method and design: A quantitative design and cross-sectional descriptive study were used to determine the viewpoints of faculty and students on game-based learning. Students and faculty from Hawler Medical University's College of Nursing were chosen to participate in this study because it was easier to collect data and catch samples. **Sampling technique:** A non-probability method with a convenience sample of faculty (N =30) and students (N=70) were used. This study included students from all stages of the midwifery and nursing departments, as well as faculty from Hawler Medical University's College of Nursing. Prior to the start of the study, it was submitted to the college of nursing's scientific committee for approval.

Validity and reliability: Researchers created a self-questionnaire, and the validity and reliability of the questionnaires were checked before data was collected. A pilot study was conducted on 10 included students and faculty who were selected from the college of nursing on January 2022 and re-tested after 12 days' the same students and faculty were asked the same questions. The pilot study was useful to determine the reliability, clarity, acceptability, and time estimation for each participant to complete the questionnaire which was 5-10 minutes. The self-constructed questionnaire was sent to two experts in order to check the content validity of each item of the questionnaire. After revising each item and both experts confirmed that each item was relevant to the topic and had a clear meaning of the items and the items-content validity index (I-CVI) was 0.80.

The questionnaire was divided into two parts: The first part included demographic information (age, gender, marital status, and occupation), and the second part was to assess student and faculty perspectives on game-based learning as a teaching strategy in nursing programs. A Likert scale questionnaire was used to determine the perspective of the faculty and students. There were ten items in the second part and each item had four possibilities such as agree, somewhat agree, disagree, and don't know. Students and teachers were given questionnaire forms to fill out by the researchers.

In this data analysis, the Statistical Package for the Social Sciences (SPSS) version 20 was utilized (frequency and percentage). The study's goal was explained to participants to entice them to participate. Each participant was informed of the techniques used to preserve anonymity and his or her ability to refuse participation at any point prior to data collection. To preserve the confidentiality of participants, all data was collected and stored in a locked box. In addition, informed oral consent was taken from the faculty and students to participate in the study, after confirmation of confidentiality, anonymity, and participants' self-determination by the researcher.

Result:

Table 1. Socio-Demographic Characteristics of Students

Socio demographical characters		Frequency(n=70)	Percentage (%)
Age	17-19	27	38.6
	20-22	39	55.7
	23-25	4	5.7
Gender	Male	30	42.9
	Female	40	57.1
Residence	Rural	20	28.6
	Urban	50	71.4
Marital state	Unmarried	65	92.9
	Married	5	7.1

Table 2. Students’ knowledge about game-based learning

	Statement	Agree No. (%)	Somewhat agree No. (%)	Disagree No. (%)	do not know
1	Game-Based learning (GBL) is beneficial in a nursing educational program	42(60)	24(34.3)	3(4.3)	1(1.4)
2	Game-based learning helps nursing students in learning and engaging	43(61.4)	23(32.9)	4(5.7)	0(0)
3	Game-based learning encourages students because it is learning by doing	35(50)	24(34.3)	7(10)	4(5.7)
4	Game-based learning as a teaching strategy has been used in your nursing education program	16(21.4)	22(31.4)	30(42.9)	3(4.3)
5	Game-Based learning increases students’ critical thinking skill	51(72.9)	15(21.4)	3(4.3)	1(1.4)
6	Game-Based learning needs enough material, time, expertise, and budget	37(52.9)	22(31.4)	9(12.9)	2(2.9)
7	Game-based learning increases student-centered learning	33(47.1)	27(38.6)	4(5.7)	6(8.6)
8	Game-based learning is an effective learning tool facilitating “participation, communication, and problem-solving.	44(62.9)	20(28.6)	5(7.1)	1(1.4)
9	Game-based learning enhances nursing students to have a positive attitude toward this teaching strategy in class.	33(47.1)	26(37.1)	4(5.7)	7(10)
10	Game-based learning helps nursing students to work as a team and group	55(78.6)	10(14.3)	4(5.7)	1(1.4)

Table 3. Socio Demographical Characteristics of Faculty

Socio demographical characters		Frequency(n=30)	Percentage (%)
Age	20-29	6	20.0
	30-39	10	33.3
	40-49	11	36.7
	50-59	3	10.0
Gender	Female	15	50.0
	Male	15	50.0
Residence	Rural	5	16.7
	Urban	25	83.3
Marital state	Unmarried	7	23.3
	Married	23	76.7

Table 4. Faculty knowledge about game-based learning

	Statement	Agree No. (%)	Somewhat agree No. (%)	Disagree No. (%)	do not know
1	Game-Based learning (GBL) is beneficial in a nursing educational program	24 (80)	4(13.3)	1 (3.3)	1(3.3)
2	Game-based learning helps nursing students in learning engaging	16 (53.3)	10(33.3)	3(10)	1(3.3)
3	Game-based learning encourages students because it is learning by doing	16(53.3)	10(33.3)	4(13.3)	0(0)
4	Game-based learning as a teaching strategy has been used in your nursing education program	5(16.7)	2(6.7)	18(60)	5(16.7)
5	Game-Based learning increases students’ critical thinking skill	24(80)	4(13.3)	1(3.3)	1(3.3)
6	Game-Based learning needs enough material, time, expertise, and budget	17(56.7)	11(36.7)	1(3.3)	1(3.3)
7	Game-based learning increases student-centered learning	15(50)	5(16.7)	8(26.7)	2(6.7)
8	Game-based learning is an effective learning tool facilitating “participation, communication, and problem-solving.	25(83.3)	5(16.7)	0(0)	0(0)
9	Game-based learning enhances nursing students to have a positive attitude toward this teaching strategy in class.	16(53.3)	10(33.3)	0(0)	4(13.3)
10	Game-based learning helps nursing students to work as a team and group	23(76.7)	6(20)	0(0)	1(3.3)

Most of the students were unmarried (92.9%) and a low level of students was married (7.1%). The vast majority of the student respondents were aged between 20-22 years (55.7%). The majority of the students were female (57.1%) (**Table 1**).

Most of the faculty were living in an urban community. Also, a high proportion of the faculty was aged 40-49 (36.7%). The faculty gender was 50 % male and 50% female (**Table 3**).

The vast majority of the faculty (80 %), while more than half of the students (60 %) agreed that game-based learning is beneficial in a nursing educational program (**Table 2&4**).

Approximately more than half of the faculty (53.3%) and the vast majority of the students (61.4%) agreed that game-based learning helps nursing students in learning (**Table 2&4**).

Most of the faculty (53.3%) and students (50%) agreed that game-based learning encourages students because it is learning by doing (**Table 2&4**).

A high proportion of the faculty (60%) and students (42.9%) disagreed that game-based learning as a teaching strategy has been used in their nursing education program (**Table 2&4**).

(80%) of the faculty and more than (72%) of students agreed that game-based learning increases students' critical thinking skills (**Table 2&4**).

A higher percentage of the faculty (56.7%) and students (52.9%) agreed that game-based learning needs enough material, time, expertise, and budget (**Table 2&4**).

(50%) faculty and 33(47.1%) students agreed that game-based learning increases student-centered learning (**Table 2&4**).

The vast majority of the faculty (83.3%) and students (62.9%) agreed that game-based learning is an effective learning tool facilitating "participation, communication, and problem solving (**Table 2&4**).

More than half of the faculty (53.3%) and less than half of the students (47.1%) agreed that game-based learning enhances nursing students to have a positive attitude toward this teaching strategy in class (**Table 2&4**).

More than one-third of the faculty (76.7%) and students (78.6%) agreed that game-based learning helps nursing students to work as a team and group (**Table 2&4**).

Discussion:

The result of the present study showed that the vast majority of faculty (80%) and more than half of students (60%) agreed that game-based learning is beneficial in nursing education programs. A study conducted in the United States supported the current study and concluded that using one active-learning strategy, a Jeopardy-style game called "Nursopardy," to reinforce Fundamentals of Nursing content helped students prepare for a standardized final exam. Students regarded this learning strategy to be enjoyable and beneficial to their learning, according to the findings of the study (Boctor, 2013).

The finding of the current study indicated that approximately half of the faculty (53.3%) and the vast majority of the students (61.4%) agreed that game-based learning helps nursing students learn more effectively. A study conducted in Spain and Ecuador that supported this one stated that games help nursing students to work as a team and have the ability to perform under pressure. The purpose of the study was to examine nursing students' viewpoints and study motivations after playing the nursing 'Escape Room'

training game. According to the findings of the study, nursing students who took part in the game strongly believed that it aided them in learning the subject and that more games of this nature should be incorporated into nursing classes. The game was fun, the game helped them in the exam, and the game inspired them to prepare," they said in general (Gómez-Urquiza et al, 2019).

The majority of faculty (16.3%) and students (35%) in this study, support students by allowing them to learn by doing. A study in Turkey that supported up this one discovered that a game-based virtual reality phone application is utilized in nursing school as a simulation to teach psychomotor abilities. The study's purpose is to evaluate how a virtual reality phone game influences nursing students' tracheostomy care education (Bayram & Caliskan, 2019).

The present study indicated that (72%) of students and (80%) of faculty agreed that game-based learning increases students' critical thinking skills. Another study conducted in Taiwan which supported the current study indicated that a two-week study was done to assess the learning outcomes of nursing students who played the ECG contextual game to those who received traditional training. Students who learned through a contextual game had better learning performance, attitude, motivation, and critical thinking tendencies than those who received regular instruction, according to the findings (Chang et al, 2020).

The current study concluded that the vast majority of faculty (83.3%) and students (42.9 %) agreed that game-based learning is a good learning strategy that fosters "participation, communication, and problem-solving." A Chinese study backed up this one, finding that game-based learning has aroused the interest of nursing educators. Games have been demonstrated to increase students' learning motivation and effects when utilized as a supplement to regular education. The study included a total of 104 sophomore nursing students (51 intervention, 53 control). The study discovered that disaster nursing competence levels in the intervention group were significantly greater than in the control group after the intervention. Three aspects of disaster nursing competence, cognition, skill, and affective reaction, were also significantly improved in the intervention group (Ma et al, 2021).

According to the findings of the current study, stated that more than half of the faculty (53.3%) and less than half of the students (47.1%) agreed that game-based learning improves nursing students' attitudes toward this teaching strategy in class. Another study from Singapore conducted which supported this study, discovered that game-based learning is gaining popularity. By enhancing motivation and engagement, it can improve learning outcomes while also improving learning experiences. The study's purpose was to investigate nursing students' game-based learning experiences (Xu et al., 2021).

The findings of this study, stated that more than a third of faulty (76.7%) and students (78.6%) believe that game-based learning assists nursing students in working together as a team and group. According to a study conducted in the United States that supported this one, GBL is helpful for incorporating the clinical judgement paradigm into the classroom and increases exposure, knowledge, and memory for specific topics such as postpartum hemorrhage. Students link GBL with increased interest and learning in difficult course material. The teaching-learning strategy, which was designed to promote engagement and knowledge retention, was well received by students (Zehler & Musallam, 2021).

Conclusion:

The use of game-based learning as a teaching strategy in nursing schools is effective in inspiring nursing students to be student-centered in the classroom. Game-based learning also helps nursing students think critically, according to students and faculty.

Limitations of the Study :

The limited sample size is the most obvious weakness of this study. Another limitation is that researcher's lack of previous studies in this field.

Recommendation:

Additional research with bigger sample size is recommended.

Conflict of Interest:

The authors declared that there is no conflict of interest in this study

تېروانینی مامۆستایان و خویندکاران سه‌بارت به‌کارهینانی فېربوونی له‌سه‌ر بنه‌مای یاریه‌کان وهک ستراتیجیکی فیرکردن له‌خویندنی په‌رستاری

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پوخته:

باکراوند و ئامانجه‌کان: به‌گشتی زاراوه‌ی 'فېربوونی له‌سه‌ر بنه‌مای یاری ئاماژه به‌چالاکیه‌ک ده‌کات که هانی فیرخووازن ده‌دات بۆ به‌شداریکردن له‌وانه‌که له‌رێگه‌ی یاری کردنه‌وه بۆ ئه‌وه‌ی پابه‌ندبوون زیاد بکه‌ن و سه‌رنجیان بدن. یاریه‌کانیش ده‌توانن هه‌ردووک بێ دیجیتال و دیجیتال بن

شیوازه‌کان: میتۆدی چه‌ندیه‌تی شیوازی باسکردن ئه‌نجام دراوه. راپرسیه‌کی بۆ کوکردنه‌وه‌ی داتا‌کان که پیکهاتبوو له‌ ۱۰ پرسیار له‌گه‌ل داتای دیمۆگرافی به‌شداریبووان وه‌رگیرا. له‌کۆی 70 خویندکاری په‌رستاری و ۳۰ مامۆستای ئه‌کادیمی به‌شدارییان له‌تویژینه‌وه‌ کردووه. داتا‌کان به‌کارهینانی رێژه‌ی سه‌دی بۆ خویندکاران و مامۆستایان شیکرایه‌وه.

ئه‌نجامه‌کان: ژماره‌یکی زوری مامۆستایان ۴۰-۴۹ سال بووه (۷,۳۶٪) ره‌گه‌زی مامۆستایان له ۵۰٪ نیر و ۵۰٪ می بوون. به‌پێی دۆزینه‌وه‌ی ئه‌م تویژینه‌وه‌ی هاتووه که زۆرتین ژماره‌ی مامۆستایان (۸۰٪) و زیاتر له‌ نیوه‌ی خویندکاره‌کان (۶۰٪) کۆکن له‌سه‌ر ئه‌وه‌ی که فېربوونی له‌سه‌ر بنه‌مای یاری له‌ به‌رنامه‌ی فیرکردن ی په‌رستاریدا به‌سووده (۸۰٪) ی مامۆستایان و زیاتر له (۷۲٪) خویندکار ریکه‌وتوون ئه‌و فیربوونه له‌سه‌ر بنه‌مای یاری، توانای بیرکردنه‌وه‌ی ره‌خنه‌یی قوتابیان زیاد ده‌کات.

ئه‌نجام: ئه‌م تویژینه‌وه‌یه ئاماژه‌ی به‌وه‌داوه که فېربوونی له‌سه‌ر بنه‌مای یاری وه‌ک ستراتیجیکی فیرکردن له‌ پرۆگرامه‌کانی په‌روه‌رده‌ی په‌رستاریدا بیان وایه رۆلی گرینگی ده‌بیت له‌ باشتکردنی تیگه‌یشتنی قوتابیان بۆ باشتکردنی ئه‌دای ئه‌کادیمی خویندکاران، ئه‌م تویژینه‌وه‌یه ده‌ریخست که خویندکاران و مامۆستایان کۆکن له‌سه‌ر ئه‌وه‌ی که فېربوونی سه‌ر به‌ یاری، توانای بیرکردنه‌وه‌ی ره‌خنه‌یی قوتابیان زیاد ده‌کات.

کلێله وشه‌کان: فیربوونی یاری-له‌سه‌ر بنه‌مای کایه، ستراتیژی فیرکردن، خویندکار، مامۆستا، په‌روه‌رده‌ی په‌رستاری.

References:

- Baker A, Navarro EO, Hoek AV (2005). An experimental card game for teaching software engineering processes. *Journal of Systems and Software*. 75(1):3-16. DOI:10.1016/j.jss.2004.02.033.
- Boctor L (2013). Active-learning strategies: the use of a game to reinforce learning in nursing education. A case study. *Nurse Educ Pract*. 13(2):96-100. doi: 10.1016/j.nepr.2012.07.010.
- Bayram SB, Caliskan N (2019). Effect of a game-based virtual reality phone application on tracheostomy care education for nursing students: A randomized controlled trial. *Nurse Educ Today*. 79:25-31. doi: 10.1016/j.nedt.2019.05.010
- Chang CY, Kao CH, Hwang GJ, Lin FU (2020). From experiencing to critical thinking: a contextual game-based learning approach to improving nursing students' performance in Electrocardiogram training. *Education Tech Research Dev*. 68, 1225–1245 <https://doi.org/10.1007/s11423-019-09723->
- Castro MJ, Lo'pez M, Cao MJ, Ferná'ndez-Castro M, Garcí'a S, Frutos M (2019). Impact of educational games on academic outcomes of students in the Degree in Nursing. *PLoS ONE*. 14(7): 1-12. [https://doi.org/ 10.1371/journal.pone.0220388\(28\)](https://doi.org/10.1371/journal.pone.0220388(28))
- Gómez-Urquiza JL, Gómez-Salgado J, Albendín-García L, Correa-Rodríguez M, González-Jiménez E, Cañadas-De la Fuente GA (2019). The impact on nursing students' opinions and motivation of using a "Nursing Escape Room" as a teaching game: A descriptive study. *Nurse Educ Today*. 72:73-76. doi: 10.1016/j.nedt.2018.10.018.
- Ismel MS, Shosha AF, Ahmed HA (2019). Perception of nursing students and educators toward using the game-based learning as an active learning strategy. *Journal of Nursing and Health Science*. 8(1): 78-91. DOI: 10.9790/1959-0801017891.
- Ma D, Shi Y, Zhang G, Zhang J (2021). Does theme game-based teaching promote better learning about disaster nursing than scenario simulation: A randomized controlled trial. *Nurse Educ Today*. Aug;103:104923. doi: 10.1016/j.nedt.2021.104923
- Petitte DM, Farris C (2020). Using gaming as an active teaching strategy in nursing education. *Teaching and Learning in Nursing*. 15(1): 61-65. DOI: 10.1016/j.teln.2019.09.002.
- Royse MA, Newton SE (2007). How gaming is used as an innovative strategy for nursing education. *Nursing Education Perspectives*. 28(5): 263-267.
- Xu Y, Lau Y, Cheng LJ, Lau ST (2021). Learning experiences of game-based educational intervention in nursing students: A systematic mixed-studies review. *Nurse Educ Today*. 107:105139. doi: 10.1016/j.nedt.2021.105139.
- Zehler A, Musallam E (2021). Game-Based Learning and Nursing Students' Clinical Judgment in Postpartum Hemorrhage: A Pilot Study. *J Nurs Educ*. 60(3):159-164. doi: 10.3928/01484834-20210222-07.