Full Length Research paper

A comparison between student ratings and faculty selfratings at School of Pharmacy in AJUMS in Iran

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The objective of this study was designed to compare the faculty self-ratings with the student ratings at school of pharmacy in AJUMS in 2009. This study was designed as a descriptive cross-sectional study. All 180 students and 25 faculty members of the school of pharmacy were participated in the study. Both groups accomplished the same questionnaire including 15 evaluation items. The questionnaire was based on 5-point, Likert scale from poor to excellent (1 to5). The mean of faculty self-ratings was 4.52±0.34 and of student ratings was 4.04±0.39, (p<0.001). 92.6% of faculty members evaluated themselves as excellent (more than 4). However, 48.1% of students evaluated their faculties as excellent (more than 4). Correlation between student ratings and faculty self-ratings was 0.40(p=0.039). Faculty self-ratings and the evaluation of faculty teaching by students was significantly different. It means that either the methods of teaching were not satisfied to the students or the faculty members were self-centered. The reason of this discrepancy should be considered in next studies.

Keywords: Student-rating, Faculty self-rating, evaluation, students, faculty.

INTRODUCTION

Student evaluations are the most commonly used method of assessing an instructor's effectiveness in high education. A purported use of student evaluation is for faculty members to improve their teaching, although personnel decision-making is more often the reason behind student evaluation (Yao Y 2005; Surratt 2007).

Despite the documented reliability and validity of student evaluations, whether students have enough content knowledge to effectively evaluate teaching has been the subject of debate in the educational research literature (Tozoglu 2009; Onwuegbuzie 2009; Beran 2009). However, the student ratings have always been an argumentative approach from the faculty. In addressing this concern, faculty member self-evaluations, in addition to student evaluations, have been recommended as a more holistic approach (Dennis, 1990; Karamdoust, 2004).

Adams (1997) suggested that the evaluation of

teaching has never been criticized for revealing students' satisfaction with the teaching performance, but they have been mostly criticized for acting as a scale to measure the instruction efficiency. He believes that student ratings is not aiming at a summative evaluation but seeking a formative evaluation in order to promote the teaching performance (Adams, 1997). Therefore, the most important purpose of student ratings is to prepare feedback for faculty members to improve their teaching method and educational performance.

Jacobs (1987) investigated ideas of more than one hundred faculty members, and then realized that although they were not mainly opposed to student evaluation, they supposed that students are not at the position to judge about certain issues such as "instructor's knowledge and his updated information". Results from another study on views of academic staffs of the School of Pharmacy were shown that although there were less positive views about student ratings, the results of the ratings were applied in teaching methods and improved the quality of performance (Barnett 1997). According to Marsh and Roche (1993), faculty members provided with student evaluation feedback and consultations received significantly higher ratings within a

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year than faculty members who did not receive any feedback or consultations.

There are many factors that seem to have an impact on faculty use of student evaluation feedback to improve their teaching. According to Centra (1993), teaching improvement occurs only if a faculty member knows how to make changes and is motivated to do so. Even if faculty members know how to interpret student evaluation results, they may not know what to do in order to improve their teaching (Jacobs, 1987). However, student ratings do have their limitations, especially when they represent the only method of teaching evaluation used in tenure or promotion decisions. Departments should gather evidence of teaching effectiveness from a variety of sources. These may include: peer evaluations, letters from students, syllabi and instructional support materials, and individual teaching portfolios. Student evaluations, if they are properly constructed, should be part of this mix because they offer an indispensible perspective on an instructor's effectiveness. Moreover, student feedback is an important tool for individual instructors who wish to improve their teaching.

Research studies have investigated the faculty attitudes toward student ratings related to faculty background variables, such as academic rank, age, discipline (Aghamolayi, 2008; Chang, 2003). However, these background variables can not deeply explain why some faculty members agree with student ratings and some do not. Most of these "faculty attitudes" studies have assumed that faculty may feel more positively toward student ratings if they are highly rated by their students (Chang, 2003).

Many studies have examined different aspects of evaluating faculty members (Maaroufi 2007; Vahid-shahi 2009; Moor, 2009), but faculty self-ratings have been assessed less. In Iran, there are also a few numbers of comprehensive studies which assess the relationship between student ratings and faculty self-ratings (Aghamolayi 2008; Vahid-shahi 2009). Self-assessment is one of the best methods to evaluate faculty members, which has not been taken seriously in Iranian Universities and is yet to have not a procedure to be carried out. Faculty members are considered as an evident source for collecting data about them, with no one except them having a deep and forthright view about themselves. That is why some researchers consider faculty self-ratings as a useful tool to improve valuable teaching skills (Daniel 2006). This may enable faculty members to recognize their faults in teaching performance through selfmonitoring and alleviating the faults in order to make steps towards a perfect quality. The simultaneous use of student ratings and faculty self-ratings is a method which is now being used at most of major universities across the world to make changes and progress in their teaching programs.

The following study was conducted to address the methodological concerns about the evaluation of teaching

methodological concerns about the evaluation of teaching that are outlined above. The objectives were (1) to determine the differences between the results obtained from student evaluations of faculty member performance with those obtained by faculty member self-evaluations of their performance, and (2) to determine the relationships between the overall results of student evaluations with faculty self- evaluations at Ahvaz Jundishapur University of Medical Sciences (AJUMS) in 2009.

METHODS

Thirty-one faculty members at the AJUMS School of Pharmacy were asked to participate. The faculty members completed self-evaluations of their teaching within courses. Students completed separate in-class evaluations of each of the course faculty members at the conclusion of that faculty member's teaching.

Faculty members and students used the same evaluation criteria, which included 14 items measuring specific aspects of instruction and 1 item measuring overall teaching ability with 5-point Likert scale from poor to excellent, with scores from 1 to 5 to evaluate the teaching (Table 1).

The validity of the questionnaire was already approved in a study conducted at the University Educational Development Center (EDC). The reliability of the questionnaire was also approved at the same center through calculating Chronbach alpha with α =0.84.

First, a copy of results from evaluation of all faculty members, kept at the archives of the EDC, was prepared and coded. Each faculty member was sent a coded self-rating questionnaire along with a paper explaining the purpose and necessity of the study. Each academic staff was given a code to prevent the appearance of their names in questionnaires. Then they were asked to fill the questionnaire on their own teaching performance. Those faculty members who did not complete their self-rating questionnaire or were not evaluated by students were omitted of the study.

The analysis of the data was carried out by the use of SPSS-15 program. The indices of descriptive statistics, including mean and standard deviation were used to summarize the data. ANOVA and t tests were utilized to compare means and Pearson correlation coefficient was used.

RESULTS

Twenty-seven self-rating questionnaires were completed and returned (response rate 87%). Out of 27 faculty members, 8 (29.6%) were women and 19 (70.4%) were men. Two faculty members held the rank of professor, 6 were associate professors, 15 were assistants, and 4 were instructor.

Table 1. Mean and standard deviation of faculty self-rating and student ratings at school of Pharmacy

| Items | Student rating | Self - rating | Diff Mean | Correlation |
|--|----------------|---------------|-----------|-------------|
| 1-Instructor's punctuality and watching out class time | 4.18±0.58 | 4.59±0.64 | -0.41* | 0.680** |
| 2-highlighting purpose and content of course at every single session | 3.89±0.45 | 4.37±0.49 | -0.48* | 0.150 |
| 3-Observing cohesion and consistency of the content area(s) | 3.92±0.48 | 4.41±0.50 | -0.48* | 0.242 |
| 4-Presenting comprehensive examples and proper exercises | 3.80±0.43 | 4.44±0.64 | -0.54* | 0.412* |
| 5- Instructor's knowledge of the content area(s) and the capability in answering questions | 3.93±0.37 | 4.59±0.50 | -0.56* | 0.292 |
| 6-Presenting an outline for content area(s) and keeping it during semester | 3.81±0.50 | 3.93±0.73 | -0.12 | 0.328 |
| 7-Use of new and various sources available | 3.80±0.46 | 4.46±0.65 | -0.56* | -0.029 |
| 8-Instructor's attention to students' attendance in class | 4.14±0.22 | 4.52±0.70 | -0.37* | 0.139 |
| 9-Instructor's ability to manage the class | 4.15±0.30 | 4.54±0.58 | -0.39* | 0.192 |
| 10-Instructor's willingness to teach students | 3.92±0.43 | 4.73±0.45 | -0.31* | -0.190 |
| 11- Enhancement of student class participation | 3.91±0.40 | 4.56±0.57 | -0.54* | -0.216 |
| 12-Motivating students to further research and study | 3.69±0.41 | 4.33±0.73 | -0.53* | -0.218 |
| 13-Assessing class learning during semester | 3.80±0.37 | 3.85±0.91 | -0.05 | 0.125 |
| 14-Instructor's social behavior with students and mutual respect | 4.21±0.43 | 4.54±0.58 | -0.32* | 0.570** |
| 15-Student's overall evaluation of instructor | 3.89±0.30 | 4.29±0.46 | -0.39* | 0.498* |
| Total Mean | 3.94±0.33 | 4.37±0.31 | -0.43* | 0.400* |

The majority of the faculty members (92.6%) were evaluated themselves at scores higher than 4 (excellent level), while only 48.1 percent of students evaluated the faculty members' teaching performance with scores higher than 4 (excellent level).

Analysis of variance was conducted on the combined data for all instruction to determine if there were significant differences among the mean ratings by the faculty members and student subsets for each evaluation item (Table 1). The most significant difference found between the faculty members' self-evaluation scores and the mean scores for student evaluations was presented. Analyses were also conducted at the level of individual instruction, defined as each instruction event. For every data record, t-tests were conducted on each of the 15 evaluation items to see how the faculty self-rating compared to the mean student rating. For each item, significant differences and the direction of the differences were recorded. For all 15 items, when significant differences between faculty member and class ratings occurred, the faculty members rated themselves higher on the item than did the students in their class (figure 1).

The most frequently occurring difference between the faculty members' rating themselves and the ratings by the students in their classes was for the evaluation item, Instructor's knowledge," and "Use of new sources," for which half (50.0%) of the faculty members rated themselves higher than their students did. In evaluating faculty members, students gave the highest average score to question number 14, "faculty member's social behavior with students and mutual respect" (4.21±0.43). The lowest average score was given to question number 12 "motivate students to carry out further research and (3.69±0.41). When self-evaluating, study" members gave the highest score to question number 1 "academic staff's on time attendance in classroom and monitoring the class time" (4.59±0.64) and question number 5 "good comprehension of material and ability to answer questions" (4.59±0.50). They gave the lowest score to question number 13 "evaluating students' learning in classroom during a semester" (3.85±0.91).

The highest difference between faculty self-ratings and student ratings was for question number 7 "use of new

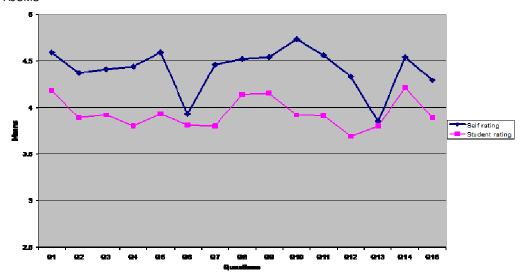


Figure 1. Liner comparison between faculty self-ratings and Student ratings at School of Pharmacy in AJUMS

sources" (-0.56), and the lowest difference came for question number 6 "presenting students an outline for the course and keep it on during the whole semester" (-0.12).

Results from the study indicated that the total average score of faculty self-ratings was higher than that of student ratings (t=6.329 and p<0.0001). The total average score of student ratings was at 3.94 ± 0.33 (scores ranging from 3.29 to 4.58), while faculty self-ratings mean score stood at 4.37 ± 0.31 (scores ranging from 3.73 to 4.87) (Table1).

The average score of female faculty self-ratings was 4.33 ± 0.25 , while the average score of male faculty self-ratings was 4.39 ± 0.34 . There were no significant differences between male and female faculty members. The average score of student ratings of female faculty members was at 3.70 ± 0.36 and for male faculty members standing at 4.04 ± 0.27 . There was a significant difference between the means (t=2.71 and p=0.012).

The average scores of faculty self-ratings stood at 4.37 ± 0.31 , 4.61 ± 0.35 , 4.33 ± 0.34 , and 4.48 ± 0.31 respectively for instructor, assistant, associate professor and professor. The average scores of student ratings stood at 3.87 ± 0.37 , 3.91 ± 0.33 , 3.99 ± 0.39 , and 4.14 ± 0.08 respectively for instructor, assistant, associate professor and professor. No significant difference was shown between evaluation scores and faculty members rank. A correlation coefficiency of 0.400 was seen between faculty self-ratings and student ratings scores (p=0.039).

DISCUSSION

This study has documented that, overall, faculty members self-evaluations of their teaching and student evaluations produce no similar results. The results indicate that the average score of faculty self-ratings is significantly higher than the average score of student ratings. Similar results have already been reported in previous studies (Mohammad, 2007; Aghamolayi, 2008; Vahid-shahi, 2009). Two separate surveys conducted at Mazandaran and Hormozgan Universities of Medical Sciences revealed that the average score of faculty self-ratings was higher than the average score of student ratings, and that there was a significant statistical difference between the scores (Aghamolayi, 2008; Mohammad jaafari 2007).

A study conducted on 343 faculty members of five schools in New Jersey, indicated that faculty members, in comparison with students, had better assessment of teaching and gave themselves higher scores (Centra, 1973). In addition, results from a similar study carried on 17 faculty members of University of Illinois showed that the average score of faculty self-ratings of teaching had been higher than the average scores of student ratings. but statistically significant difference was not seen (Braskamp, 1979). Furthermore, results from Barnett study conducted on 31 faculty members of School of Pharmacy of Mercer University indicated that faculty selfevaluation and student ratings had produced same results in general (Barnett, 2003). Results from these studies do not correspond with the results of similar studies conducted in Iran, probably faculty members at foreign universities have a positive attitude toward the evaluation of teaching, and there is psychical security and the culture of self-assessment (Ross, 2007; Idaka 2006).

The higher self-ratings of faculty members indicate that faculty members have a more positive attitude about themselves. Faculty disapproval of student evaluation, different attitudes about appropriate teaching, and lack of

an equal understanding of effective teaching are seemed to be some of the main reasons behind the disagreement. Mistrust, lack of psychical security, and absence of the culture of self-assessment also contributed to the reasons. Although some of the aforementioned reasons to some extent may justify the disagreement between faculty and student attitudes, further studies are definitely needed to identify the real reasons. The results of several studies provide a general consensus about some apparent dimensions of selfevaluation condition in society (Motlagh, 2000; Evans, 2002; Sicaja, 2006). These include (1) the lack of assuring conditions for self-assessment, (2) the lack of the culture of self-evaluation in the society, (3) and necessity for change in the society's culture to make a successful selfassessment.

A review on the teaching evaluation questionnaire, item by item, showed that there was a significant statistical difference between faculty self-rating scores and student rating scores for most items, and this to some extent corresponded with the results from similar studies so far conducted in Iran (Aghamolayi, 2008, Mohammad, 2007; Adhami, 2005; Najafi, 2000). The highest difference between faculty self-ratings and student ratings was observed in items 10, 7, 11 and 12 respectively (Table 1). The difference in such items which are mostly related to the teaching methods and skills led to the conclusion that there was almost a high difference between the faculty members and student attitudes. Comparisons have revealed that faculty members and students have the most different opinions about creating motivation in students and class participation. Paying attention to students during class time and making proper relation with them are among the main pillars of a dynamic and active teaching method, which also stimulate and facilitate purposeful learning. Therefore, faculty members must be aware of these pillars and should motivate students in order to provide them with appropriate opportunities.

A review on questionnaire's evaluation items also indicated that the least difference between faculty self-ratings and student ratings was respectively for items 8, 13, and 1 (Table 1). The items were mostly related to academics personal features, and revealed less different ideas between faculty members and students. This has corresponded with the results from a study by Aghamolavi (Aghamolavi, 2008).

The educational performance of faculties in universities is continuously assessed by students in order to promote the quality of education. Results from various studies are indicative of the fact that student evaluation of teaching is effective in improving teaching performance (Cohen 1980; Shakurnia, 2001; Kember 2002; Jouybari 2009). However an important issue is that how much faculty members approve student ratings so that they use the reflection of the results as a useful source to improve

their teaching performance. The Results of this study indicate that faculty members have put themselves at higher ranks in most of cases, and this reveals a significant disagreement between students and faculty members as far as a general attitude toward evaluation and the quality of teaching is concerned. Therefore, it appears that the differences between faculty and student attitudes may complicate efforts for improving the quality of teaching. Such differences may also hinder the optimization process of the teaching quality, which is among the main purposes behind the evaluation process. Therefore, such an issue demands strong attention of the faculty officials. In addition, concerning the results of this study and the importance of faculty evaluation in promoting the quality of teaching, it is suggested that:

- 1) Grounds be prepared for increasing approval of evaluation results by faculty members through making appropriate planning and creating a positive attitude toward student ratings.
- 2) Correspondence be enhanced between viewpoints of faculty members and elite students regarding the evaluation questionnaire items through meetings held by faculty members and elite students on evaluation.
- 3) The degree of the approval of results by faculty members be increased via periodical consulting with them about different dimensions of evaluation and motivating them to participate in the evaluation process.
- 4) Faculty members be provided with guides on the use of weaknesses and strengths as well as the improvement of the teaching performance when they are informed of the results of the evaluation.

Although the subset of this study was larger than those of studies conducted previously, it had some restrictions too. Students with associate of arts diploma degree, bachelor's degree, and doctorate, as well as instructors with various specializations in different majors participated in the study. Such a variety could affect the results of the study. Therefore, extra surveys devoid of the impacts by such factors are recommended.

CONCLUSION

The results indicated that the average score of faculty self-ratings were significantly higher than the average score of student ratings. In all evaluation items, faculty members had more positive views about the teaching performance than students did. This revealed a disagreement between viewpoints of faculty members and students as far as the educational performance and the evaluation of the teaching's quality were concerned. Since the most important purpose behind such studies is to provide faculty members with reflections aimed at improving the educational performance and promoting. So for the acceptance and adoption of evaluation results for faculty members should be planned.

REFERENCES

- Adams JV (1997). Student Evaluations: The Ratings Game.; Inquiry, 1(2):10-16
- Adhami A, Reihani H, Fattahi Z, Nakhaei N, Fasihi Harandi T (2005). Comparison of student assessment of educational performance of the faculty with the teacher's self-assessment in Kerman University of Medical Sciences. Strides in Development of Medical Education. 2(1): 25-32[Persian]
- Aghamolayi T, Abedini S (2008). Comparison of Self and Students' Evaluation of Faculty Members in School of Health of Hormozgan University of Medical Sciences. Iranian J. Med. Educ. Aut and Win; 7(2): 191-198. [Persian]
- Barnett CW, Matthews HW, Jackson RA (2003). A Comparison between Student Ratings and Faculty Self-ratings of Instructional Effectiveness. Ame. J. Pharmaceutic. Educ. 67 (4) Article 117.
- Barnett CW, Matthews HW (1997). Student evaluation of classroom teaching: A study of Pharmacy Faculty attitudes and effects on instructional practices. Ame. J. Pharmaceutic. educ. 61: 345-350
- Beran TN, Rokosh JL (2009). Instructors' perspectives on the utility of student ratings of instruction. Instr Sci. 37: 171-184
- Braskamp LA, Caulley D, Costin F (1979). Student ratings and instructor self-ratings and their relationship to student achievement. American Educational Research Journal. 16(3): 295-306
- Centra JA (1973). Self-Ratings of College Teachers: A Comparison with Student Ratings. J. Educ. Measurement. 10(4): 237-311. Availability Options: ERIC Full Text:
- Chang T (2003) Results of student ratings: Does faculty attitude matter? Bulletin of Educ. Psychol., 35(2), 183-200 National Taiwan Normal University, Taipei, Taiwan, R.O.C.
- Chang T (2009). Faculty attitudes toward student ratings: Do the resultant rating scores really matter? National Hualien Teachers College Hualien, Taiwan, 970, R.O.C.[cited 2009 feb 20] available from:140.122.69.160/bulletin/3502/3502pdf/p183-200-張德勝.pdf
- Cohen PA (1980). EFFECTIVENESS OF STUDENT-RATING FEEDBACK FOR IMPROVING COLLEGE INSTRUCTION: A Meta-Analysis of Findings. Research in Higher Education. 4(13): 321-41
- Daniel Duffy F, Holmboe ES (2006). Self-assessment in Lifelong Learning and Improving Performance in Practice: Physician Know Thyself. JAMA. 296(9):1137-1139 eric.ed.gov/ERICWebPortal/recordDetail?accno=ED073176
- Dennis Ll. (1990) Student evaluations: Are they an appropriate criterion for promotion? Nurs Health Care. 11:79-82.
- Evans AW (2002). McKenna C, Oliver M; Self-assessment in medical practice. J R Soc Med 95:511–513
- Idaka II, Joshua MT, Kritsonis WA (2006). Attitude of academic staff in Nigerian tertiary educational institutions to student evaluation of instruction (SEI). Int. J scholarly academic intellectual diversity. 9(1): 1-9
- Jacobs LC (1987). University Faculty and Students' Opinions of student Ratings, Indiana Studies in high education. Pp 55, Bureau of evaluative studies and testing Indiana University, Bloomington IN
- Joibari L, sanagou A, cheraghali F (2009). Do feedback to improve student academic performance lead? Experiences of teachers. . Green Community Quarterly Journal of Medical Education Special Education Proceedings of the tenth National Congress of Medical Sciences Shiraz, pp 6-216) [Persian]
- Karamdoust N (2004). Dependency evaluation of professors from undergraduate students in Professor of Psychology and Educational Sciences Faculty of Tehran University in the Spring of pp 78-77 to 80-79. J. Psychol. Educ. 34(1):57-76[Persian]

- Kember D (2002). Leung D.Y.P.; Kwan K.P. Does the Use of Student Feedback Questionnaires Improve the Overall Quality of Teaching? Assessment and Evaluation in Higher Education. 27(5): 411-425
- Marsh HW, Roche L (1993). The use of students' evaluations and an individually structured intervention to enhance university teaching effectiveness. Ame. Educ. Res. J. 30(1), 217–251.
- Marofi Y, kiamanesh A, Mehrmohammadi M, Aliasgari M (2007). Teaching assessment in high education: an investigation of current approaches. J. curriculum stud. (J.C.S.). 2(5): 81-112 [Persian]
- Jafari HM, Vahidshahi K, Kosaryan M, Mahmoodi M (2007). Comparison between the results of academic staff self-assessment and those made by the students, Faculty of Medicine, Mazandaran University of Medical Sciences, 2006. J Mazand Univ Med Sci . 17(57):67-74 [Persian]
- Moore S, Kuol N (2009). A Punitive bureaucratic tool or a valuable resource? Using student evaluations to enhance your teaching (University of Limerick).[cited 2009 Jan 12] Available from:http://www.aishe.org/readings/2005-1/moore-
 - A_punitive_bureaucratic_tool_or_a_valuable_resource.html
- Motlagh M, Shakurnia A, Malayeri A, Jahanmardi A, Kiamanesh A(2000). An opinion of the faculty members of Ahvaz University of Medical Sciences toward teachers' evaluation through self-assessment method. Abstracts of the fourth National congress on Medical Education, Supplement of the J. Faculty Med. Pp 17 [Persian]
- Najafi M, Tamizi-far B (2000). Comparison the results of self evaluation with students assessment. Abstracts of the fourth National congress on Medical Education, Supplement of the J. Faculty Med.[Persian] Pp.20
- Onwuegbuzie AJ, Daniel LG, Collins KMT (2009). A meta-validation model for assessing the score-validity of student teaching evaluation. Qual Quant. 43: 197-209
- Ross JA, Bruce CD (2007). Teacher self-Assessment: A mechanism for facilitating professional growth, Ontario Institue for studies in Education University of Toronto, Canada. Teaching and teacher education. 23(2): 146-159
- Shakurnia A, Motlagh M (2001). Teacher Evaluation and Quality Promotion. The first national seminar in evaluation and accreditation. Ahvaz University of Medical Sciences. [Persian]
- Sicaja M, Tomic D, Prka (2006). Medical students' clinical skills do not match their teachers' expections: survey at Zagreb university school of Medicine, croatia. Croat. Med. J. 47(1): 169-175.
- Surratt CK, Desselle SP (2007). Pharmacy students' perceptions of a teaching evaluation process. Ame. J. pharmaceutic. educ. 71(1): 1-7
- Tozoglu D (2006) Effects of student ratings feedback on instructional practices, teaching effectiveness, and student motivation. The Florida state university college of education. [Dissertation] available from: etd.lib.fsu.edu/theses/available/etd-01032006-193209/unrestricted/tozoglu-dissertation.pdf
- Vahid-shahi K, Mahmoudi M, ahangari M, parvinnejad N, gouran N (2009). Evaluation of consistent clinical evaluation of education professors and their students view a professor at the Sari University of Medical Sciences. Green Community Quarterly J. Med. Educ. Special Education Proceedings of the tenth National Congress of Medical Sciences Shiraz. Pp 6: 238 [Persian]
- Yao Y, Grady ML (2005). How Do Faculty Make Formative Use of Student Evaluation Feedback?: A Multiple Case Study. J Pers Eval Educ; 18: 107–126