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INVESTIGATION OF STUDENTS' ACADEMIC PARTICIPATION IN COMBINED LEARNING BASED ON LEARNING MANAGEMENT SYSTEM

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Ключові слова: *комбіноване навчання, система управління навчанням, участь у навчальному процесі, студенти, які вивчають сестринську справу, Іранський університет медичних наук*
Ключевые слова: *комбинированное обучение, система управления обучением, участие в учебном процессе, студенты, изучающие сестринское дело, Иранский университет медицинских наук*

Abstract. Investigation of students' academic participation in combined learning based on learning management system. Daryadokht Masroor Roudsar, Hamid Haghani, Afsaneh Dehnad, Mojtaba Ghanbari Ghalesari, Maryam Ghasemi Shoub, Mostafa Akbarian Rokni. *Aim and Purpose – Using new methods and proper and interactive experiences can help improve the quality and attractiveness of education. The present study aimed to investigating the relationship between academic participation of nursing students who use combination education based on learning management system (LMS) and studied their degree of academic participation. This is a descriptive cross-sectional study in which the researcher has studied student participation through a demographic information form and a questionnaire on academic engagement. The purpose of this research was to study the nursing and midwifery faculty of Iran University of Medical Sciences in which 229 undergraduate nursing students were selected from the total of 280 from the second to the sixth semester by the total number and according to entry criteria. Then, data were analyzed by SPSS software version 23 and significance level less than 0.05, descriptive statistics, independent t-test, one way ANOVA, and Scheffe post hoc test and Pearson correlation. Most of the research units were female (52.8%), in the range of 21-29 years old (53.3%), single (90%) and native of Tehran (53.7%). The vast majority had a moderate or lower familiarity with the LMS system (75.5%). The majority did not easily access the LMS system (56.3%). Only 2.2% of the units had high satisfaction and 40.2% had relative satisfaction and 57.6% had low satisfaction from LMS-based combination training. The mean and standard deviation of the educational participation score was 51.16±14.86 and their behavioral subscale scores 69.68±16.48 and the emotional subscale was 49.56±20.53 and the cognitive subscale was 38.25±20.55%. According to the results of the study, most of the research units had low satisfaction with LMS-based combination training, which could increase student satisfaction by using all the capabilities of the learning management system and the more interactive design of the combination training, as the majority of previous studies have shown high satisfaction with combined training. Among the subscales of educational participation that have a positive relationship with academic success and academic achievement, the highest mean score was for subscales of behavioral participation and the lowest for cognitive subscales and this study did not show any relationship between the satisfaction of LMS-based combination education and the student's academic engagement.*

Реферат. Дослідження участі студентів у навчальному процесі при комбінованому навчанні на основі системи управління навчанням. Дарядохт Масрур Роудсар, Хамід Хагані, Афсанех Дехнад, Мойтаба Ганбарі Галесарі, Марьям Гасемі Шуб, Мостафа Акбарян Рокні. *Мета і завдання: використання нових методів і власного інтерактивного досвіду може допомогти поліпшити якість і привабливість освіти. Це дослідження було спрямоване на вивчення взаємозв'язку між участю в навчальному процесі студентів-*

медсестер, які використовують комбіноване навчання на основі системи управління навчанням (СУО), і вивченням ступеня їх участі в навчальному процесі. Метод: описове перехресне дослідження, в якому вивчалась участь студентів за допомогою заповненої ними демографічної інформаційної форми й анкети щодо залучення в навчальний процес. Мета цього дослідження – вивчення факультету сестринської справи та акушерства Медичного університету Ірану, в якому було відібрано 229 студентів-медсестер II-VI семестрів навчання із загальної кількості, відповідно до критеріїв вступу. Отримані дані були проаналізовані за допомогою програмного забезпечення SPSS версії 23 і рівня значущості менше 0,05, методу описової статистики, незалежного t-тесту, одностороннього дисперсного аналізу ANOVA, а також спеціального критерію Шеффе і кореляції Пірсона. Більшість учасників дослідження становили жінки (52,8%) у віці 21-29 років (53,3%), самотні (90%) й уроджениці Тегерана (53,7%). Переважна більшість учасників була знайома із системою СУО (75,5%) на середньому рівні або нижче. Більшості нелегко було отримати доступ до системи СУО (56,3%). Тільки 2,2% мали високий ступінь задоволеності, 40,2% – відносну задоволеність, а 57,6% – низький ступінь задоволеності комбінованим навчанням на основі СУО. Середнє і стандартне відхилення оцінки участі в освіті становило 51,16±14,86, а їх поведінкові оцінки – 69,68±16,48, емоційна – 49,56±20,53, а когнітивна підшкала – 38,25±20, 55%. Згідно з результатами дослідження, більшість учасників дослідження в малому ступені задоволена комбінованим навчанням на основі СУО, використання всіх можливостей системи управління навчанням і більш інтерактивна система комбінованого навчання могла б підвищити задоволеність учнів, оскільки більшість попередніх досліджень показали високий ступінь задоволеності комбінованим навчанням. Серед підшкал щодо участі в навчальному процесі, які мають позитивний зв'язок з академічною успішністю, найвищий середній бал мали підшкали поведінкової участі, а найменший – когнітивні підшкали, і це дослідження не показало жодного зв'язку між задоволеністю комбінованим навчанням на основі СУО й участю студента в навчальному процесі.

With the introduction of e-learning, as a reflection of the influence of information and communication technology in the field of education, the process of teaching-learning has undergone extensive changes and the necessity of using modern and active learning and student-oriented methods has been felt by educational systems and their application in various medical sciences, including nursing students' education has been very much considered. In this process, the role of teaching is to create an appropriate learning environment from passive to active and dynamic to help learners to teach [1]. One of the ways in which information is contributed to the transfer of information is the learning management system. In this way, the interaction and participation of the teacher and the learner have a very important role in learning. Since the purpose of engagement and participation in medical education is to achieve behavioral change [2], appropriate knowledge and appropriate teaching methods should be used to explain educational content, learning pattern and educational goals [3]. E-learning provides numerous opportunities for learning individuals that were not previously possible. In this way, the chance to learn from a renowned university is possible, there is no need for a change in lifestyle, and it does not result in the abandonment of his or his family's job or immigration and allows for unlimited access to information [4].

Research findings have shown that the more learners' senses are involved in information acquisition, the amount of learning also increased, their motivation, their interest and satisfaction will be enhanced. The role of faculty members in the transfer of knowledge and the role of inclusive as a learner is very important. Today, universities in their strategic and operational plans have highlighted new approaches to encouraging faculty members to use virtualization and new technologies, and have spent a lot on preparing the appropriate technical field and training faculty members. In Iran University of Medical Sciences, the system has been launched since 2009 at the Center for University Studies and Development, but despite its high time and budget and high costs, the system still faces many challenges. Due to the fact that in e-learning, learners take responsibility for learning and they are able to access educational content whenever they wish, motivation and satisfaction in learners should also be considered [5].

Considering the impact of participation on students' academic achievement in universities and its related factors, the priorities of research in education and issues are the attention of university administrators and one of the key factors affecting the success of students is the concept of academic participation [6]. Participation is more than a transient and specific emotional state, and refers to a progressive and emotional-cognitive state that focuses on a subject, event, or particular behavior [7]. The concept of educational participation refers to an effort that pervades intentional educational activities to directly contribute to the desired outcomes [8]. Studies have shown that students who are eager for higher education than students with lower levels of enthusiasm show more willingness to spend time and effort in studies and have more efficiency and insistence on dealing with problems

and issues. Research indicates that there is a significant relationship between academic participation and academic performance [9] and academic engagement and academic achievement [10]. Considering that in the teaching-learning process, faculty members should be able to motivate and motivate learners [11].

Considering the above mentioned and the importance of teaching nursing students, especially the use of modern technologies to meet existing educational needs, this study aimed to investigating the academic participation of nursing students who use combination education based on learning management system (LMS) and studied their degree of academic participation.

Research Question – Which of the demographic variables is related to the level of academic participation (behavioral, emotional and cognitive) of nursing bachelor students in the field of combined learning based on the learning management system?

MATERIALS AND METHODS OF RESEARCH

Define Variables

- Academic participation: Participation is nothing more than a transient and specific emotional state and refers to a progressive and emotional cognitive state that focuses on an issue, event or specific behavior.

- Combined learning: Combined learning is in fact a combination of two or more methods that, besides classroom use, utilizes other educational methods such as multimedia lessons, seminars, and e-learning capabilities [12].

- Learning Management System: Learning Management System is a system that records and tracks learner activity. In other words, this system automatically manages the learning and teaching process, and facilitates the management of those programs within an organization, and facilitates the partnership between the professor and the student. It also enables learners to collaborate and collaborate with their peers. In fact, it is a system that attempts to ease the learning process in the field of education and its processes [13].

- Combined learning based on learning management system: In this study, students' satisfaction from combined learning based on learning management system (LMS) was measured. Also, the number of faculty members use the system including (content of the course, the type of uploaded content, the practice and the test, how to respond to the student, the score, the student's test score, the sent message, and the use of the chat room), is estimated using the list for use in the criteria of entry of research samples.

Research Methodology

This study is a descriptive cross-sectional study. The researcher studied student participation through demographic information and Frederick, Blomfild and Paris, questionnaire [14]. In this study, a sample of nursing undergraduate students at the Faculty of Nursing and Midwifery of Iran University of Medical Sciences who were studying from the second semester to the sixth semester and who were eligible to enter the study were selected. Sampling method of this study was all based on entry criteria. Due to the limited research community, sampling was not performed and all of the eligible units were included in the study. The demographic information form of the research units that included issues such as gender, age, marital status, current status, academic degree, term of education, average grade of the last degree, last semester, interest in the field, interest in specialized courses, out-of-class activity and university activities, the number of courses offered by the Learning Management System (LMS), the degree of computer access to use the LMS system, the level of computer literacy, the familiarity with the LMS system and membership in social media. The questionnaire was the scale of academic participation of Fredericks, Blumenfeld and Paris, 2005. This scale has 15 items that measure these three levels of behavioral, emotional, and cognitive subscale among students.

A total of 229 undergraduate nursing students were selected from a total of 280 from the second to sixth semesters and entered the study using a total number based on input criteria. The reliability coefficient of the academic participation scale was calculated using Cronbach's alpha method. The Cronbach's alpha coefficient was 0.66. To conduct this research, which is a cross-sectional descriptive study, the researcher, after obtaining the license for the implementation of the necessary research and approvals from Iran University of Medical Sciences and the Ethics Committee, and the researcher referred to the Faculty of Nursing and Midwifery of Iran University of Medical Sciences and the Virtual Education Department of Iran University of Medical Sciences, then, based on the curriculum (the existence of a learning management system in the curriculum), they select their target group and go to the students' classrooms within two weeks and at the end of each class, after complete explanation of the goals of the study for 5 minutes, the researcher distributed the questionnaires among the research units, then the questionnaires were collected after 15 minutes with the help of the representatives of the classes. To analyze the data, descriptive statistics and analytical statistics were used as needed. SPSS

23 software was used to analyze the data and the significance level was less than 0.05.

Findings

Descriptive Statistics

The findings of the research show that most of the research units were female (52.8%), in the range of 21-29 years old (53.3%), single (90%) and native of Tehran (53.7%). Among the semesters, the most frequent participants were from the fourth semester (26.2%). Among the out-of-class activities and in the University's area of study, sports activities account for a significantly higher percentage (30.6%). The most interest was between the specialized courses in internal-surgical lessons (54.1%) and the least interest in nursing management lessons (0%). The vast majority had a relatively modest and lower familiarity with the LMS system (75.5%). The majority did not easily access the LMS system (56.3%).

RESULTS AND DISCUSSION

Analytical Statistics

Which of the demographic variables is related to the level of academic participation (behavioral, emotional and cognitive) of nursing bachelor students in the field of combined learning based on the learning management system?

Table 1

The mean, standard deviation of educational participation and its subscales in terms of gender in the studied units and the results of the test of means comparison – year 2017

Gender / Academic Partnership Subscales	Female	Male	Independent t test results		
	standard deviation ± average	standard deviation ± average	P - Value	df	t
Behavioral participation	71.38 ±15.95	67.77±16.92	0.097	227	1.665
Emotional partnership	51.45 ±19.93	47.45±21.08	0.142	227	1.473
Cognitive participation	39.59±20.18	36.76±20.966	0.300	227	1.039
Educational participation	52.81±14.16	49.31±15.45	0.075	227	1.790

The results of independent t-test showed that there was no significant relationship between the subscales of educational participation and educational participation with the gender of the studied units (P-value>0.05). The mean scores of educational participation and its subscales in the study subjects of female were more than male.

Table 2

Numerical indices of educational participation and its subscales based on age in the research units and the results of the test of means comparison – year 2017

Age / Academic Partnership Subscales	18-19	20-21	22-23	≥ 24	Analysis of variance results	
	standard deviation ± average	standard deviation ± average	standard deviation ± average	standard deviation ± average	P - Value	F
Behavioral participation	19.43±69.94	15.77±69.47	16.94±70.00	17.15±69.64	0.997	0.017
Emotional partnership	17.36±50.79	19.57±48.26	22.00±49.42	24.03±56.35	0.415	0.955
Cognitive participation	19.52±38.09	19.84±34.38	20.38±41.85	21.30±49.76	0.004	4.493
Educational participation	14.95±51.67	14.51±49.29	14.18±52.38	17.45±57.70	0.090	2.189

ANOVA test showed that the mean score of cognitive participation in the age groups of the units was statistically significant, but the mean scores of academic participation, behavioral participation and emotional participation in their age groups were not statistically significant. Based on the results of Scheffe post hoc test, the mean score of cognitive participation in the age group of 20-21 years was significantly different from that of the group over 24 years and increased with increasing age.

Numerical indices of educational participation and its subscales based on marital status in the research units and the results of the test of means comparison – year 2017

Marital status / Academic Partnership Subscales	Single	Married	Independent t test results		
	standard deviation ± average	standard deviation ± average	P - Value	df	t
Behavioral participation	68.78±16.49	77.72±14.33	0.013	227	2.495
Emotional partnership	48.28±19.87	61.05±23.12	0.004	227	2.874
Cognitive participation	36.72±20.67	51.96±13.83	0.000	227	4.852
Educational participation	49.89±14.28	62.46±15.45	0.000	227	3.970

The results of independent t-test in the above table showed that the mean scores of participation in educational participation and its subscales were statistically significant with the marital status of the studied units. The mean scores of educational participation and its subscales in married individuals were higher than single ones.

The mean, standard deviation of educational participation and its subscales in terms of residence status in the studied units and the results of the test of means comparison – year 2017

Residence status / Academic Partnership Subscales	Native to Tehran	Student home	Dormitory	Analysis of variance results	
	standard deviation ± average	standard deviation ± average	standard deviation ± average	P - Value	F
Behavioral participation	71.14±15.69	66.67±21.95	68.02±17.25	0.350	1.054
Emotional partnership	50.58±19.33	50.00±25.34	48.34±21.91	0.719	0.331
Cognitive participation	39.76±19.04	45.00±8.67	36.26±22.39	0.379	0.973
Educational participation	52.45±14.42	52.78±4.81	49.56±15.48	0.342	1.079

The statistical analysis of variance analysis in the above table showed that the mean scores of educational participation and its subscales with the status of the current status of the studied units did not have a significant statistical difference.

Other research findings are as follows:

- ANOVA test showed that the mean scores of academic participation and its subscales in different academic grades of the units were not statistically significant.

- Independent T-test showed that the mean score of academic participation and its subscales with the interest variable in the nursing field of the units was statistically significant and the mean score of academic participation and its subscales was higher among the studied units.

- ANOVA test showed that the mean score of behavioral participation and familiarity with learning management system (LMS) of the studied units was not statistically significant, but the mean scores of emotional participation and cognitive participation and academic participation with the level of familiarity with the learning management system (LMS) of the studied units were statistically significant. The Scheffe post hoc test also showed that the mean score of emotional participation of the units with a low and moderate and high degree of familiarity with the emotional partnership score of the units under study with the high level of familiarity and increased, and the mean scores of cognitive participation of the studied units with the low familiarity of system had a more difference significant with the mean score of the cognitive participation of the units under study than the higher familiarity with the system.

The data obtained in relation to the demographic characteristics of the students (units) showed that the mean age of the research units in this study was 21.83 with a standard deviation of 3.53 years. The majority of the studied units (53.3%) were in the age range of 20-21 years, with a mean age, was similar to age of Ganji et al. (2016) [15] with a mean age of 22.96±1.79 and Casuso- Holgado et al. with an mean age of 25.25±5.67. Among the semesters, the most frequent participants were from the fourth semester (26.2%). The majority of the units studied were 206 (90%) single students who were similar in terms of gender (59.1%) and married (70.7% single), different from study of Abbasi et al. (2015). This difference can be caused by the type of university (state and free). In terms of residence status, the majority (53.7%) was native of Tehran and 45% of them were residents of the dormitory. It should be noted that a significant proportion (41.5%) of the units were not interested in nursing. The most interest was between the specialized courses in internal-surgical lessons (54.1%) and the least interest in nursing management lessons (0%).

The results of statistical analysis showed that there was no significant relationship between educational participation and its subscales with gender, residence status and academic term. However, the mean score of cognitive participation in the age groups of the units was statistically significant and the mean score of cognitive participation in the age group of 20-21 years with a group greater than 24 years was significant difference and increased with increasing age. The mean scores of participation in educational participation and its subscales were statistically significant with the marital status of the studied units. The mean scores of educational participation and its subscales in married individuals were higher than single ones. The mean score of academic participation and its subscales with the interest variable in the nursing field of the units was statistically significant and the mean score of academic participation and all of its subscales were higher among the studied units. The mean scores of emotional participation and cognitive participation and academic participation with the level of familiarity with the learning management system (LMS) of the studied units were statistically significant. The mean score of behavioral participation and familiarity with learning management system (LMS) of the studied units was not statistically significant, but the mean scores of emotional participation and cognitive participation and academic participation with the level of familiarity with the learning management system (LMS) of the studied units were statistically significant. The results of Casuso-Holgado et al., Which was conducted in 2013 with the aim of determining the link between student engagement and academic achievement, has shown that academic engagement is one of the factors that positively affects students' academic achievement. In this study, there was a meaningful positive correlation between the mean of the semester and the dimensions of academic participation that was in line with our study, which could be due to the interrelationship between the academic achievements and the academic participation of the students and there was a significant relationship between gender and dimensions of educational participation, and in women, the participation score was higher, which contradicted our study and did not have a significant relationship with our study [16].

CONCLUSION

Given the enormous costs that the annual cost of equipping and upgrading the electronic and virtual systems of the university in order to keep pace with the new educational developments in the world-class universities, by organizing theoretical and practical workshops and appropriate training seminars in order to inform and strengthen the faculty and college students, it would be possible to increase the students' academic participation and their more academic achievement, until the university, the modern educational methods are not forgotten and the university's educational quality will be improved, and steps will be taken to ensure the realization of third-generation universities and the implementation of a virtual development package, both virtual and interoperable.

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