

Evaluation of the Importance of Effective Teaching Method Indicators From Dental Students' Prospects

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Background: Teaching and educating students is one of the most important responsibilities of teachers. Polling from students is an important method to determine indicators for effective teaching.

Objectives: The purpose of the current study was to determine indicators of effective teaching from the point of view of dental students of the Dental Faculty of Hamadan University of Medical Sciences.

Materials and Methods: In this Cross-sectional study, there were 205 student participants from the dental faculty of Hamadan University of Medical Sciences. The valid and reliable researcher made questionnaire consisted of individual characteristics, teaching methods, knowledge and the power of communication. Data were analyzed by descriptive methods using the statistical package for social sciences (SPSS) v. 13.

Results: In the field of knowledge, teaching method, power of communication and individual characteristics the priorities were subject predomination with average of 1.52, clear transmission with the average of 1.80, fair assessment with the average of 4.12 and fluent explanation with the average of 3.42, respectively.

Conclusions: Based on the students perspective, the most important aspect of effective teaching was teaching method. Having the ability in the subject clear transmission, being fair and clear communication were the priorities in each aspect.

Keywords: Dentistry; Medical Education; Dental Students; Teaching Method

1. Background

Attendants of universities are one of the most valuable and important parts of medical science universities (1). Duties expected of each attendant in these universities are categorized into seven sections: instruction, research, visiting patients, management, professional activities out of the university, personal promotion and civil activity (2). Among these duties, the most important is giving instructions to the students, and its quality influences the improvement of motivation, joy, creativity, efficacy of the attendant and the student (3). If we suppose an education system, which includes programs, methods and supported material for achieving definite instructional goals, a classroom would be a place in which all instructional and teaching programs and all financial, physical and human measurements lead to the success of students in learning knowledge and skills (4). It is obvious that students and attendants are two basic and fundamental parts of an educational system in a classroom (5). One of the major problems in universities education systems is the lack of

effective teaching inclinators. Effective teaching includes a series of actions and characteristics of the professor that lead to achievement of educational and learning goals by the students (6). Evaluation of the efficacy of a professor's teaching ability is more difficult than evaluation of their research ability due to the lack of suitable indicators. For example, for research ability we can evaluate the attendant according to their number of articles and research projects (7, 8). The results of researches have shown that there has been a distinct fall in the quality of attendants teaching in universities in which evaluation and promotion of professors are based on their research ability (9). Too much paying attention to research for promotion of professors is probably one of the reasons for the fall of teaching and learning quality in our country's universities in the recent years (10).

On one hand, evaluation of teaching without having effective teaching indicators not only does not improve quality of instruction but also causes quality fall (11). To

Implication for health policy/practice/research/medical education:

As students have critical role in university, promotion of dental education could improve the oral health status of society.

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determine effective teaching indicators there are different methods such as an opinion poll from the dean, co-workers, attendants and students (11). Attendants have suggested that awareness of student's opinion about effective teaching has an important role in improving instruction and teaching quality (12). Mozafari et al. in 2010 and Dad Khah et al. in 2009 reported that appropriate use of basic knowledge or professional course and the dominance of attendants and awareness about the subject were the most effective teaching indicators based on student's opinions (13, 14). Mazloomi et al. in 2010 and Marati in 2003 reported that teaching method, personality, communication power and scientific dominance were the most important and effective teaching indicators of an attendant, respectively (15, 16). Clinical teaching is one of the most important parts of the instruction process, because this is where most of the clinical professional learning would be completed (17). As a matter of fact to design educational programs that establish the talents of the dental faculty, students opinion and their grading should be a common teaching evaluation method (18). In our country, there has been dispersed researches with the aim of determining effective teaching indicators of attendants from student's opinion, yet in only a few researches, these indicators were separated into four aspects, including scientific dominance, teaching method, communication power and personality. Meanwhile, in most of the researches, answers to the questions of the questionnaire were not designed according to a ranking scale (19).

2. Objectives

The aim of this research was to evaluate effective teaching indicators of the Hamadan University of Medical Sciences, such as: teaching method (series of activities that are purposeful and planned and do not happen by accident. Activities which lead to instruction and are based on three main principles including the instructor, student and lessons (19)), individual characteristics (a series of personal behaviors in social situations (19)), knowledge (a collection of scientific information that usually aims at bringing complementary results which are published in scientific journals (20)) and power of communication (the ability to establish harmony and understanding between sender and receiver of a message, in which the message's meaning is the same for sender and the receiver (20, 21)).

3. Materials and Methods

This cross-sectional study was performed in spring of 2012 at the Dental Faculty of Hamadan University of Medical Sciences. This research included all the students from the second semester of 2012. The research sample was selected by a simple census and according to university's lists and a total number of 205 students were

selected. By evaluating similar researches in this field, the data collection tool of this research was a standard questionnaire including two parts. The first part included student's personal data like sexuality, age and their course and the second part evaluated the most important effective teaching indicators including knowledge, teaching method, power of communication and individual characteristics. The questionnaire's validity was evaluated by five experienced attendants of the Dental Faculty and its reliability was measured by 20 students, and the Cronbach's Alpha coefficient of all questions was 0.85. Each question depended on its indicators feature got numbers in a manner that number 1 presented the first priority and number 7 was given to the last priority (for teaching method indicator), 9 (for knowledge and individual characteristic), 10 (for power of communication indicator). Final prioritization of each indicator was done in a way that mean rank of each indicator was the level of that feature. All the students of the second semester of the 2012 university year, in the Dental Faculty of Hamedan University of Medical Sciences filled the questionnaire. They were verbally informed before filling the questionnaire by the researcher about the content of the questionnaire and its beneficial results and participated with an informed consent. Data were analyzed with descriptive methods using the Statistical Package for Social Sciences (SPSS) version 13.

4. Results

From the 290 distributed questionnaires, 205 questionnaires were collected from the students, which included 120 female and 85 male participants. One hundred and twenty-five students were at the clinical level, 45 students were at the basic sciences level and 35 students were at the preclinical level. Mean and standard deviation (SD) of determinants of effective teaching indicators are illustrated in Table 1. Priorities of effective teaching indicators are illustrated in Figure 1. The most effective feature of the attendants was teaching method (1.89 + 0.92) and the least effective was knowledge (2.55 + 1.33) according to student's opinions.

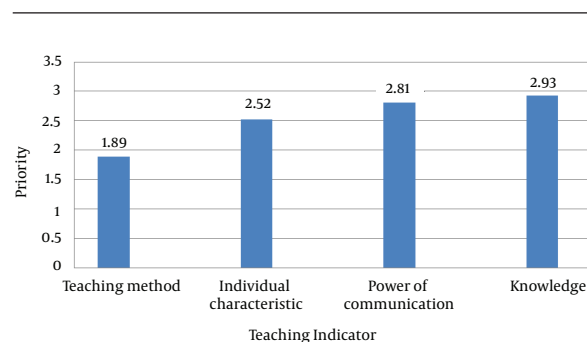


Figure 1. Priority of Effective Teaching Indicators

Table 1. Mean and Standard Deviation (SD) of Determinants of Effective Teaching Indicators

Effective Teaching Indicators	Mean ± SD
Knowledge	
Subject Predomination	1.52 ± 1.48
Presentation of New Concept	4.01 ± 2.31
Having Concept	4.04 ± 2.28
Having Publication	4.59 ± 2.53
Research	5.05 ± 2.88
Teaching	5.56 ± 2.64
Know References	5.61 ± 2.82
To Be up Date	6.09 ± 8.79
Expert in Software and Internet Use	7.49 ± 2.19
Teaching Method	
Clear Transmission	1.80 ± 1.58
Able to Organize	3.01 ± 1.89
To Be Forthcoming	3.04 ± 1.91
Motivation	4.06 ± 1.95
Use of Technologies for Education	4.55 ± 1.45
Able to Convey Reason	5.02 ± 1.09
Correlation Between Subjects and Job's Duty	4.09 ± 1.02
Power of Communication	
Interested in Students	6.07 ± 2.36
Participative Approach	4.07 ± 2.85
Good Community Relation	5.75 ± 3.07
Availability	5.57 ± 2.82
Induce Self Confidence	5.30 ± 3.06
Reestablish Concept	5.22 ± 2.47
Well Understanding	5.17 ± 2.24
Respect to Student	5.07 ± 2.84
Do Fair	4.22 ± 2.75
Fair Assessment	4.12 ± 2.79
Individual Characteristic	
To Be Logical	10.05 ± 2.19
Does not Personalize the Learning Process	9.18 ± 3.61
Witty Nature	8.39 ± 3.15
Trimness	8.02 ± 3.49
Open to Criticism	7.42 ± 3.62
Academic Personality	7.07 ± 3.46
Respect Social and Ethical Roles	7.06 ± 3.82
To Be Patient	5.51 ± 2.99
Punctuality	5.40 ± 3.17
Interested in Teaching	4.93 ± 3.22
Self-Confident	4.53 ± 3.21
Respectful Speech	4.48 ± 2.69
Fluent Explanation	3.42 ± 2.64

5. Discussion

In our research, male students were less than females. Based on course levels, participants were mostly at the basic science level followed by pre-clinic and clinic levels. In the research done by Mozafari et al. participants were also mostly female and at the clinic level (13). In the knowledge category, having subject predomination with the medium of 1.52 was the first priority while other options according to priority were presentation of new concept, having concept, having publication, research, teaching, know references, to be up date and expert in software and internet use, respectively. Dad Khah et al. reported that in the field of knowledge, the attendants dominance on the subject was the first preference and this was considered as a feature of a good attendant which is consistent with our research (14). However, Karamizadeh et al. expressed that in the field of knowledge having publications was the first priority. The inconsistency of this research with ours can be related to more and publishing in that research (22). In regards to teaching method, the ability to explain clearly was the first priority with the medium of 1.80 followed by the ability to manage the classroom, prepare the class and provoke motivation, the relationship between the subject and job's profession, benefiting education tools and transmission of motivation, respectively. Another study reported that in the category of teaching method, ability to explain clearly was the first preference, which is consistent with our research. However, Ellman et al. expressed that benefiting educational tools was the first priority in the teaching method category (23). These instant results can be due to less need for educational tools with patient's connected skills.

In the category of power of communication, participative approach with the medium of 4.07 was the first priority followed by fair assessment, do fair, respect to student, reciprocal understanding between students and attendants, re-explanation of subjects, providing self-confidence, easy access to attendants, friendly relationship, providing field of participation and interest to students, respectively. These results coincide with the Asgari's research (24). In the category of personality, fluent explanation with the medium of 3.42 was the first priority followed by respectful intonation, being self-confident, interest in teaching, being on time, patience and being patient with the students, obeying social and moral rules, having academic personality, welcoming critics, acceptable appearance, good-humor, not relating personal subjects to teaching and being logical, respectively. These results were in harmony with that of Mazloomi et al. research (15). Although Levy et al. reported that being on time was the first priority in the personality category (25). This inconsistency can be related to organization culture and their arrangement. The results of this research showed that according to students opinions, teaching method, personality, communication power and knowledge of research were the most effective as-

pects of an attendant, respectively and their mediums were 1.89, 2.52, 2.81 and 2.93 respectively, which coincides with the research of Mozafari et al. (13). In regards to knowledge of research, being dominant on the subject was the first priority with a medium of 1.90 among the students of basic science level, 1.52 among the pre-clinic students and 1.98 among the clinic students. The second priority according to the students of basic science and preclinical was presenting new subjects and this almost coincides with the research of Sun et al. (26). In regards to teaching method, the first priority was the ability to explain obvious subjects with the medium of 1.80 according to students of basic science, 1.87 according to the students of preclinical and 2.60 according to the students of clinic level. The second priority was the ability to provide new subjects with the medium of 1.90 according to the students of basic science, 1.89 according to the pre-clinic students and 2.99 according to the students of clinic and these results coincide with the research of Sharma et al. (27).

In the category of communication power, the first preference was having justice in the evaluation of students with mediums of 4.01, 3.08 and 4.30 according to the students of basic science, pre-clinic and clinic, respectively and the second preference was explanation of subjects according to the students of basic science (with the medium of 4.99) and pre-clinic students (with the medium 4.50) preferred having justice in noticing of students at the second priority which coincides with the result of Gerzina et al. (21). In the aspect of personality, fluent speaking was the first priority according to the students of basic science (with the medium of 3.67), pre-clinic students (with the medium of 4.44) and clinic students (with the medium of 3.09). Basic science students preferred being self-confident as the second priority and pre-clinic and clinic students assumed respectful intonation as the second priority with a medium of 3.70 and 5.01, respectively; these results coincides with the research of Nor et al. (28). In regards to the most effective aspect of each professor, teaching method was the first priority with a medium of 1.85, 1.28 and 2.18 according to basic science, pre-clinic and clinic students, respectively and this is consistent with the research of Gerzina et al. (21). According to the findings of this study, in the aspect of attendants knowledge, subject predomination was the first priority. In the aspect of teaching method, clear transmission was the first priority. In the aspect of power of communication, fair assessment was the first priority. Fluent explanation was the first priority and the most effective aspect of the attendant according to the students.

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Authors' Contributions

All authors contributed equally to this work.

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References

- Barron R, Frank E, Gitlow S. Evaluation of an experiential curriculum for addiction education among medical students. *J Addict Med.* 2012;**6**(2):131-6.
- Brown T, Williams B, McKenna L, Palermo C, McCall L, Roller L, et al. Practice education learning environments: the mismatch between perceived and preferred expectations of undergraduate health science students. *Nurse Educ Today.* 2011;**31**(8):e22-8.
- Petrova GG, Popov TN. Teaching methods in the healthcare management major. *Folia Med (Plovdiv).* 2009;**51**(3):60-6.
- Duvivier RJ, van Dalen J, van der Vleuten CP, Scherpbier AJ. Teacher perceptions of desired qualities, competencies and strategies for clinical skills teachers. *Med Teach.* 2009;**31**(7):634-41.
- Gustin W, Batra R, Amin A, Rucker L. Education first: reforming the first-year curriculum of the internal medicine residency. *Acad Med.* 2009;**84**(3):368-73.
- Karle H. Global standards and accreditation in medical education: a view from the WFME. *Acad Med.* 2006;**81**(12 Suppl):S43-8.
- Corwin SJ, Frahm K, Ochs LA, Rheaume CE, Roberts E, Eleazer GP. Medical student and senior participants' perceptions of a mentoring program designed to enhance geriatric medical education. *Gerontol Geriatr Educ.* 2006;**26**(3):47-65.
- Eckles RE, Meslin EM, Gaffney M, Helft PR. Medical ethics education: where are we? Where should we be going? A review. *Acad Med.* 2005;**80**(12):1143-52.
- Leisnert L, Karlsson M, Franklin I, Lindh L, Wretling K. Improving teamwork between students from two professional programmes in dental education. *Eur J Dent Educ.* 2012;**16**(1):17-26.
- Smith C, Swain A, Penprase B. Congruence of perceived effective clinical teaching characteristics between students and preceptors of nurse anesthesia programs. *AANA J.* 2011;**79**(4 Suppl):S62-8.
- Pololi LH, Frankel RM. Humanising medical education through faculty development: linking self-awareness and teaching skills. *Med Educ.* 2005;**39**(2):154-62.
- Trumble SC, O'Brien ML, O'Brien M, Hartwig B. Communication skills training for doctors increases patient satisfaction. *Clin Gov Int J.* 2006;**11**(4):299-307.
- Mozafari N, Mohammadi MA, Dad Khah B. Characteristics of effective teaching approaches for students of Ardebil university of medical sciences. *Res J Nurs Midwifery faculty.* 2010;**12**(63-71).
- Dad Khah B, Mohammadi MA, Mozafari N, Mohammad Nejad S, Molaii B, Dad Khah D. Characteristics of a good teacher of medical student of Ardebil university of medical sciences 2008. *Res J Nurs Midwifery faculty.* 2009;**11**:43-50.
- Mazloomi Mahmood Abad SS, Rahaei Z, Ehrampoush MH. The characteristics of an expert faculty member based on view points of medical students - Yazd, Iran - 2008. *Hormozgan J Med.* 2010;**14**(3):226-33.
- Marati S. . *Survey indicators of teaching effectiveness from the perspective of dental students in Hamedan University of Medical Sciences in 2003..* Hamedan: Hamedan Univ Med Sci; 2003.
- Chien LY, Huang HP. [The application of student-centered teaching to nursing education]. *Hu Li Za Zhi.* 2006;**53**(6):59-64.
- Spiel C, Schober B, Reimann R. Evaluation of curricula in higher education: challenges for evaluators. *Eval Rev.* 2006;**30**(4):430-50.

19. Ettinger RL. A 30-year review of a geriatric dentistry teaching programme. *Gerodontology*. 2012;**29**(2):e1252-60.
20. Tadakamadla J, Kumar S, Swapna LA, Reddy S. Occupational hazards and preventive practices among students and faculty at a private dental institution in India. *Stomatologija*. 2012;**14**(1):28-32.
21. Gerzina TM, McLean T, Fairley J. Dental clinical teaching: perceptions of students and teachers. *J Dent Educ*. 2005;**69**(12):1377-84.
22. Karamizadeh Z, Zarifsanayei N, Faghihi AA, Mohammadi H, Habibi M. The study of effectiveness of blended learning approach for medical training courses. *Iran Red Crescent Med J*. 2012;**14**(1):41-4.
23. Ellman MS, Fortin AHT. Benefits of teaching medical students how to communicate with patients having serious illness: comparison of two approaches to experiential, skill-based, and self-reflective learning. *Yale J Biol Med*. 2012;**85**(2):261-70.
24. Asgari F, Masole RSh, Mir Hagh Juo SN. Indicators of effective teaching of Gilan university of medical sciences students. *Iran J Med Educ*. 2003;**3**(10):48-9.
25. Levy BS, Wegman DH. Commentary: public health and preventive medicine: proposing a transformed context for medical education and medical care. *Acad Med*. 2012;**87**(7):837-9.
26. Sun H, Yang J, Kawashima N, Li Y, Zhang W, Wang P. A brief comparison of curricula at dental schools in China and Japan. *J Dent Educ*. 2012;**76**(6):765-73.
27. Sharma S, Vijayaraghavan V, Tandon P, Kumar DR, Sharma H, Rao Y. Dental education: current scenario and future trends. *J Contemp Dent Pract*. 2012;**13**(1):107-10.
28. Nor NA, Yusof ZY, Shahidan MN. University of Malaya dental students' attitudes towards communication skills learning: implications for dental education. *J Dent Educ*. 2011;**75**(12):1611-9.