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Combining Two Performance-based Assessment Methods of Logbook and DOPS in Field Internship of BSc Anesthesiology Students

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Abstract

Background and Objective: One of the duties of education planners is following up dynamic programs with the goal of sustainable improvement and creation of optimal learning opportunity for learners. On the other hand, one of the most important challenges of clinical training is the tendency of teachers toward the use of traditional and difficult education and evaluation students to monitor their activities during the internship. This study aimed to combine two performance-based evaluation methods of logbook and DOPS (direct observing of the skill to perform clinical procedures) during the presentation and evaluation processes of field internship of BSc students of anesthesiology.

Materials and Methods: This study was initiated since summer of 2011 in the country for the first time using just the posttest process for assessment. The stages of needs assessment, design, implementation and evaluation of internship were carried out using the combined method with the cooperation of 17 BSc students of anesthesiology in the paramedical school of Kashan University of Medical Sciences. Data analysis was performed in SPSS version 16 using descriptive statistics.

Results: In this research, the level of impact of the combined method in various areas of learning, interaction with different treatment groups and total evaluation of education was reported to be 70.6, 76.5 and 100% (moderate to high), respectively. In addition, good and very good realization levels were recognized for general objectives of the course in all cases.

Conclusion: According to the results of the study, application of the combined method led to the successful guiding of activities of students and their interaction with other groups during the course. In other words, use of this technique can be beneficial for improving team performance in education, increasing the acquisition of clinical skills and deeper understanding of concepts.

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Introduction

In general, some of the duties of the involved departments in medical education include change of educational patterns, empowerment of perspective of learners and attraction of their cooperation in self-learning, along with the use of optimal methods to achieve educational goals. In addition, it is aimed to improve the effectiveness of medical training using novel methods (1). Presence in clinical settings is an ideal opportunity to observe the performing of duties and measures by a person and thinking about what has been observed, heard, sensed and carried out (2). In field internship, students practice a combination of all of their courses and prepare themselves for working in actual settings, where not only procedural skills but also higher abilities are demanded to manage patients. One of the weaknesses of education, which is emphasized as an important challenge, is a tendency toward the use of traditional, difficulties in education and evaluation methods and monitoring of students in field internship (3). Evaluation is not typically based on expected abilities of learners, and valid and reliable tools are not applied in most of the cases to evaluate practical skills of students. Moreover, there is a lack of proper education and evaluation techniques, which leads to the inefficient motivation of students toward learning.

Presenting new tools and methods in education field not only facilitates learning but also provides an opportunity for the personal planning of education, which will be reliable as valid assessment methods in specific conditions. Some of these tools include cartable and daily report notebook or logbook, application of which can increase the motivation of learners to perform self-assessment and improve their clinical skill acquisition. In this respect, logbook performs various roles in educational programs. In fact, manager and designer of an educational program determine the responsibilities of learners and professors in the logbook. In addition to determining the general goals and processes of the course, the logbook is used as a tool to record learning experiences and learning stages, and evaluate the quality of clinical learning by students (3). Despite the increase of cognitive and motor skills and even satisfaction of students due to the application of logbook (4), this tool does not provide the possibility of direct and immediate feedback after performing each instruction by the instructor. However,

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providing timely feedback for learners is recognized as an essential part of a clinical education process to improve learning and achieve standards (5). Actions based on feedback create appropriate habits to enhance performance and correct mistakes. Despite the importance of feedback, many students have reported lack of receiving proper feedbacks from instructors (6).

Constant cooperation and collaboration of students and professors are essential to create learning models, in which effective feedback is presented. In this respect, students are familiarized with education environment conditions by their professors, who determine the goal of learning experiences and final expectations (6).

One of the conventional methods for evaluation of procedural skills is direct observation of procedural skills (DOPS) (4, 7, 8). The DOPS test includes the observation of learners during a practical procedure performed on an actual patient. In this method, observations of professor were recorded based on task performance checklist, followed by providing feedbacks for students according to actual results (4). Generally, the list of necessary procedures is provided for students before the procedures, and students are obligated to ask the professor to observe their performance when they confirm their own competence in performing a clinical procedure during the course. By doing so, professors will evaluate their activity and provide the necessary feedback at the end of the procedure (9). This test is used as a sample of workplace-based evaluations to assess the performance of practical clinical skills. According to previous studies, the DOPS method has an acceptable reliability and validity. Therefore, it can be used as a compression tool in addition to developmental evaluation. Given the fact that providing feedback during the implementation of instruction is one of the important parts of this technique, which provides an acceptable approach to improve learning, it could play an important role in the clinical education of students (7, 8, 10).

This test plays an important role as an intermediary tool in providing direct feedback during the teaching of skills. Moreover, a combination of this method with daily report notebook and defining the minimum number of repeated procedures expected from anesthesiology BSc students in field internship is an appropriate learning technique. In other words, this technique provides constant feedbacks for implementing various and numerous daily procedures.

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Application of new evaluation methods based on workplace, such as the short form of clinical assessment (Mini CEX), DOPS and mini clinical evaluation exercise, leads to determining the weaknesses of students and the problems and gaps in internship, and creating a learning opportunity for students and professors to better comprehend learning needs during the developmental evaluation stage. However, one of the disadvantages of this method is an insufficient number of clinical skills that are listed for students (11). Given the fact that each learning tool and device for evaluation of learning has its own weaknesses and strengths and their smart integration can cover these weaknesses and highlight strengths, a combination of these techniques has been regarded in educational design of courses.

With regard to the importance of clinical learning in anesthesiology students and sensitivity of this field of study and occupation, attention to effective learning strategies and valid and reliable assessments is significantly crucial to master the important and complicated duties and procedures. With this background in mind, this study aimed to provide an innovative method by combining two performance-based assessment methods of DOPS and logbook to present and evaluate field internship of BSc students of anesthesiology.

Materials and Methods

This research was approved by the research deputy of Kashan University of Medical Sciences, after receiving the ethical approval from the university over a letter with the code of P29/5/1/1893 in order to implement field internship of BSc students of anesthesiology. Stages of the research are presented below in detail. Moreover, evaluations were carried out in the form of single-group posttest using a set of knowledge, attitude and skill tests.

Research Stages:

A) Needs Assessment: this process was initiated in August 2011 in order to evaluate:

- Abilities expected from BSc students of anesthesiology according to the approved curriculum and workplace
- Necessity of workplace-based assessment
- Different evaluation methods in proportion to capabilities in the workplace

In this stage, diversity was used in needs assessment resources. In this regard, three resources were applied, including search in

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electronic sources and library, opinion of experts (three faculty members of the department of anesthesiology and a medical education expert), managers of operating room, intensive care unit (ICU) and emergency ward, educational supervisor and opinion of learners. Electronic and library sources were searched in terms of the necessity and use of different types of models in novel workplace-based educations and evaluations, their weaknesses and strengths and ways to eliminate their weaknesses. This process was followed by a precise review of an educational program based on the curriculum of BSc of anesthesiology (approved by the higher council of cultural evolution) and evaluation of responsibilities of graduates. Moreover, diversity of the conventional procedures performed in each section was assessed to maximally use the available facilities. Furthermore, various relevant wards of subsidiary hospitals were visited and patient admission records of each ward were assessed, followed by the summarization of the results of needs assessment by an elite group.

B- Design of Logbook-DOPS Combined Method

The objective of this stage was the design of logbook and combining it with DOPS, which were selected in the previous stage as two assessment methods. In addition to providing the condition to receive feedback, the combined method can prepare the situation for review of the whole educational content (theory) presented in the three academic years. It should be explained that DOPS questionnaire contains nine items answered by an elite or trained individual, followed by the assessment of the performance of students in a procedure with previous preparation. Given the fact that these nine items are almost equal for all procedures, researchers of the present study used this property and placed the general questions of DOPS into the logbook, asking the instructors to consider the items and just put the final result in front of each procedure in the table. This moderation allows the registration of one item on the table of activities. The instructor (elite) observes the procedure and records his opinion based on a three-point Likert scale (good, moderate,requires practice and repeat). During two sessions, the design team members determined the variables, which must be considered in the logbook to evaluate students, and the implementation method, which is both presented below (the number of measurable variables is presented in the results section of the article):

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Current procedures in each ward, selection of procedures related to the duties of each field of study, determining the number of repetition of each procedure, different types of expected activities (which leads to the review of abilities acquired in the previous round of the field internship), the score share of each activity, the score of procedures, the number and ability of assessors, methods of informing all relevant individuals, educations required by students and instructors about the logbook combined with DOPS, the number of DOPS per each procedure, methods to record DOPS results in the logbook and its final confirmation, time and method of providing feedbacks for each learner, management of the "combined method" program and successful implementation of the design program of questionnaires, for which a 30-item multiple-choice test is designed and valuated for assessment of knowledge with a task performance checklist consisting of 20 statements for implementation of the practical test at the end of the course. In this combined method, the modified version of DOPS was designed with three options of "good", "moderate" and "requires practice and repeat", so that was it possible to place the method in the notebook after each procedure. Along with designing the activity record notebook, evaluation forms related to the logbook and DOPS and a questionnaire, which was used to assess the achievement of course goals and determine the evaluation time using a five-point scale (five=highest achievement, one=lowest achievement), were designed. The mentioned researcher-made questionnaire was validated by the group of elites (eight individuals).

C- Implementation and Evaluation of the Combined Assessment Method:

The designed items were implemented step-by-step. The logbook was designed as expressed and confirmed by the group of elites. In addition, the procedures of different wards were matched with the needs of learners and curriculum of each field of study. Following that, implementation of the processes, especially feedback recording for students, were assessed at a meeting attended by anesthesiology specialists, where the important notes were applied. The logbook combined with DOPS was published and sent to anesthesiology experts and specialists and managers of the relevant hospital wards. In addition, the prepared tool was taught to the instructors during a practical session. A hypothetical case was scored during this session and various opinions of instructors were obtained and discussed. In addition,

providing feedbacks by instructors was emphasized. Following that, the logbook was printed for all of the students and its purpose in the field internship was explained during a meeting, where students learned about the importance and method of use and maintenance of this tool. Moreover, it was marked that the procedures written in the logbook and the listed expected activities have been determined after evaluations and for achieving the maximum acceptable ability of students. Furthermore, the design process was explained to the students, implementation method of the modified version of DOPS was described and students were motivated to receive feedback from their instructor.

In order to confirm the reliability of the tool, a number of the confirmed and stamped procedures in the logbook of students (where the DOPS assessment occurs) would be randomly assessed by a rotational instructor and the observer each week, discussing the type of feedback student received during the implementation of the procedure. The observer signed the relevant sheet. Therefore, it was significantly important for students and even instructors to have the logbook handy and to master it. With regard to the mentioned issues, the method was confirmed by the elite group and its reliability was approved by the accurate implementation of steps of logbook and DOPS (4). In addition, student assessment forms (containing 19 items), general evaluation methods of the course and assessment of logbook and DOPS from the perspective of other beneficiaries, a multiple-choice knowledge test with 30 items and a task performance checklist of a practical test (20 items) were carried out after confirming their face and content validity by eight members (the elite team) and applying the relevant modifications.

Following that, introduction meetings were held for instructors, ward managers and students to teach the combined logbook and DOPS method. In addition, the standard DOPS form and its modification method were discussed and the implementation of the main stage, which was providing feedback, was repeatedly emphasized. After the design and implementation of the stages, the first field internship course was carried out in the form of a pilot in 2011 using this method on 17 students, who were BSc anesthesiology students in the seventh and eighth semesters. At the end of the internship course, the combined evaluation form of logbook and DOPS, which was provided for anesthesiology instructors and specialists and

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ward managers, was completed and received for analysis.

Moreover, the evaluation form of the course for achieving the general goals of the internship was completed by students. The effectiveness assessment form was designed during the internship, and student satisfaction level with the form was received using a five-point Likert scale (extremely high, high, moderate, low, no satisfaction). Mean score of students at the end of the field internship course (16 credits) was obtained using a multiple-choice (knowledge assessment) test and a final practical test (to evaluate the performance of students) as the result of knowledge and performance of learners. Data analysis was performed in SPSS version 16 using descriptive statistics.

Results

The combined logbook-DOPS method was designed, implemented and evaluated in this research. This form was created to evaluate the field internship of anesthesiology students in the form of a notebook for recording practical activities and the number of predicted DOPSs for each procedure and the total activities expected from students. The performance record checklist had the following sections: introduction, general objectives, specific goals of the course, the expected skill levels (cognitive, attitude, motor), visits and their goals, other duties of students, various evaluation forms (just to inform the students) and table of procedures for each operating room and relevant ward and item of the modified DOPS in front of each procedure. In total, 114 procedures were selected by the project design team (elite group) after the evaluation of all internship fields. As mentioned, procedures were based on the approved duties of the anesthesiology students and the curriculum of the course.

A. Assessment Results of Students, Managers, Anesthesiology Specialists, and Instructors:

In general, 17 students of the first round of BSc in anesthesiology reported the scores of the successful implementation of the combined method in various learning areas (cognitive, emotional, mental-motor), recognition and interaction with various treatment groups and general evaluation of the effectiveness of the method in line with the education course at 70.6%, 76.5% and 100% (moderate to high), respectively. Moreover, the combined method received the score of 7.06±2.06 (of 10), which was above moderate level in all evaluated cases by managers, anesthesiology specialists, and instructors (Table 1).

Table 1: Percentage of scores from implementation of Integrated Method (Logbook - DOPS) in anesthesiology students

	The effect of the implemented method in:	Very much%	Much%	Moderate%	Low %	Never %
1	A guide to the implementation of course goals	5.9	47.1	35.2	5.9	5.9
2	Level of learning in different areas (cognitive, emotional, psycho-motor)	0.0	35.3	35.3	29.4	0.0
3	Search for questions	0.0	41.2	35.3	23.5	0.0
4	Acquiring practical skills in every field	11.2	47.1	23.5	17.6	0.0
5	Interacting with personnel	11.8	35.3	35.3	5.9	11.8
6	Interacting with classmates	5.9	23.5	41.2	23.5	5.9
7	Attention to other treatment and care groups	11.8	23.5	41.2	17.6	5.9
8	Communicating with other care and treatment groups (physiotherapist, radiologist and other health care provider)	5.9	35.3	35.3	11.8	11.8
9	Interacting with assistants and students of other educational groups	5.9	0.0	64.7	23.5	5.9
10	Proper and accurate use of equipment	11.8	41.2	35.3	11.8	0.0
11	Familiarity with documentation and reporting systems in nursing	17.6	58.8	23.5	0.0	0.0
12	Motivating to search for activities in different areas of internship	11.8	52.9	17.6	11.8	5.9
13	Guidance for activities and learning	23.5	35.3	35.3	5.9	0.0
14	Proper use of time	5.9	47.1	17.6	23.5	5.9
15	The coach' familiarity with student duties during the course	11.8	35.3	29.4	17.6	5.9
16	Communicating with patients and their family	5.9	29.4	58.8	5.9	0.0
17	Creating an incentive to help patients	64.7	0.0	23.5	11.8	0.0
18	Desire to conduct expected visits during the course	5.9	41.2	41.2	5.9	0.0
19	The importance of carrying out activities and maintaining and completing the logbook	11.8	64.7	11.8	11.8	0.0

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B. Obtaining the General Goals of Internship:

Results of assessment of obtaining the general goals of internship (of 5) demonstrated that mean achievement score in the operating room (anesthesia), post-operation cares, intensive care, emergency unit, pain service, and predicted visits during the internship was 4.62±0.55, 4.33±0.51, 4.25±0.41, 3.78±0.58, 4.08±0.86 and 3.92±0.86, respectively. In this regard, all of the results were at the good and significantly good levels.

C. Evaluation of Knowledge and Performance of Learners:

At the end of the internship course, a multiple-choice test (theory) was carried out, which covered the basics of anesthesia, to evaluate the improvement in the knowledge of students. Moreover, the practical test in field (operating room) was performed with an observational checklist and assessment by an anesthesiology specialist. The obtained scores, which were received based on the duties determined for students during the internship, are presented in the table below:

Table 2: Scores of learners' knowledge and performance at the end of an apprenticeship

Process steps	Learner group	Knowledge score (writing test) (5 scores)	Integrated practical enhancement score (Total job score, DOPS, and final practice test) (15 scores)	Total score (Of 20)
Pilot stage 2011-2012	Students entering September 2008	3.89	13.95	17.87

D: Results Obtained from Logbook (Number of Procedures Performed under Direct Observation):

At the end of the course and after receiving the logbooks from students, the number of predicted and performed DOPSs was evaluated and matched with the facilities of internship wards, so that specific (supplementary) planning could be carried out for necessary cases. Some of the results related to the frequency of procedures (or DOPSs) are presented below:

In the anesthesia ward: in general, the number of performing care processes for patients undergoing neurosurgery (61 cases) was assessed, where from four expected DOPSs,

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mean repetition of DOPS was 3.8±0.54. For some other procedures, this report was: abdomen surgery (57 cases) with 3.5±1.03 of five expected DOPSs, laparoscopy (53 cases) with 3.53±0.91 of a total of four determined DOPSs and orthopedic surgeries with 3.81±0.75 of four expected DOPSs. In the emergency section: 94 activities were determined for each student in the form of 32 procedures in the table of activities. The most performed procedure was bloodletting via peripheral veins. In total, 290 cases were performed during the emergency course with mean of 18.1±3.9 procedures per individual, among whom five received direct feedback from instructor. In addition, a mean of 6.1±2.8 and 3.87±0.34 subjects had the chance to participate in cardiopulmonary resuscitation (CPR) andwound dressing. Mean of other activities, such as muscle and subcutaneous injection, bloodletting for test, control ofbloodsugar by glucometer and writing nursing report, was 50% above the expected cases (predicted in the tables of logbook).

Discussion

Each education and learning assessment tool has its own properties, weaknesses, and strengths, and their combination can cover their weaknesses and highlight their strengths. As expressed in the introduction section, as a performance-based assessment method, logbook does not emphasize feedback for learners despite even when it is possible to use its results in order to provide feedbacks. Meanwhile, one of the primary features of DOPS, which is an evaluation method used in the workplace, is providing feedback for learners. In the present study, results of combining two performance-based and workplace-based methods were assessed to evaluate the field internship of anesthesiology students. Some of the achievements of this program included receiving the opinions of students, instructors and authorities, satisfaction with the combined method of field internship and encouraging targeted actions by students and instructors during the course, which improved the time and accessible facilities for students and instructors. Our results were indicative of student satisfaction with the mentioned teaching method, which is in congruence with the results obtained by Kab et al., who conducted a research on veterinary students to compare multiple-choice and DOPS methods. According to the results of the mentioned study, students reported the positive impact of DOPS on learning efficiency (10).

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However, there was a lack of consistency between these findings and the results obtained by Bindal et al., who evaluated the beliefs and experiences expressed by students and their instructors about the DOPS assessment. In their anesthesiology internship program, results demonstrated the lack of planning for assessments and short duration of the evaluation process. Generally, the students and instructors believed that DOPS had no considerable impact on learning of students (13). This conflict in results might be due to the improper provision of feedback for students and inappropriate planning of the internship program in terms of scheduling. It should be noted that achieving persistent results for tools such as DOPS requires a clear description of evaluation criteria before each procedure for students, who must perform the procedures at least six times. Nevertheless, full comprehension of these criteria might be difficult for students (14). Moreover, feedback must be provided by an instructor in a safe space in order to have positive impacts on learners (15). Given the necessity of achieving the major and minor goals of internship and curriculum by students, it is recommended that attention be shifted to teaching students from assessment of their performance in workplace-based evaluations (15, 16). In the present research, there was a high range of access to educational goals in all areas.

In addition, the final grades of students in this course were indicative of their level of success in achieving the pre-determined educational goals of the program. In addition, analysis of tables in the internship logbooks demonstrated the proper provision of an opportunity for performing the desired procedures. Furthermore, review of logbooks can result in more efficient planning in the future by eliminating the current weaknesses of the program. In the present study, the combined educational method was applied as an internship quality control tool in the anesthesiology department. Application of this method, along with the cooperation of anesthesia assistants, external observers and trained instructors, led to the elimination of weakness caused by admission of a great number of students and problems in presenting internship caused by the presence of anesthesia assistants, who were significantly eager to individual perform the procedures, through creating cooperation and coordination between anesthesiology students and assistants.

In conclusion, this integrated method simultaneously benefits from the advantages of logbook and DOPS techniques in the

education stage and can be applied as a quality control tool. Combination of the mentioned techniques results in record and evaluation of a set of abilities expected from an anesthesiology graduate. In addition, an expert provides feedback through direct observation of the predicted process so that students could obtain the adequate skill required in their field. In addition, the issues observed during the process are recorded in daily notebooks and are assessed by learners themselves. The most important strengths of the implemented program, which was emphasized and modified in the continuation section of the program, is described, as follows:

Introduction session to explain about the use of the notebook by students and instructors, benefiting from the opinions of all stakeholders in design and implementation of accrual procedures based on needs, combination of two methods along with use of instant feedback by direct observation of skills along with logbook, emphasizing the description of future duties of anesthesiology graduates, benefiting from the cooperation of anesthesia assistants in teaching the students, creating a sense of empathy between the assistant and students, determining an external observer and constant assessment by the observer and instructors during the course. Research limitations included primary stress and concerns of students about lack of opportunities to repeat some expected procedures, high number of required tasks, repetition of some procedures in the DOPS tables, compared to processes present in the ward, need for more following up of reduced number of students due to lack of sufficient time for performing and repeating some activities during the internship (which was fortunately realized).

Conclusion

According to the results of the current research, the combined method was successfully used to guide the activities of students during the course and their interactions with other wards in the research. In addition, providing feedback by instructors according to the objectives of the course made the achieving of goals possible for students. Furthermore, the mentioned designed and implemented technique created an opportunity for executing a valid, accessible and acceptable evaluation in an actual workplace. One of the major responsibilities of universities is ensuring the adequate skill and independent professional performance of learners at the end of their education.

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Currently, effective teaching by providing feedback is one of the emphasized areas when designing educational curriculums. In addition, teaching capable students are one of the duties of schools of medicine, which is also emphasized in the comprehensive health plan of the country. Therefore, application of this technique can improve teamwork in teaching learners, increase clinical skills and deepen the learning of students and be efficient in fostering professional and powerful workforce.

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References

1- Farahmand S, Soleymani HA. How Interns' Logbook Is Completed in Emergency Ward of Imam Khomeini Hospital? *Iran J Med Educ*. 2010; 10(1): 55-62. [Persian]

2- Rezaei K, Kouhestani H, Baghcheghi N. Actual and Preferential Perception of Clinical Learning Environment among Nursing Students in Arak University of Medical Sciences, 2009. *Iran J Med Educ*. 2010; 11(5): 457-66. [Persian]

3- Lotfi M, Zamanzadeh V, Abdollahzadeh F, Davoodi A, Roshangar A. The Effect of Using Logbook on Nursing Students' Learning. *Iran J Med Educ*. 2010; 10(1): 64-9. [Persian]

4- Sahebalzamani M, Farahani H, Jahantigh M. Validity and reliability of direct observation of procedural skills in evaluating the clinical skills of nursing students of Zahedan nursing and midwifery school. *Zahedan J Res Med Sci (ZJRMS)*. 2012; 14(2): 76-81. [Persian]

5- Hewson M G, Little M L. Giving feedback in medical education. *J Gen Intern Med*. 1998:7; 111- 16.

6- Ramani S, Krackov SK. Twelve tips for giving feedback effectively in the clinical environment. *Med Teach*. 2012; 34(10):787-91.

7- Wilkinson J, Crossley J, Wragg A, Mills P, Cowan G, Wade W. Implementing workplace-based assessment across the medical specialties in the United Kingdom: Blackwell Publishing Ltd 2008. *Med Educ*. 2008; 42: 364–73.

8- Bindal N, Goodyear H, Bindal T, Wall D. DOPS assessment: A study to evaluate the experience and opinions of trainees and assessors. *Med Teach*. 2013; 35:e1230–1234.

9- Majid Akbari1, Reza Mahavelati Shamsabadi. Direct Observation of Procedural Skills (DOPS) in Restorative Dentistry: Advantages and Disadvantages in Student's Point of View. *Iran J Med Educ*. 2013: 13(3) 212- 220. http://ijme.mui.ac.ir.

10- Cobb K, Brown G, Jaarsma D, Hammond R. The educational impact of assessment: A comparison of DOPS and MCQs; *Med Teach*. 2013; 35: e1598–1607.

11- Saedon H, Saedon M H M, Aggarwal S P.Workplace-based assessment as an educational tool: Guide supplement 31.3 –Viewpoint. *Med* Teach. 2010; 32: e369–372.

12-Comprehensive I.R.Iran's health sector's science map. Ministry of Health & Medical Education Web site. http://behdasht.gov.ir/index.aspx?siteid=1&siteid =1&pageid=130&newsview=10724. Accessed December 10, 2011.

13- Bindal N, Goodyear H, Bindal T, Wall D. DOPS assessment: A study to evaluate the experience and opinions of trainees and assessorsy. *Med Teach*. 2013; 35: e1230–1234.

14- Delfino AE, Chandratilake M, Altermatt FR, Echevarria G. Validation and piloting of direct observation of practical skills tool to assess intubation in the Chilean context. *Med Teach*. 2013; 35(3):231-6.

15- Driessen E, Scheele F. What is wrong with assessment in postgraduate training? Lessons from clinical practice and educational research, *Med Teach*. 2013: 35:7, 569-574.

16- Al-Kadri HM, Al-Kadi MT, Van Der Vleuten CP. Workplace-based assessment and students' approaches to learning: a qualitative inquiry. *Med Teach*. 2013: 35:sup1, S31-S38.

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