



Oral Presentation Versus Role Playing in Medical Education: A Quasi-Experimental Study

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Abstract

Background: It is claimed that role-playing is a teaching strategy that has several advantages for both the teacher and student. This study aimed to compare two educational methods (oral presentation, a traditional method that is known to be teacher-centered, versus role-playing which is a student-centered method).

Methods: This quasi-experimental study was performed between September 2013 and October 2014 in 95 medical students in Mashhad University of Medical Sciences. Role-playing and oral (plus Microsoft PowerPoint) presentation were done by one assistant professor. There were no changes in the educational content nor the classroom. Using random numbers, half of each group received one of the methods as the first class and vice versa. At the end of each session, the standard satisfaction evaluating questionnaire was filled by the students.

Results: During the one-year duration of this study, 95 students were evaluated, and 46 (60%) of them were female. The mean age was 22.5 ± 1 years, and 28 (87.5%) were single. Role-playing had a mean rank of 54.64, and oral presentation had 21.45 ($P < 0.001$). This difference was present based on gender as well ($P < 0.001$). The satisfaction score was significantly higher for role-playing ($P < 0.001$).

Conclusions: Role-playing can be much more helpful in education and needs to be incorporated into the lesson plans.

Keywords: Role-Playing, Education, Medicine, Non-Randomized Controlled Trials, Student, Oral Presentation

1. Background

High-quality medical practice requires communication skills. Learning these skills is mainly based on observing the professional behavior of the teachers. Unfortunately, there is no specific emphasis on these skills in the current curriculum. Some concerned teachers have turned to special teaching methods to cover this gap (1-3).

Some studies have shown that the traditional education methods like an oral presentation or a modern version of it, i.e., Microsoft PowerPoint presentation, are mostly teacher-centered, inactive, and have the least efficacy in terms of learning. On the other hand, newer student-centered methods like role-playing promote active learning and have higher efficacy (4). Besides, most experts suggest that training in controlled conditions can promote the acquisition and performance of the necessary skills. The more realistic the training environment, the higher will be the efficacy (5).

Role-playing, a powerful teaching technique in face-to-face education, is a teaching strategy that fits within the so-

cial family of models. This method may refer to role training, where people rehearse situations in preparation for a future performance or, sometimes, to improve their communication abilities (6). This strategy emphasizes the social nature of learning and promotes cooperative behavior by stimulating the students both socially and intellectually (7).

In role-playing, the participants feel themselves to be in a real situation and act as necessary. Use of this technique can improve the patient-oriented interviews. Some studies have shown the various advantages for this method including increasing motivation, more active participation of the students, reducing shyness, acquiring new attitudes and accepting the social norms, reinforcement of management and organization skills, and preparing the overall condition for discussion. However, this method has its limitations as it may not be considered as a serious educational method, and adequate time and various equipment are required (1).

A presentation software mostly accompanies an oral

presentation. Microsoft PowerPoint is the most commonly used software. Studies have shown contradictory findings regarding the efficacy of using this tool. The core advantages of using Microsoft PowerPoint alongside the oral presentation are the capability to use various fonts, colors, pictures, and even video clips. However, reduction of the interaction between the presenter and audience and prevention from starting a discussion are some of its limitations (8). To the best of our knowledge, these two methods have not been previously compared. Considering all these issues, this study aimed to compare role-playing and oral (plus Microsoft PowerPoint) presentation as teaching methods.

2. Methods

This quasi-experimental study was performed between September 2013 and October 2014. All 5th-grade medical students who attended a specific class were included in this study. There were no exclusion criteria. This class was conducted for the first time by the community medicine department of Mashhad University of Medical Sciences, Mashhad, Iran. Based on a regular schedule, a group of these students was introduced to this department each month to complete this course.

Two similar educational contents (taking a good medical history from an elderly patient) were presented using the two different methods: (a) Role-playing and (b) oral plus Microsoft PowerPoint presentation. Using randomization, half of each group received method A as the first class and vice versa. There was a one week gap between these two methods for each group.

In this study, we used the following steps for the role-playing protocol: (1) Preparation and explanation of the activity by the teacher (warming up); (2) selection of the participants and assigning the roles; (3) gathering the required equipment; (4) preparing the students for watching the role-play; (5) role-playing; (6) discussion or debriefing after the role-play activity; (7) role-playing again; (8) discussion or debriefing after the second role-play activity; and (9) generalizing the experiments. These steps were adapted for the educational content.

In the oral plus Microsoft PowerPoint presentation, we used the relevant Persian slides along with additional explanations wherever needed. At the end of the session, the questions of the students were answered.

At the end of each session, all the students filled a satisfaction questionnaire. It had 18 questions in Likert Scale (from 1-completely disagree to 5-completely agree), covering four main domains. These domains included workload, improving communication skills, methods of training, and quality of training. Although this questionnaire

had been validated previously (7), its reliability was confirmed again by the medical education and community medicine experts. The validity of the questionnaire was approved based on a Cronbach's alpha of 0.89.

All classes were held by one assistant professor for both of the methods, and there were no changes in the educational content nor the classroom. The difficulty of the educational content and topics for these two classes were approximately similar (the same topic but from two references which were approved by expert opinion). Each group finally participated in both of the classes. Each class, irrespective of the method used, was 100 minutes long.

Statistical analysis was performed using SPSS 11.5. Mann-Whitney U, Wilcoxon Signed Rank, and Chi-Square tests were used with a significance level of 0.05.

3. Results

During the one-year duration of this study, 95 students were evaluated of which 46 (60%) were female. The mean age of the participants was 22.5 ± 1 years (range, 21 - 26 years), and 28 (87.5%) were single.

The mean rank score of satisfaction for role-playing was 54.64, and for oral plus Microsoft PowerPoint presentation was 21.45 ($P < 0.001$). The difference between these two methods was also present with regard to gender ($P < 0.001$).

In the age group of 21 - 23 years, the role-playing method had a significantly higher satisfaction score compared with oral presentation ($P < 0.001$). However, no significant difference was observed in the 24 - 26 years age group (Table 1).

The satisfaction score based on the four different domains is illustrated in Figure 1. In all dimensions (1, workload; 2, improving communication skills; 3, method of training; 4, quality of training), the role-playing method had significantly higher scores ($P < 0.001$). This difference was also seen between the genders ($P < 0.001$).

Table 1. Comparison of the Mean Rank Score of Satisfaction in the Two Groups Based on Gender and Age

	Oral Plus Microsoft PowerPoint Presentation	Role-Play	P Value
Gender			
Male	9.21	17.41	0.001
Female	5.17	26.25	< 0.001
Age group, y			
21 - 23	15.21	40.23	< 0.001
24 - 26	2.00	5.50	0.17

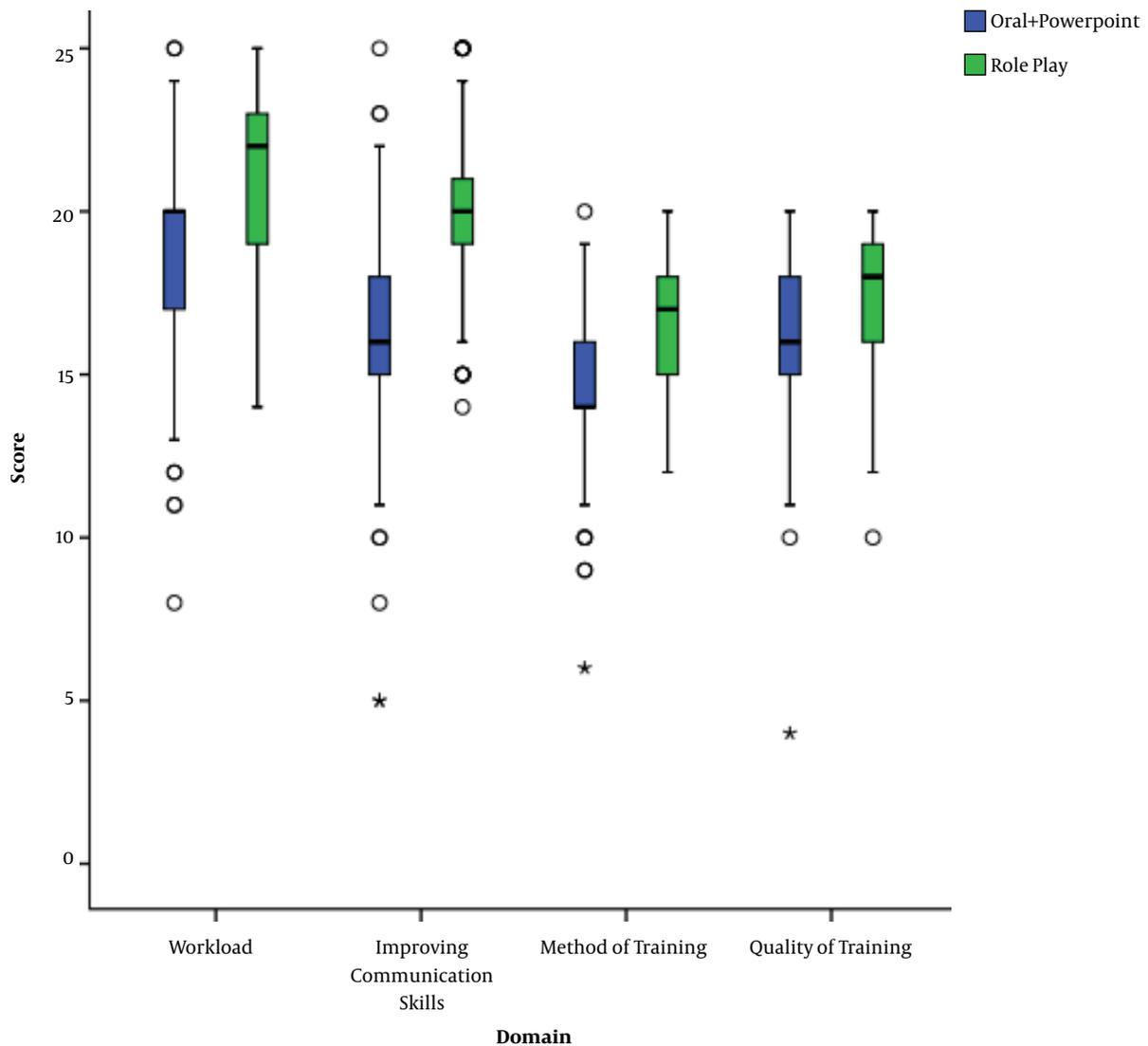


Figure 1. Score of the two groups based on four different domains

4. Discussion

This study showed that the role-playing method had significantly higher scores than the traditional oral plus Microsoft PowerPoint presentation in all four dimensions of satisfaction. This difference was also observed with regard to gender. The significant superiority of role-playing in the 21 - 23 years age group and the absence of this relation in the 24 - 26 years age group could be due to the lower number of participants in the latter age group.

Managheb et al. compared role-play and group discussion in the practice of medical interns of breaking bad news. They concluded that both methods could improve

the skills of the interns, but role-playing was associated with a greater increase in the post-intervention score (1). Also, it has been shown that observation and discussion of the behavior of other persons are the first preferences of role-playing (9). Moreover, innovative ideas and acquiring a wide view of the educational issues are the other benefits of this method (10, 11).

Sutcliffe (12) and Steinman and Blastos (13) have shown the superiority of role-playing over oral presentation in two separate studies. It has been claimed that role-playing can cause the actual manifestation of the student's technical skills (11).

Similar to the present study, a considerable number of

researchers insist that interactional education under complete observation for practicing new skills can reduce the practical and theoretical gap (14-16). It seems that role-playing actuates the participants to think about the role and is the beginning of a thorough understanding of the educational content (16).

In a recent study, half of the medical students claimed that Microsoft PowerPoint-based classes suppress the activity of the students, and approximately 70% desire to have more discussion in these sessions (17). However, it has been shown that using animations and engaging students more efficiently can address this problem (18). This controversy that some students like PowerPoint presentations and some do not seem to be related to the teacher's responsibility to try to break the sense of the rigid preset of these sessions (19, 20). A qualitative study showed that regardless of the nature of technology of the educational methods, the way the teacher uses them determines the final efficacy (6).

One of the limitations of this study was the lack of the ability to control the class (sometimes the students did unplanned works) in the role-playing method. Also, there is a lack of similar studies for comparison with the current study. However, due to the low cost of and high interest among the students in the role-playing method, it is highly suggested that, even as a pilot study, other medical universities also try this method. To the best of our knowledge, this was the first study which compared these two methods in an academic environment.

Regardless of the benefits and disadvantages, it seems that role-playing can be a highly effective method of education that needs to be incorporated into the lesson plans. Although performing similar research in other universities may help to confirm the robustness of these findings, we believe that selecting the proper method is mainly dependent on the viewpoint of the teacher. This enables the teachers' to control the class, the educational content, the physical environment, and so on. There is no one rule for all.

Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal website and open PDF/HTML].

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