

# Role Playing Is a Useful Method for Teaching Physical Examinations

Ebrahim Aliafsari Mamaghani (✉ [ealiafsari@gmail.com](mailto:ealiafsari@gmail.com))

Maragheh University of Medical Sciences

sharareh ahmadzadeh

Maragheh University of Medical Sciences

---

## Research Article

**Keywords:** Role playing, Physical examination, Students, Nursing, Scholarship

**Posted Date:** June 17th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-582816/v1>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Introduction:** The role playing, if well organized and planned, can be a good way to teach practical lessons and acquire communication skills for nursing students. The purpose of this study was to investigate the effect of role playing education in the course of assessing the health status of nursing students.

**Methods:** This study was conducted as a scholarship research in the period of 4 semesters from 2018-2021. It is noteworthy that about 25 nursing students were studying in each semester. In this way, the instructor performed the process of taking the patient's history or examination on a student playing as the patient. The students then repeated the same test on each other in pairs. Satisfaction and confidence forms were filled out by students after the course. Retesting and obtaining feedback from instructors and clinical nurses were used to assess the durability of the materials and their application.

**Findings:** Students' satisfaction with this teaching method was higher than satisfaction level in students not experiencing this method who had passed this course in the usual way, and an increase was observed as  $2.8 \pm 0.7$  in the students' average scores. Students' confidence and ability to perform physical examinations at the clinic improved based on feedback received from ward nurses and instructors in later semesters. In addition, comprehension of adult and senior courses in later semesters was easier for students trained in this way.

**Discussion:** Studies show the effect of role playing teaching method in improving learning motivation and problem solving skills and communication skills in students. The consistency between the results of the present study with the results of other studies leads us to recommend the use of this educational method in other medical sciences courses, which require practical skills and self-confidence of students in bed. Medical education officials and practitioners can take valuable steps in this direction by recommending and emphasizing the use of this method in improving the teaching and learning of such courses.

## Introduction

Role play is a common method for adult education [1] but is not widely used in science education, while in culture and social policy education, it is used as a way to help students to see and perceive the perspective of other people [2].

Role play is derived from a moral and critical play that may be useful in helping students understand some aspects of literature, social studies, as well as some aspects of science and mathematics. However, it can help students to be interested and involved not only in learning materials but also in combining knowledge and practice with engaging with problems, explaining alternatives and searching for new cases and creative solutions [3, 4]. Role play is a good way to improve innovative skills, communication, problem solving, self-awareness and teamwork that does not lead to the mere learning of some facts that may be unused and unrelated; rather, it prepares young people to face the new challenges ahead. In

science education, role play can be considered as an interaction between play and simulation in which the student performs an activity with learning outcomes [4]. Using this method allows teachers to encourage students to become aware and also physically engage them in the content of the course and makes learning difficult concepts easier for students [5].

Learning science through role play encourages students to make a reality of themselves, improves their ability to cope with other people, increases student motivation, engages shy students in classroom activities, improves self-confidence, helps identify and fix inappropriately learned materials. This method is attractive and popular and confronts students with the real and complex world and shows the problems that cannot be solved by merely memorization and forces them to simulate difficult skills based on need [6]. Students understand the extent of their learning by playing a role and it helps them learn the ethics in the curriculum and to understand their position in the current situation and gives them the opportunity to of experiencing the real life in a physical way and it also helps in conceptualization for students [4, 6].

In role-playing, with the least facilities and equipment, the seller can be trained to deal with the customer, the doctor to interview the patient, the instructor to face difficult situations and provide all the necessary criteria for practical training and feedback [7]. This method helps students learn the skills needed for future care [8] and is a more appropriate way compared to lecturing for teaching communication skills to health professionals [9]. Physical examination and health assessment in the nursing curriculum also requires communication skills for taking the patient's history as well as patient examination skills so that students can take good care of their patients in the future.

Status assessment is one of the main components in holistic care and is the basis of the nursing process so that all nursing activities are based on assessment and recognition of patient [10]. The health status assessment course has been included in the curriculum in order to acquaint nursing students with the process of examining and recognizing patients' problems, and the results of students' evaluation of instructors and their low satisfaction [11, 12] as well as low average scores in this course made us more determined in making decisions to improve the teaching process of this course.

Weakness of nursing students in the health assessment course in the Madani and Bahraminejad study has been shown that this weakness was also present in other universities in the country and final year students had low skills and ability in health assessment and physical examination, which program. Thus, essential planning seems to be necessary to solve this problem. Given the history of such a problem in teaching and learning of nursing students in previous courses, this weakness is also evident in nurses and the need for retraining for the health status assessment is emphasized by nurses and faculty members [11]. Specialized surveys show that nurses also had a major problem in assessing the cardiovascular status of patients [12], which confirms the importance of improving the quality of education of the health status assessment course to nursing students. On the other hand, due to the importance of the role of nurses in assessing health status, we need to plan and adjust training and

performance strategies in nursing content [13] so that we can take more steps to improve community health.

Ebadi in his study has concluded that providing a theoretical learning is not useful in this course and students emphasize practical presentation of the course. The practical weakness of the instructor in explaining the examination to the students and the lack of facilities were the factors affecting the inappropriate education in this study. Due to the fact that this course consists of half theoretical units and half practical units, and due to the large number of topics, instructors spend most of their time on expressing theoretical topics [14], which is a problem in terms of medical education ethics. Therefore, we decided to use the role model method to teach this course to assess the impact of this educational method on students' learning.

## Methodology

This study was a scholarship study with ethical cod IR.MARAGHEHPHC.REC.1399.014 from Maragheh University of medical sciences. In the first stage, after implementing the teaching method of role model, students' satisfaction was evaluated using a self-made tool, and a semester later, they were re-examined to check the durability of the material. For this purpose, students who had passed the health examination in the previous semesters with the usual course method were also re-examined. Using interviews with faculty and clinical nurses, possible changes in students in higher semesters in terms of content retention, ability and self-confidence of students in physical examination and taking patient history were examined and their opinions were summarized and analyzed by thematic analysis.

### Role model method

According to the role-playing method of Cherif, Verma and Somervill (1998), role-playing activities are divided into four stages [15]. In the first stage includes the preparation and description of the course activities by the instructor. In this stage, in order to prepare the group, by a clear description of the problem or using examples and asking questions, students were stimulated to think, and educational videos were used or what happened in the hospital was expressed on a case-by-case basis to denote the importance of the issue and motivate students.

In the second stage, which is to prepare students for the activity, the instructor introduced the students to the characteristics of the examiner and who it is? How does it feel? What will he do? Who helps him and.... Then he asked the students to volunteer to play a role in which the instructor played the role of examiner. With the help of the intern and the student, the private environment was prepared for the examination and the equipment and facilities needed for the examination were made available to the instructor and the students. Observers were then actively engaged to observe the examination performed by the instructor as a nurse on one of the students playing the role of patient so that they could analyze it. The instructor assigned tasks to the observers; e.g., Determining certain introductions to evaluate the implemented roles, their closeness to the existing realities, interpreting the effectiveness, the consequences of the behavior of the role players, etc. Of course, it should be noted that the instructor

conducted the examination in the middle of the practice room in a way that is visible to all students and asks them to express their ambiguities and criticisms.

In the third stage, the actors (students) play the role of the nurse and the next person (classmate) plays the role of the patient and the instructor guides them. However, it was not expected that every actor would perform a smooth, problem-free performance. The performance continues until the goal is achieved and the students perform the desired examination or interview.

In the fourth stage, summary and discussion took place after the role-playing activities.

At this important stage, students were asked to present their assessment according to the designed criteria and measures, while also asking the questions that arose in their minds. The instructor also asks for critical comments and suggestions by raising questions such as the following:

1. What do you think about the behavioral pattern of the role players?
2. What suggestions do you have for optimizing behaviors?
3. What are the characteristics of optimal performance from your point of view? And...

In this plan, criticisms and questions are expressed in two stages. The first time after the examination by the instructor and the second time after the students practice on each other. At this stage, cases that were ambiguous or their examination was difficult for most students were re-explained, and cases that were difficult or required more skills from students were repeated. Like using an ophthalmoscope to see the bottom of the eye.

The instructor then discusses and evaluates the role play again and questions such as the following questions were asked by the instructor:

1. What percentage of criticisms and suggestions were applied?
2. Can new reality-based solutions be achieved by new achievements and abilities?
3. Identify repeated mistakes? And...

So that learners are able to relate the roles played in problematic situations and real problems, and to get closer to the principles of theory that they can apply in real life.

Generalization requires a lot of experience and will not happen immediately. In any case, the instructor should try to direct the discussions in such a way that the role players, after gaining long experience, can generalize the different approaches to the problematic situation and its consequences. Feedback received in the following semesters from clinical educators, instructors of adult and senior courses, as well as ward nurses are used to assess student learning and generalize the use of these abilities and skills acquired in the real clinical environment over the years by these students (Fig. 1).

In the conventional method, the topics are presented theoretically, then the film or in some cases, the examination on a replica is used, and the students also watch this examination. In this method, students

usually do not enter the examination and are only observers.

### Setting and method of implementation and sampling

This study was performed in the practice unit of Maragheh School of Medical Sciences. Maragheh School of Medical Sciences is located in northwestern Iran and accepts about 25 nursing students each semester. We conducted this study for four semesters and compared the results with previous years that were taught routinely (2018–2021). Out of about 100 students, 86 students participated in this study at the time of the research and in the re-examination stages, they filled out a questionnaire and attended 85% of the classes (inclusion criteria). Of these, 6 questionnaires were omitted due to incompleteness. Each part of the course was done in the practice hall with the method of role model and examination or taking practical biography of the student as a hypothetical client, and meanwhile, those cases that needed further or supplementary explanation for students were provided. Students usually filmed this stage of teaching or recorded the teacher's voice for practicing after class. During the presentation of the course, constantly feedback was taken from students and the existing shortcomings were corrected by using the provided solutions or by creative methods. Using the practical operating room and tripling some groups to make up for the lack of space, using male students to examine the chest in the girls' group, and dividing the students into two separate classes until there was enough partition to practice were examples of these corrections.

To evaluate the effectiveness of the teaching method and the persistence of the topics, through the interview method, the experiences of the faculty who taught adult and senior courses in the higher semesters were used. The experiences of clinical nurses and nurses who worked as student instructors in three teaching hospitals where students did their internships were also used. In this way, we evaluated these instructors and nurses about students' cognition and practical skills in performing physical examinations and the level of self-confidence of students who passed the health status assessment course using role model method. Some of the nurses unfortunately did not pay attention to the students' behavior and actions due to their busy schedule in the clinic, but the nurses that the students worked with and the nurses who worked as student instructors had valuable experiences in this regard. Initially, interviews were conducted with 2 faculty members and 2 nursing instructors. It was then continued by purposive sampling until saturation and until new data were not obtained in three consecutive interviews [16]. The characteristics of the participants in the quality section are given in Table 1. I have to say that informed consent was obtained from all subjects and all participants (students, faculty members, nursing instructors, and nurses) entered the study with satisfaction.

Table 1  
Demographic characteristics of the participants in the qualitative part of the study

<b>participants</b>	<b>Gender</b>	<b>Age</b>	<b>Work experience</b>
8 faculties	3 females	3.2 ± 34	1 ± 4
7 nursing instructors	6 females	2.9 ± 31	2.3 ± 6.8
11 nurses	8 females	3.2 ± 33	3.4 ± 7.2

### Tools used

Using the prepared tools, the level of satisfaction with this teaching method is measured so that they do not have any problems in terms of confidentiality and expression of their feelings. Also, in addition to the questionnaire, feedback on correction suggestions and students' comments and criticisms were received. A self-made questionnaire with 18 items was used to assess students' satisfaction with the teaching method, which was completed by students in either the conventional method or the role-playing method based on how the students passed this unit. The validity of the questionnaire was examined by ten nursing professors and their opinions were applied. The reliability of the instrument was evaluated by 20 students by retest method and was confirmed with a correlation coefficient of 85%. In this study, the self-confidence was evaluated using Eysenck Self-esteem Inventory (ESI) 1997, which includes 30 questions with validity and reliability in Iran [17] and in the present study, its Cronbach's alpha was 0.92. Regarding the retention of material in the minds of students, the level of knowledge and practical skills of students were examined, which was done using ten questions and performing practical skills of students who were randomly selected. In most cases, these questions were selected from the questions used in the students' final exam.

### Data analysis

In the quantitative section, the data obtained from the questionnaire were analyzed using SPSS. Descriptive statistics and student t-test were used to assess the significance of the mean satisfaction in the two groups of students who were trained in the conventional method and role model method. In the qualitative part of the study, the experiences of faculty instructors and clinical instructors of nurses and clinical nurses were used to assess the durability of the topics and the ability to respond to relevant topics, students' ability and confidence in entering and performing physical examinations. Their experiences were collected and extracted for improving training. Data were analyzed line by line with Braun and Clarke thematic analysis method with the following steps: familiarity with the data, creating basic codes and searching themes, reviewing themes, defining and naming themes, and creating and reporting results [18].

## Findings

In this study, 58 students who had been taught by the conventional method and 80 students who had passed the course of health assessment by the role-playing method were examined. Most of them were women (Table 2).

Table 2  
Demographic characteristics

		Role playing method	Conventional method
Female	Gender	50	34
Male		30	26
Single	Marital status	72	60
Married		0	8
Local	Residential place	14	12
Dormitory		66	42
Rental house		0	4
Total		80	60

The mean scores obtained in the conventional method and role play method showed a significant difference. Levin test to check the normality of the data was 0.065, which indicates the normality of the data. There was a significant difference in the self-confidence of students who were taught with two different methods, so that the self-confidence was higher in students who were taught with the role model method (Table 3).

Table 3  
Comparison of conventional method and role playing method

	Conventional method	Role playing method	Sig. level
SD ± The average score obtained in the satisfaction tool	14 ± 54	10 ± 65	0.000
SD ± the average of ESI tool	5 ± 45	5 ± 49	0.000

In terms of retention in the students' minds, the students' scores were on average  $2.8 \pm 0.3$  points higher than the students who were taught in the usual way, but because this exam was done one semester after passing the course, we could only test two groups that were taught in the usual way.

The results of the thematic analysis of the experiences of the faculty instructors, nurses and nurse educators lead us to three main themes: daring to work with the patient, knowing and answering, quickly

getting skilled.

#### Dare to work with the patient

Students often do not have the courage to work with the patient, especially in the lower semesters, because they may not be able to take proper care of the patient or injure themselves. Clinical nurses, especially nurses who work with students as instructors, stated that students who passed the health assessment course with this method had more courage and skills to accept patients.

"Some students accepted the patient in such a way that I thought they had several years of experience."

Improvements in physical examinations and interviews during admissions and clinical history were also experienced by participants, who stated that students performed physical examinations in practical courses with more confidence than previous students. Most of the participants acknowledged the improvement of students' self-confidence in communicating with patients, and considering that students, especially in the lower semesters, have little ability to communicate with patients, students' progress in this skill is remarkable and a good achievement.

"Students feel they can and move forward with courage. Today I asked Ms. ... to examine the patient's bladder to see if she has postoperative urinary retention or not. Really I liked her self-confidence, communication with the patient, and her correct examination."

#### Knowing and answering

Faculty and nursing instructors stated that students were more likely to answer questions related to patient examination or clinical history taking in adult and senior courses easily, and that more students were eager to answer questions on these topics. Some instructors, unaware of the change in teaching method, attributed the change to the chance or students' different attitudes that led to their activation in this regard.

"Students of these new courses give a much better response, especially about how to diagnose the clinical symptoms of the disease. I thought it happens by chance and students in these two semesters are more active and interested in examining patients."

However, some instructors stated that some students did not pay attention to the topics at all, and there are such students in every class, and it may not be relevant to the teaching method.

The nurse clinical instructors noted the relative and poor improvement of students in answering the questions posed in the clinic and stated that there was no significant difference in students' cognitive knowledge. However, due to the fact that the issues that have arisen may not be in line with the history and clinical examination, the existence of such a thing will be possible.

The experiences of the instructors of adult and senior course that were in contact with students in the following semesters are taken regarding the students' ability to assess patient's health and physical

examination in the early chapters of the relevant course, which may indicate that the students have been able to keep the content in mind. This statement of satisfaction by instructors, though not apply to some students, but in general suggests the increased satisfaction of instructors with the students who had been taught in this way.

"It is true that some students are like our previous students, but in general I perceive your method as a good experience. Most of our students show progress, especially regarding disease etiology, and comprehend the materials quickly."

### Quickly getting skilled

Clinical nurses and nursing instructors agreed that students should work independently, especially in the later semesters of the implementation of this new method. Most of them admitted that students were very comfortable and fast in communicating with the patient, taking initial clinical history from patients, while in previous periods, students' low communication skills made it impossible for them to even get close to the patient. However, in the higher semesters and in the sections that had little to do with the skills learned by the students in the course, there was not much difference in their functional skills, indicating that this method did not have the effect on improving other students' functional skills. But in all areas, general skills such as communication and physical examination showed its impact, and learning the processes quickly and gaining the ability to work independently in the first days were among the common experiences of the participants.

"As I see they are with a patient and see that they are working properly, it is enough and they can manage the other cases on their own. Until two semesters ago, they had problems for the first three or four days."

## Discussion

Role play is widely used to teach skills [19] and targets learning in the cognitive, psychological, motor and emotional domains [20]. In our study, students were satisfied with this method and found it useful in improving practical skills and self-confidence. In a study of role-playing in France, students rated the method well and found it effective in achieving study variables, especially motivation, creativity, and collaboration [21], which is consistent with the present study. Of course, the effect of role-playing in triage training was also more effective than the lecture method [22]. This method was also used in cardiopulmonary resuscitation training to improve the performance of nursing students [19]. The role model in communication education in nursing students based on SBAR standard caused significant progress in learning and cognitive improvement of students [23, 24]. However, the use of this method has been effective in improving the understanding and learning of neurological abnormalities and various parts of the brain [25]. In our study, faculty instructors emphasized that students' cognitive knowledge was effective in the areas taught and students' ability and courage to respond was increased.

The benefits of using the role model are not limited to these cases and due to the dynamics of this method, it makes learners more familiar with the supportive environment [26] and the development of

discussion and decision-making skills among learners [1]. The use of role play increases students' understanding of course materials and can be used as a simulation in patient care [27]. By increasing students' active participation in this method [28], they learn the skills needed to perform care in the future [8] and they are prepared to work as clinical nurses in the future [29]. In our study, students were more likely to enter the patient work environment comfortably and were more prepared to care for patients.

Using this method improves learning motivation and problem-solving skills[30], improves their confidence and ability in relation to therapeutic communication skills, interpersonal interactions, empathy, active listening, teamwork, delegation and professionalism [31], which was effective in the areas of improving self-confidence and the ability to answer problems in theoretical and practical courses and was emphasized by faculty and nursing instructors. The effect of this method on students' ability in therapeutic communication skills, and interpersonal interactions are in line with the findings of the present study, and it is especially evident in taking clinical history and admission of patients and starting therapeutic communication with patients. Our study showed that the implementation of this method makes students more prepared to delegate authority and we can faster entrust them with the task of providing independent care to patients. In addition, the implementation of this method caused students to remember materials in their mind for a longer time and use the methods learned in practice, which was in line with the findings of previous studies.

## **Conclusion**

According to the results of the study, the use of this method is recommended for teaching practical courses and units that require practical action by students. This method can be used to teach communication skills and history. Other studies have suggested the use of role model method in teaching communication skills in nursing schools as well as in continuing education of hospitals and other care centers [23] and suggest its inclusion in the nursing education course [31]. However, some studies have suggested the use of this method for hiring, training and supervising the workforce of peers in psychiatric wards [32]. If the role play is planned and structured, it can improve active learning and be effective in providing curriculum in clinical medical courses [33], which can be implicitly suggested from the results of the present study.

## **Research limitations**

Because we did not have a control group to be trained with the conventional teaching method at the same time, in order to solve this issue, the students who were trained before by the conventional method were used and tested. Although we could only use the students of two previous semesters in this research, in order to get feedback and experiences of teachers and nurses, earlier students were also considered and the experiences of teachers and nurses were also asked about previous students.

## **Abbreviations**

Not applicable

## Declarations

### Ethics approval and consent to participate

This study was a scholarship study with ethical cod IR.MARAGHEHPHC.REC.1399.014 from Maragheh University of Medical Sciences. Written informed consent was obtained from all subjects. The study was carried out in accordance with relevant guidelines of the Declaration of Helsinki and regulations in Ethics approval, accordance and consent to participate.

### Consent for publication

There is consent for publication by both the author and the research center.

### Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

### Competing interests

There is no conflict of interest.

### Funding

The study was funded by Maragheh University of Medical Sciences.

### Authors' contributions

Both authors contribute in conception of the work. A.E designed the work. A.E and S.A collected the data, analysis, and interpretation of data. A.E wrote the main manuscript text and prepared figure 1. A.E and S.A prepared tab 1-3 .All authors reviewed the manuscript.

### Acknowledgements

This work was supported by the Research deputy of Maragheh University of Medical Sciences. The authors would like to appreciate all the nursing students participating in the study.

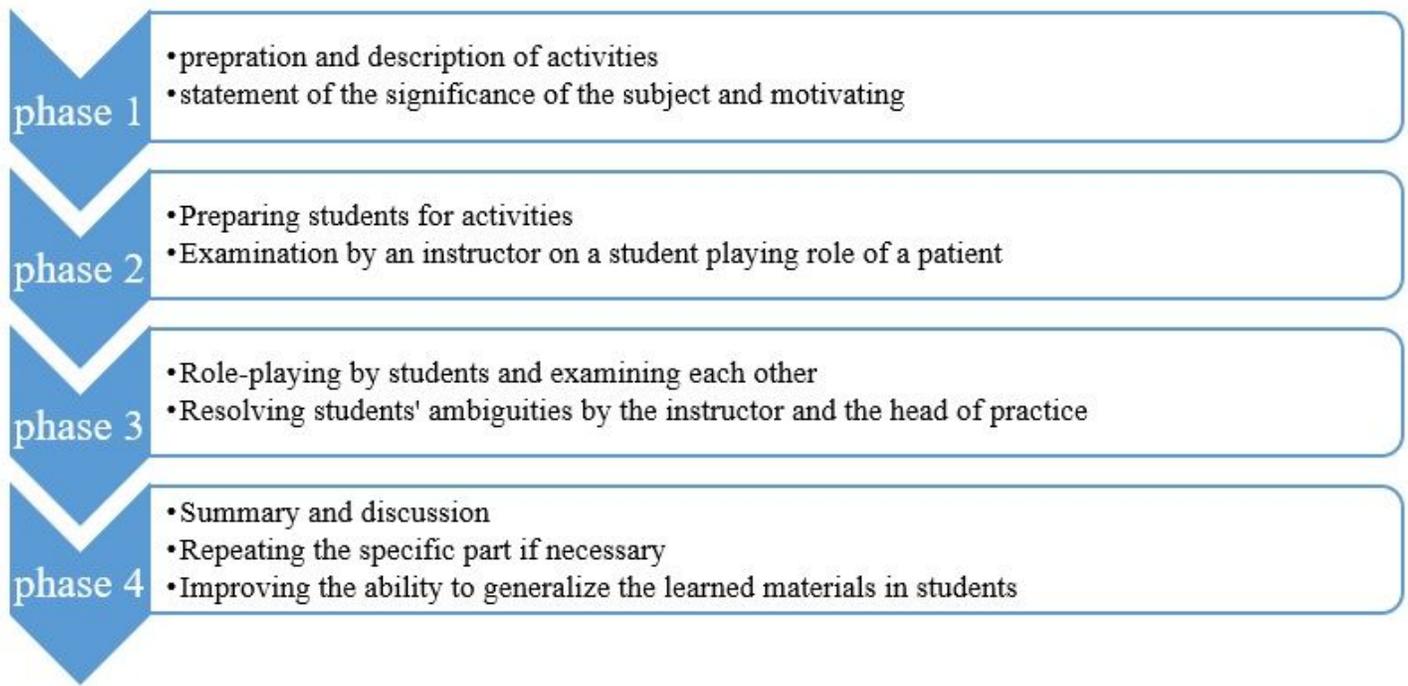
## References

1. Belova, N., I. Eilks, and T. Feierabend, The evaluation of role-playing in the context of teaching climate change. *International Journal of Science and Mathematics Education*, 2015. 13(1): p. 165-190.
2. Craciun, D., Role-playing as a creative method in science education. *Journal of Science and Arts*, 2010. 10(1): p. 175.

3. Kase-Polisini, J. and B. Spector, *Improvised drama: A tool for teaching science*. *Youth Theatre Journal*, 1992. 7(1): p. 15-19.
4. Hutt, J., *Foundations of Psychodrama History, Theory and Practice*, [Book Review]. *Australian and Aotearoa New Zealand Psychodrama Association Journal*, 2002(11): p. 86.
5. Isvoran, A. and M. Erdei, *Ghid metodic pentru profesorul de fizica*. 2001, Timisoara: Ed. Politehnica.
6. Aubusson, P.J., et al., *Metaphor and analogy in science education*. Vol. 30. 2006: Springer Science & Business Media.
7. Aubusson, P., et al., *What happens when students do simulation-role-play in science? Research in Science Education*, 1997. 27(4): p. 565-579.
8. Dawood, E., *Nursing students' perspective about role-play as a teaching strategy in Psychiatric Nursing*. *Journal of Education and Practice*, 2013. 4(4).
9. Ershad Sarabi, R., et al., *Comparing the Effect of Role-playing and Lecturing on Learning the Communication Skills Among Health Workers of Kerman Health Centers, Iran*. *Strides in Development of Medical Education*, 2020. 17(1): p. 1-5.
10. Taylor, C., et al., *Fundamentals of nursing: The art and science of nursing care*. 2001: Lippincott Philadelphia.
11. Madani, H., et al., *Senior Nursing Students' Skills in Patients' Health Assessment in Zanzan University of Medical Sciences*. *Iranian Journal of Medical Education*, 2008. 8(1): p. 81-89.
12. Adib-Hajbaghery, M., *Nurses' self-assessment of skills in the cardiovascular physical examination*. *Med Surg Nurs J*, 2013. 2(1 And 2): p. e87591.
13. Lesa, R. and A. Dixon, *Physical assessment: implications for nurse educators and nursing practice*. *International Nursing Review*, 2007. 54(2): p. 166-172.
14. Ebadi, A., et al., *Pathology of health assessment course in Bachelor of Science nursing program*. *Iran Journal of Nursing*, 2010. 23(65): p. 33-41.
15. Cherif, A.H., S. Verma, and C. Somervill, *From the Los Angeles zoo to the classroom: Transforming real cases via role-play into productive learning activities*. *The American Biology Teacher*, 1998. 60(8): p. 613-617.
16. Saunders, B., et al., *Saturation in qualitative research: exploring its conceptualization and operationalization*. *Quality & quantity*, 2018. 52(4): p. 1893-1907.
17. Heidari, P., et al., *Impact of cognitive behavior therapy on anxiety level in primary infertile women undergoing IUI*. *J Mashhad School of Nursing & Midwifery*, 2003. 17-18(5): p. 5-14.
18. Braun, V. and V. Clarke, *Using thematic analysis in psychology*. *Qualitative research in psychology*, 2006. 3(2): p. 77-101.
19. Nasr-Esfahani, M., A. Yazdannik, and S. Mohamadiriz, *Development of nursing student" performance in advanced cardiopulmonary resuscitation through role-playing learning model*. *Journal of Education and Health Promotion*, 2019. 8.

20. Rao, D. and I. Stupans, Exploring the potential of role play in higher education: development of a typology and teacher guidelines. *Innovations in Education and Teaching International*, 2012. 49: p. 427 - 436.
21. Moreno-Guerrero, A.-J., et al., Educational innovation in higher education: Use of role playing and educational video in future teachers' training. *Sustainability*, 2020. 12(6): p. 2558.
22. Delnavaz, S., et al., Comparison of scenario based triage education by lecture and role playing on knowledge and practice of nursing students. *Nurse education today*, 2018. 70: p. 54-59.
23. Kesten, K.S., Role-play using SBAR technique to improve observed communication skills in senior nursing students. *Journal of Nursing Education*, 2011. 50(2): p. 79-87.
24. Wang, W., et al., Improving Chinese nursing students' communication skills by utilizing video-stimulated recall and role-play case scenarios to introduce them to the SBAR technique. *Nurse education today*, 2015. 35(7): p. 881-887.
25. Kumar, R.S. and S.N. Narayanan, Role-playing lecturing: a method for teaching neuroscience to medical students. *Adv Physiol Educ*, 2008. 32(4): p. 329-31.
26. Kasper, G. and S.J. Youn, Transforming instruction to activity: Roleplay in language assessment. *Applied Linguistics Review*, 2018. 9(4): p. 589-616.
27. Comer, S.K., Patient care simulations: Role playing to enhance clinical understanding. *Nursing education perspectives*, 2005. 26(6): p. 357-361.
28. Christiaens, G. and J.H. Baldwin, Use of dyadic role-playing to increase student participation. *Nurse Educ*, 2002. 27(6): p. 251-4.
29. Murray, C.J. and A. Main, Role modelling as a teaching method for student mentors. *Nurs Times*, 2005. 101(26): p. 30-3.
30. Kim, Y.-H. and Y.-M. Lee, Relationship of learning motivation, self-directed learning ability and problem solving process of nursing students after practice evaluation of fundamentals of nursing course using role play. *Journal of the Korea Academia-Industrial cooperation Society*, 2012. 13(1): p. 147-155.
31. Liebrecht, C. and S. Montenery, Use of Simulated Psychosocial Role-Playing to Enhance Nursing Students' Development of Soft Skills. *Creat Nurs*, 2016. 22(3): p. 171-175.
32. Oh, H. and P. Solomon, Role-playing as a tool for hiring, training, and supervising peer providers. *J Behav Health Serv Res*, 2014. 41(2): p. 216-29.
33. Joyner, B. and L. Young, Teaching medical students using role play: twelve tips for successful role plays. *Med Teach*, 2006. 28(3): p. 225-9.

## Figures



**Figure 1**

The process of implementing the role playing teaching method