Original Article

Comparing Two Instructing Methods: Instructor-Based (Traditional Lecture) and Student-Based (Class Conference), in Healthcare Learning in Kashan Medical Science University

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Abstract

Aims: Evaluating different methods of profound learning and efficient memorizing is a vital solution for medical science students because of the importance of this science. The present study overviews the comparison between the traditional instructing and the class conference methods. **Materials and Methods:** This quasi-experimental study was conducted on 50 students of Kashan in 2016 and 2017 selected by available sampling method. For the first group (25 students), instructing was performed via traditional lecture, and the second (25 students) experienced class conference approach. At the end of each semester, the satisfaction questionnaire assessment and knowledge of the students distributed among the subjects and filled out, then analyzed by SPSS 16 software. **Results:** The mean scores obtained from traditional lecture and class conference approaches were 95 with 4.2 ± 0.41 and 96 with 4.44 ± 0.36, respectively ($T = 0.6$, $P = 0.06$), which demonstrated no significant difference. Furthermore, the students' satisfaction level of lecture and conference was measured as 3.87 ± 0.41 and 4.58 ± 0.25, respectively, which revealed a significant difference ($P = 0.04$). **Conclusion:** Although the two instructing approaches used in this study did not considerably affect the final scores of the students, and no statistically significant difference was observed among the students for the two methods, class conference could mostly draw attention of the students. Therefore, extended research on applying student-based rather than instructor-based approaches is suggested.

Keywords: Instructing methods, teacher centered-student centered, traditional instructing

Introduction

In general, there are two educational models in different educational systems. The first is the instructor-based model, in which the learner relies on instructor knowledge and lecture. In this method, students learn the courses. The second is the student-based method, which focuses on the learner's needs or skills.[1] Lecture method is considered as one of the prevailing instructor-based approaches which facilitates and paves the way for thinking and attention of the students.[2] However, it has been retained in a good established position in different curriculums because of various factors as well as its convenience, compliance with populous classes, numerous contents of the courses, and time-saving of instructing.[2,3] This approach, as an economic method for introducing new opinions and concepts or recognition of physiological and ergonomic aspects of the human body, has been applied for medical science students. Nevertheless, they should be encouraged and realize how to improve their ability for self-learning in a variable environment as an adept skillful well-informed human force with a high level of performance and efficacy[4] for their society.

During the recent decades, numerous modern methods of learning and instructing have been developed in the field of university courses. The conventional instructor-based approaches are being

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replaced by the modern student-based instructing methods as innovation. To practice the modern student-based instructing approaches helps the students deeply comprehend the course contents and will expedite achieving the educational targets which is predominantly a long perpetual learning.[5]

One of the key models of student-based approaches is the class conference. In this regard, peer teaching through class conference will encourage the students to actively participate in instructing[6] through which a much number of the students will be involved with the instructing process comparing to the lecture method. This will support them experiencing an actual conference and draw attention to their instructor's strategies.[7] Conference, as a learning approach, is in conjunction with the sense of incentive and excitement by which the students feel convenient and confident. The purpose of this method is to learn more and receive feedback from instructors.[8]

In the study of Adib-Hajbaghery and Afazel, student-based learninig has been satisfied among the students in comparison with the instructor lecture method.[2] Mahram *et al*. illustrated in their study that group learning seems to be dramatically deeper and efficient.[9] In another study, Babaei said: "The satisfaction and interest of medical students increases with student-besed learning."[10]

Materials and Methods

The present study has been conducted in a semi-empirical form through census on 50 medical science students selected from the Kashan University of Medical Science for their healthcare course during the first and second semesters of 2016 educational year. The subject of the project was approved by the school administration with goals and expectations of learning, student homework, provision of facilities, references, assessment methods and timetable. They also were informed of the "way of presenting the course."

All the syllabuses of the course were presented via lecture and power point tools by the instructor within the first semester of 2016 in the traditional group.

The students were allowed to question if needed and note the presented contents during the time of the class, but no other participation had been defined.

During the first semester of 2017, teaching was conducted through class conferences by the students and one group of the students presented their conference in each session. The students instructed according to the course plan framework following the establishment of groups, each composed 5 students (ten 5-student groups), in the early of the semester. All the groups' members (the students) represented the contents using power point, and other students were allowed to take part in discussions. During the class conferences, the instructor was present in the class to create an appropriate atmosphere for the students and at the end of the session concluded and collected the presented contents and answered the questions which were ambiguous to reply or the students were unable to response.

The questionnaire of Khatiban[11] was used to measure the student satisfaction level for the instructing methods. The questionnaire included 12 items in three fields: (a) awareness of teaching goals and acquaintance with the instruction methods, (b) the effect of the approach on the incentive and satisfaction and learning interest, and (c) general facilities and conditions of the instruction. The Likert scale was adjusted for the answer options ranged from completely agree to completely disagree. The content validity and the repeating test methods were used to measure the questionnaire validity and reliability, respectively, which obtained 79%.

The final semester examination was conducted preparing four-option and descriptive questions for the two groups to measure the students learning score. The aforementioned questionnaire nominal and quality validity was confirmed according to the perspectives of 10 instructors of Kashan University of Medical Science, and for reliability measuring, the questionnaires were filled out by 20 students, and the alpha Cronbach coefficient was obtained 0.91, eventually.

The collected data were analyzed using SPSS 16 software (SPSS Inc., Illinois, USA). The Kolomograph–Smirnov test confirmed the normal distribution of the data and used for independent *t*-test.

For the ethical concerns, the research authors gained the allowance and consent to conduct the study from the faculty members. Moreover, the research purpose and the instructing method were entirely demonstrated to the students and their conscious consents were gathered accordingly. They were assured that the information obtained from the satisfaction questionnaire would sustain confidential and they had not to mention their names or surnames. Thereby, the acquired results on satisfaction would not influence their education valuation.

The limitations of this study were the licensing of colleges.

The researchers evaluated the results and supervised the teachers.

The questions were the same for 2 years. Students and teachers were asked a question, do not tell.

Ethical considerations included obtaining permission from the faculty and the lack of mention of the names of professors and students.

Professors' questions and opinions were given a score. Scores were calculated for all students.

If the students did not understand the course, the teachers provided them with supplementary explanations.

Results

On the strength of the results captured by the present study, the final-semester examination scores showed no significant difference between the traditional and presentation approaches, in practice. The mean amount of the first semester of 2016 and 2017 scores was achieved as 4.2 and 4.44, respectively ($T = 0.6$ and $P = 0.55$).

According to Table 1, having sufficient understanding of educational method and educational goals leads to a significant difference between the two methods; In addition, the average satisfaction and interest in the student-based approach was higher.

Discussion

The results of this study showed that Students' interest and motivation for learning in the student-centered approach has increased.

The present study results were in accordance with those achieved by Mahram *et al*. Meanwhile, no significant difference was observed by comparing the examination scores between the two methods of instructing which was not in correspondence with those extracted from Mahram *et al*.'s study.[9]

In a similar study conducted by Delaram in Shahrekord, learning level had been analyzed by comparing the two instructing methods among midwifery students. In this study, the quiz scores were dramatically higher in group discussion method than those acquired by lecture method which was not in accordance with the present study results.[12]

The studies of Herzig *et al*.[13] and Dehghan *et al*.[14] demonstrated that the students drew strong attentions to traditional lecture method, while the present study reported this affection toward the class conference method performed by the students.

The second part of the present study findings on the field of knowledge assessment reported no significant difference between the two groups which was in compliance with the results of Baghaie,[15] Safari and Ghahari,[16] and Anderson and Thomson[17] studies.

In another study, it was suggested that the students were concordant with the diverse benefits and advantages of class conference method either as instructors (teacher) or learners (students),[18] which was aligned with the present study results.

Jeffries asserted in his study that although the student-based approaches might burden no important influence on the final scores of the students comparing with lecture-based methods, they can enhance self-confidence, learning satisfaction, and cognitive abilities in students.[19] Another advantage of this method is the assignment of obligations and responsibilities of instructors to the students. Furthermore, it gives lessons to the students that they can learn more profoundly once they teach peers and help each other, through which it improves their learning and academic skills, social-emotional achievements, thinking, and personality development.[20-25]

Table 1: Results of comparison between the traditional and class conference methods acquired through the survey questionnaire filled out by the students

The studied field	Mean±SD		*P**
	Traditional approach	Class conference approach	
Awareness of the instructing method and learning purposes	3.76±0.4	3.76±0.51	0.06
Satisfaction and interest	2.78±0.2	4.56±0.42	0.03
Facilities and physical conditions	3.06±0.3	4.24±0.33	0.04

*Independent *t*-test. SD: Standard deviation

Conclusion

Taking into account the population of the study which included only medical science undergraduates, one should bear in mind that this group of students have mostly higher intelligence quotations and learning skills and can well become adopted with different types of exams and obtain good scores. On the other hand, the style of learning in students is a habitual and individual approach. The style of studying and learning of the graduated students trained via traditional systems has also been partially impressive on the present study results.

Referring to the results, using peer teaching-learning methods based on student participation, as well as class conference, is offered because it bears the potential for self-learning and satisfaction sense among the students. In addition, implementing student-based learning methods can bring an important consideration to the university instructors and directors that instructing is not only a one-way information transfer, but is in fact an interactive participative process between the instructor and learner.

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Conflicts of interest

There are no conflicts of interest.

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