

University engagement and collaborative learning in nursing students of Kerman University of Medical Sciences

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ABSTRACT

Introduction: Collaborative methods of learning in the university have been a successful and the main aspects of the students' engagement. The purpose of this study was to determine university engagement and collaborative learning in nursing students of Kerman University of Medical Sciences.

Materials and Methods: This research was a descriptive correlation study on a total of 238 nursing students with different levels of education were asked to fill four subscales of the modified National Survey of Student Engagement (NSSE) tool with a total of 40 items. NSSE reliability was confirmed by Cronbach's alpha ($r = 0.78$). The NSSE instrument relies on a students' self-reports tool. Data were analyzed with descriptive and analytical statistics by SPSS version 16.

Results: Means scores of university engagement in nursing students was 96.6 ± 19.07 . There was a significant positive correlation in components including active and collaborative learning (ACL) level, students' level of academic challenge (LAC) as well as student faculty interaction (SFI), supportive campuses environment and enriching educational experiences (EEE) with total score of university engagement ($P < 0.05$).

Conclusions: Findings in this study showed that university engagement level in nursing students is moderate and there is a significant association between the model of teaching and ACL, and LAC and EEE.

Key words: Collaborative learning, nursing education, nursing students, university engagement

INTRODUCTION

University engagement focuses on those sorts of activities, which result in quality learning outcomes. University engagement is defined as the students' struggle devoted to educational activities resulted from the dynamic interaction among students, teachers, university activities, conditions, and educational environment.^[1]

Concept of university engagement is a specific perception of the interaction between students and university. University is an environment, which provides learning facilities and leads to learning among students.^[2]

Collaborative learning is one of the mostly known collections of university engagement indexes concerning students' learning among students.^[3] Collaborative learning methods

including learning together have been successfully used in universities and had a positive effect on students' academic achievement.^[4] Evidences in higher education indicate support for active collaborative learning methods as a method to prevail students' activities and a constructive engagement among university students, which have positive effects on students' problem solving, critical thinking, social interactions, and perseverance.^[5] Participatory approach mostly necessitates cooperative learning. In this method, not only an individual, but also the group succeed in learning as the goal is clear and learning is joyful, it is conducted with responsibility through curiosity and is accompanied with informed and purposive questions and capability of accurate evaluation.^[6] Group activities turn to cooperative form when the group members believe that each member's success is guaranteed by the success of every member in the group.

Therefore, achievement to group objectives is possible through various ways such as work sharing and allocation of members' roles in the group. In this educational method, participants cooperate with one another to achieve a common objective.^[7,8] This cooperation occurs when the students work as a team to share their knowledge and experiences, and all of these activities are determined to access an objective.^[5] On the contrary to direct material teaching patterns in which the learner personally follows learning activities and the

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reward of such learning depends on personal efforts and competitions, in collaborative learning, assignments and rewards are provided differently, and students are not only accountable for themselves, but also for improvement of their group members.^[9] In collaborative learning process, collaboration is a reward, which reinforces the motivation to do general tasks, spread a notable friendship among group members and bring about the highest level of interaction and thoughts exchange. Important life skills such as talking, listening, adaptation, conformance, and problem solving can be learned through collaborative method experiences. The learners who experience collaborative activities, reconstruct and modify their attitudes better and sooner compared to other educational groups.^[7,10] Collaborative learning approach helps the learners with how to think and evaluate their knowledge.^[11]

In this educational approach, students get a better insight to educational issues through learning from their peers' criticism and develop their perception and understanding by listening to others' perceptions and understanding. With regard to high speed of science and knowledge production, students' participation and active education in attaining educational materials are among the essentials of today's academic world.^[12] Fans of this educational approach believe that adults should be able to cooperate instead of compete with each other to succeed in their working environment and social interactions. One of the final and significant effects of collaborative method is students' learning collaborative and cooperative skills. On the other hand, in higher education, the students need minor group activity and work to participate in seminars, reports and research projects.

Although learning is formed during university engagement and group activities, various factors affect this type of learning and experiences among students as well as nursing students.^[13] As universities should provide students with facilities and a background of university engagement and better learning, the students are accountable for their own learning. The nature and level of learning depends on students' usage of their environmental sources,^[2] shortage of university engagement, student-teacher interactions and relationship as well as inactive university environment leading to decline of learning quality and educational experiences during education.^[5] Noohi *et al.* (2009) named educational motivation and interest, feeling of disability and not adequate learning, slow progress and anxiety as a result of examinations among the issues related to students' educational decline and inadequate engagement and scientific interactions during education as the students' considerable counseling problems.^[14] University educational services should not only be provided to make learners feel secure, but also to give them necessary preparations for learning. Teachers, researchers, executive managers, and various sections staffs are among the most important elements

in universities who, based on their abilities and activities, can be effective on students' learning, problem solving, and educational achievement.^[15] In addition, with the increase of educational experience through collaborative method and students' involvement in scientific interactions, their communication skills are developed.^[16,19] Nursing students work in collaboration with the clients, colleagues, patients' families and other individuals and are in interactions with academic members, educators, teachers, peers, nurses, clients, staffs etc. These social structures are the effective elements in conducting nurses' and nursing students' behavioral patterns. With regard to nature of nursing, necessity of social interactions with the clients, staffs and patients' families, development of the social dimension and professional and communicational skills is the most essential need in nursing students' education, which is developed through positive university engagement, collaborative learning and education and participation in group activities. Collaborative learning has had various approaches in past decades, but the common point in these all approaches is academic achievement, based on helping each other.^[20] Despite the emphasis on efficiency of learning groups, competitive and teacher based approaches and personal activities are more welcomed and facilitated in universities, which are counted as the challenges for nursing educational system. Therefore, this study aimed to define the level of university engagement and collaborative learning in nursing students of Kerman University of Medical Sciences and Health Services.

MATERIALS AND METHODS

This is a descriptive correlation study conducted on all nursing students ($n = 384$) of Razi School of Kerman University of Medical Sciences who were selected by census sampling in different educational levels (BS, MS and PhD). The number of returned completed questionnaires was 238 (response rate of 74%). Data collection tool included two sections: First section was on personal characteristics including sex, marital status, occupation, residential status, education level and one question on students' perception from general teachers' teaching model during education, active or passive teaching. The second section contained national survey of student engagement (NSSE) including 40 questions with four components: (a) Active and collaborative learning (ACL) with seven phrases; (b) level of academic challenge (LAC) with eleven phrases and student interaction with faculty with six phrases; (c) supportive campus environment with six phrases, and finally, (d) enriching educational experiences (EEE) with ten phrases in a five-point Likert scale (1 = never and 5 = often) with score range of 40-200. Higher scores showed higher university engagement. Reliability of the tool was measured about $r = 0.8$ in numerous studies.^[21,23] In the present study, its reliability was defined in an appropriate

level by calculation of Cronbach's alpha ($r = 0.78$). Data were reported by descriptive statistics (frequency distribution, percentage, distribution and central indexes and central distribution). Based on the goals of research and baseline variables and teachers' general teaching model, total score of students' university engagement was analyzed by independent *t*-test. In addition to defining the components of university engagement, its association with the total score was analyzed by Pearson coefficient test.

RESULTS

About 71.8% of the subjects were female and 28.2% were male. Subjects' mean age was 18-23 years, 34.5% of the subjects lived in university dormitory while most of them (65.5%) resided in a home. The content in nursing BS courses is preferably taught by traditional lectures with the use of Power point slides, which are sometimes helped by questions and answers. Most of the nursing post-graduation courses are managed by collaborative approaches. Students total university engagement was measured, and after defining its components, was compared with the total score of university engagement. Mean and SD of students' general university engagement score was 96.6 (19.07) with a range of 55-164, and it was in each of its sub groups as collaborative and active learning (ACL), 17.69 (8.04) with a range of 7-35; LAC, 24.99 (8.63) with a range of 11-55 and student faculty interaction (SFI), 15.64 (5.93) with a range of 10-50. A significant association was observed between some of personal characteristics including students' educational level [Table 1]. A positive significant correlation was observed between university engagement and its subgroups. Results of nursing students' learning engagement showed a low score for ACL. There was a positive correlation between level of ACL and mean score of LAC and SFI ($P < 0.001$) [Table 2]. Mean and SD of students' university engagement subgroup scores, which were categorized to active and passive teaching based on the type of teachers' teaching (according to students' perception from the general model of teaching), were compared and revealed a significant difference between two approaches in ACL, SFI ($P < 0.001$) and EEE ($P < 0.05$) [Table 3].

DISCUSSION

In past decades, researchers showed that collaborative learning, colleagues' relationship, positive university engagement and a university interactional supportive atmosphere are basic elements for success in the learning process. On the contrary, isolation, students' passivity and unfamiliarity lead to their educational decline and failure.^[5,24] Collaborative learning and education is among the essential elements of medical sciences education including nursing education in today's world.^[25] Working in a team to manage the vast domain of knowledge and solve sophisticated problems is inevitable.^[26] In the present study, the obtained mean score of students' university engagement (84.48 ± 18.86) with a range of 55-164 was in a moderate level.

This obtained finding is consistent with Popkness and Mcdaniel (2004). Researchers conducted a descriptive correlation study with the goal of defining the difference between level

Table 1: Mean scores and standard deviations of subjects in terms of variables underlying University engagement

University engagement Demographic variables	F (%)	Mean	SD	t-test	P value
Gender					
Woman	171 (71.8)	96.14	18.16	$P=0.555$	0.591
Man	67 (28.2)	97.7	21.31		
Marital status					
Single	190 (79.8)	96.47	19.48	$P=0.849$	0.191
Married	48 (20.2)	97.07	17.56		
Occupation					
No	216 (90.8)	95.59	19.07	$P=0.004$	2.883
Yes	22 (9.2)	100.07	18.8		
Residence					
Native	156 (65.5)	97.03	18.67	$P=0.62$	0.799
Dormitory	82 (34.5)	95.74	19.89		
Grade					
Bachelor	198 (83.2)	91.76	16.2	$P=0.001$	3.543
Graduate	40 (16.8)	100.21	13.54		

Table 2: Comparison of mean scores and standard deviations of areas of University engagement of students with scores in the following categories

University engagement Areas of University engagement	Mean	SD	r	Pearson correlation test	P value
Active and collaborative learning	17.95	8.04	0.54	0.599	$P=0.00$
Level of academic challenge	24.99	8.63	0.16	0.692	$P=0.00$
Student and faculty interaction	15.64	5.93	0.67	0.672	$P=0.00$
Supportive campuses environment	12.1	3.1	0.15	0.147	$P=0.023$
Enrich the educational experience	24.69	7.56	0.5	0.508	$P=0.00$

of BS nursing students' university engagement with other students in the same degree (BS), but in other courses. They reported that although nursing students are notably involved in their curriculum, they consider their professional course more competitive than other courses and involve themselves less in collaborative learning and interactional and active educational techniques compared to other studied courses of health professionals. They had lower perception from EEE and adequate educational interactions in the faculty. Authors concluded and emphasized on the necessity of curricular advanced interventions and strategies of students' university engagement increase.^[5] Skill of learning conduct and facilitation and promotion of students' team work and collaborative education, both in theoretical and clinical education, is among the most important skills of nursing educators.^[9,12,27] Facilitation of learning necessitates a dynamic environment, which is not threatening, but driving the learners to learning through teacher – student interaction in challenging and inquiring conditions.^[28] Mean and SD of supportive campuses environment (12.1 ± 3.1) with a range of 6-3., EEE (24.99 ± 7.56) with a range of 10-50 and LAC (24.99 ± 8.63) with a range of 11-55 are in moderate and low levels. Nowadays, educational organizations have to move in the direction of constant improvement to survive and progress among other educational institutes.^[16] Collaborative learning is an efficient tool to fulfill educational needs of today's world, and educational institutes and universities should adjust themselves with the changes to be capable of responding to these needs, make their educational environment interactional and organize students' university engagement. Based on the obtained results, nursing educational system is almost ready to meet this approach so that students' ACL (17.95 ± 80.4) and SFI (15.64 ± 5.93) were in fairly moderate levels. Passive conventional educational methods with emphasis on knowledge transfer model are not outcome based and emphasize on preservation of a high load of materials. Growth and development of critical thinking necessitates the application of active students' centered and collaborative educational model in which the teacher plays the role of a facilitator more.^[24,29] Ahlfeldt *et al.* investigated academic engagement of students (in 56 university classrooms) who

underwent Problem Based Learning (PBL) by NSSE in Mid-western of USA. In this educational trend, cooperation, group collaboration and problem based learning have been defined as key factors.

Researchers in addition to emphasis on development of active and collaborative methods in university education, reported a high level of university students' university engagement.^[30] Sand-Jecklin reported that active and collaborative teaching method causes an increase in students' interest in collaborative learning.^[31] These studies are in line with the obtained results in the present study in relation with the association between university engagement and the type of teaching so that mean score of students' university engagement in the group of active education (100.62 ± 19.2) was significantly higher than passive conventional method ($P < 0.001$) [Table 3]. There was also a significant difference between ACL and SFI based on the type of teaching (active or passive) ($P < 0.001$). Mean scores of collaborative learning, with regard to mode of teaching (active or passive), were 22.5 (8.5) and 15.4 (6.5) respectively and mean scores of students' interaction with faculty, based on the type of teaching (active or passive), were 19.7 (5.9) and 15.6 (5.6), which was higher in active teaching group compared with teacher centered and passive teaching method [Table 3]. In the present study, students claimed to have shared their requests concerning their education needs with the teachers through making a tight student teacher interaction, and even in some cases, this tight interaction resulted in a change of teacher's teaching method to what students liked. Results of former research in this field reveal the higher effect of student centered and cooperative methods compared with lecture method so that in all these studies, the level of learning was higher is student centered and cooperative methods compared to conventional traditional method. One of the important and effective factors on learners' learning is teacher's teaching method. Successful educational results often depend on cooperative learning chances and focus on students' learning instead of just students' teaching. In fact, appropriate usage of teaching skills and methods and their proper application lead to fulfillment of educational and training objectives in a shorter period of time.^[17,32,34] Berger showed that collaborative

Table 3: Comparison of the mean scores and standard deviations of University engagement according to style of teaching

Teaching style	Active teaching		Passive teaching		t-test	P value
	Mean	SD	Mean	SD		
Areas of University engagement						
Active and collaborative learning	22.5	8.5	15.4	6.5	7.22	0.00
Level of academic challenge	26.3	8.4	24.3	8.66	1.759	0.08
Student and faculty interaction	19.07	5.9	15.6	5.6	4.488	0.00
Supportive campuses environment	11.67	2.8	12.35	3.3	1.61	0.1
Enrich the educational experience	26.13	7.5	23.89	7.4	2.201	0.029
University engagement score	100.06	19.2	9.51	17.04	5.87	0.00

learning techniques and case study were effective on students' problem solving skills and decision making.^[35] Popkess and Mcdaniel (2004) state that teachers can affect learning chances of students' collaborative learning and interaction through the use of education and active learning strategies in the classroom so that involved students experience active learning.

They also emphasized on advanced interventions on curriculum and students' university engagement increasing strategies in addition to ACL as a way to prevail students' activities and constructive engagement among university students.^[5] A significant association was observed between university engagement and level of students' education and occupation ($P < 0.05$). Students' with higher levels of education (postgraduates) found their education more interactional. As education in higher levels (MS and PhD) with inquiring and active method has been accepted as an approach, and as most of the employees were MS and PhD students, this result is not so unexpected [Table 1]. A positive correlation was observed between university engagement and its sub groups ($P < 0.001$) [Table 2]. There was a positive correlation between ACL with the mean score of university students' level of academic challenge (LAC) and SFI ($P < 0.05$). The most efficient atmosphere or environment, in which learning or critical thinking is developed, is a supportive environment and free of the threat. It develops intellectuality, inquiry, and trust and prevents judgment and prejudice. An efficient environment to increase learning is the one in which learning sources are accessible. A great part of these sources are the work force and individuals by who the students work as skilled staffs with valuable experiences can act as a role model for the students. The way the teachers are in interaction with the students is important. The attitude of the human resource to accept the student in their working team is effective on students' learning and increase of critical thinking.^[36] Sand-Jecklin conducted an experimental study in which the education was randomly divided into two specific groups of active collaborative education (case) and traditional lecture education (control). Results showed that the nurses, exposed to active and cooperative education, reported an increase of their preference for this method after an educational semester while those undergone traditional education preferred traditional methods more. In addition, the students attending active education classes had more demands for collaborative strategies and increase of independent study although both groups remembered the outcomes based on their superficial study including memorization.^[31] Administration of active learning methods makes an environment, which focuses on students' learning needs. Teachers can develop learners' motivation to be engaged in learning in great classroom environment through their efficient management of classroom and conducting

active educational strategies. Socratic questioning is usually used as a technique to stimulate active learning in great classroom environments. In addition, other useful strategies such as group discussion, debates and classroom management etc. are applicable too.^[9,11] As in recent years, many teaching strategies in innovative nursing education have developed and prevailed active learning and backgrounds for problem solving, critical thinking and communication skills and encouraged the students toward peer cooperation, consequently, lecture method has been considered as a negative method by some schools. Meanwhile, Oermann, by consideration of both active learning and lecture method, has suggested another method resulted from the combination of these methods in order to take advantages of both methods and indicated the benefits of this combined method.^[37] Nursing education should contain an educational strategy, which can encourage students to actively participate in the process of learning. Teaching strategy and collaborative learning accompanied with educational management and leadership is a combination prevailing students' involvement and activity in their learning and leads to increase of their problem solving skills and promotion of their personal and group abilities.^[9] Although collaborative learning is an active method for education of critical thinking skills and efficient use of educational classes and clinical situations, many nursing faculties yet use teacher centered educational approaches,^[12] which is consistent with the results of the present study.

CONCLUSION

Based on the obtained results of the present study, university engagement and nursing students' ACL is in moderate to low level which needs teachers', managers' and educational planners' close attention and practice in this regard. Finally, more engagement of the students in academic interactions through the development of educational strategies and application of active teaching methods and collaborative learning to improve nursing students' university engagement is suggested.

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