



## Illustration of Different Modalities of Role-Play for Medical Communication Skills at Undergraduate Level

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### ABSTRACT

Role-play is commonly used as a learning method for teaching communication in medical institutions and there two types of role-play i.e. Round Robin and Relay's methods. This study among our students and trainers to identify which role-play has better effect on students learning at college of Medicine, King Faisal University, Al Ahsa. All the first year students and trainers were included in the study. Students are divided into different groups and each group contains 9 – 11 students. Different scenarios are provided to the students with each physician and patient role. A pre-structured questionnaire was distributed among students and trainers to compare between the Role-play methods. The questionnaire included 15 statements related to the role-play methods based on Likert scale. Wilcoxon signed-rank test was applied to compare different items for both methods and to obtain p-value. The results showed that 221 students and 25 trainers filled the questionnaire. The Round Robin was found to have more influence on students' perception as compared to that for Relay's except for item 4 i.e. role-play builds a team work where majority of participants agreed for Relay's method. Similar results were found while checking perception of trainers. The results of statistical test for comparing both methods suggest that there is a significant difference in Round Robin and Relay's method for most of the questions P- value < 0.05. In this research it is found that both methods of role-play used in communication skills sessions are helpful however, Round robin method has better outcome on learning as compared to Relay's method.

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**Keywords:** Role-Play; Communication Skill; Consultation Skills

### 1. Introduction

There are many methods to teach and learn communication skills, however role-play is proven to motivate students for active learning. Hence, it is commonly used as a learning method for teaching communication in medical institutions (Nestel & Tierney, 2007). It is defined as, "an experiential learning technique with learners acting out roles in case scenarios to provide targeted practice and feedback to train skills" (Kiger, 2004). Characteristically, role-play procedure includes the people who are being trained or evaluated interacting with performers or different simulated patients, using scenarios based on hypothetical or actual grounds as the basis for the simulated consultation (Stokoe, 2011). Through role-play, students hypothesize their roles and develop professional and interpersonal attitude and skills. Role-play is a method, which promotes active learning and reflection in students which is superior to passive learning (Meyers & Jones, 1993). In relation to its teaching part, role-play can be used to develop the cognitive, psychomotor and affective domains of learning (Joyner & Young, 2006).

Role-play is used to enhance communication skills in medical students and has been proven to vitalize the level of pragmatism when incorporated with the technical skill training, which lead to improve patient-

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doctor interaction (Nikendei, 2007). Role-plays have several comprehensible practices in medical education. Of special relevance to medical field are, authorizing students to place themselves in conditions they had not practiced before, to help them empathize and understand other people's complications and situations (Fertleman, C., Gibbs & Eisen, 2005). Literature further suggests that role-play stimulates student interest; helps correlating previous knowledge and more information is recalled from role-play than from traditional teachings (Joyner & Young, 2006). It is also used to practice skills, discover subtle issues, expose behaviors and sensitize participants to other ideas, attitudes and values. It is a continuous, interactive, dynamic teaching approach that engages students in meaningful learning (Joyner & Young, 2006). Role-play activities can be performed in different ways. Maier suggests that role-play method is selected according to the requirement, whether the learning objective discourses knowledge, attitudes or skills. In the fulfilment of knowledge, role-plays can be valuable to observe and then discuss, for the sake of attitude development, role-play needs be structured in such a way that performer experiences empathy spontaneously. Whereas for skills acquisition, the opportunity for repeated opportunities with feedback is critical (Maier, 2002). For the attainment of patient-centered interviewing skills, the approach in which students play their role as a medical practitioner is used where they are anticipated to perform as they would in real clinical encounters. However, Stevenson and Sander found that role-play and presentations by students were not widely preferred instructional technique by 32% of new medical students (Stevenson, & Sander, 2002). The problem based learning (PBL) curriculum for our medical college was adapted from University of Groningen (UoG) which is based on CanMED competencies and one of those competencies is the communicator (Framework, 2016).

In order to achieve competency of a good communicator by teaching communication skills (CS), we have small group teachings. It comprises role-play with simulated patients who are basically the students chosen from each CS group during CS sessions through pre-constructed roster from CS team. We use two types of role-play i.e. Round Robin method and Relay's or Carrousel method. Round Robin (Arpaci-Dusseau & Arpaci-Dusseau, 2014) is one of the algorithms employed by process and network schedulers in computing. As the term is generally used, time slices (time quanta) are assigned to each process in equal portions and in circular order, handling all processes without priority cyclic. Whereas, Relays or Carrousel is (Hübscher-Younger & Narayanan, 2003) a communicative and interactive opportunity for participants to get up and move around a room in a circular fashion, stopping intermittently to comment, discuss, or respond. The Round robin method in CS session includes three students; a doctor, a patient and an observer (figure 1) and Relay's method (figure 2) comprises of four doctors, four observers – one for each doctor - and a patient. In Relay's, all four doctors do the consultation with single patient at a time and if one of the doctors isn't performing the skills well, next will tap him and continue from there on and so on. The observers based on the checklist prepared by experts through an iterative process and Pendleton's rule (Cantillon & Sargeant, 2008) for both role-play methods in a similar way gives the feedback. Although there is no published evidence to suggest which method has better learning outcome, therefore, we conducted this study among students and trainers to distinguish and identify which role-play has better effect on students learning.

## 2. Method

A comparative cross-sectional analytical study was conducted in 2018 at the college of medicine for comparison of two methods of role-play for communication skills. Communication skill session in PBL setting at our college is taken as small group teaching where micro-skills, meso-skills and breaking bad news along with sexuality are taught from year 1 to year 3 respectively (Barsky, 2016; Baile, 2000). All the trainers are pre-trained for the sessions. Before start of sessions, workshops are conducted in order to train the trainers for micro, meso skills and breaking bad news and introductory session is conducted for students to give an overview. Micro-skills include: paraphrasing, prompting, showing empathy, asking open and close ended questions, making specific, summarizing, safety netting and meso-skills are: active listening, accommodating, investigative questioning, explaining, informing, advising, motivating, coaching, instructing, reaching consensus. Students are divided into different groups and each group contains 9 – 11 students. An interactive session with video demonstration, discussion and role-play consultation is conducted. For role-play, two methods are used i.e. Round Robin and Relay's method – description of each is given in introduction. In all, 6 sessions for communication skills are conducted in year 1. Of which, Round

robin is practiced in 4 sessions and Relay's method is performed in remaining two sessions. Different scenarios are provided to the students with each physician and patient role. However, patient role is kept only for simulated patients, where trainers guide them in separate room. Simulated patients are the students chosen as patients from each group for each session as per roster constructed by the CS coordinator.

The study was conducted at college of Medicine, King Faisal University, Al ahsa. We have communication skills in all three years. A sample size of 221 selected all first year students and all 25 trainers were involved in teaching included in the study. A pre-structured questionnaire was distributed among students and trainers at the end of block 1.4. The questionnaire included 15 statements related to the role-play methods based on Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. A validated questionnaire was used based on previous study (Khane & Joshi, 2014) done in India at private medical college. However, this study had different context and method. Therefore, the questions were modified and more items were added by CS and Medical education experts based on the teaching of CS sessions and according to the competencies relevant to communication skills. We tried to measure the effectiveness of two different methods of role play through the questionnaire. Data was collected and entered in to SPSS version 20.00. It was then cleaned and percentage, mean and standard deviation were computed for all the items. Wilcoxon signed-rank test was applied to compare different items for both methods and to obtain p-value. A P-value of <0.05 was considered as significant.

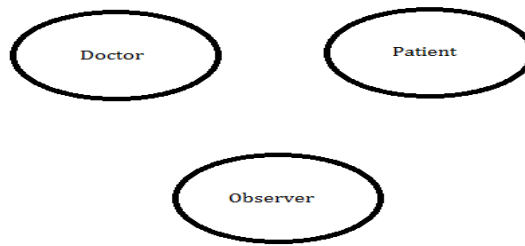


Figure 1. Round robin Method

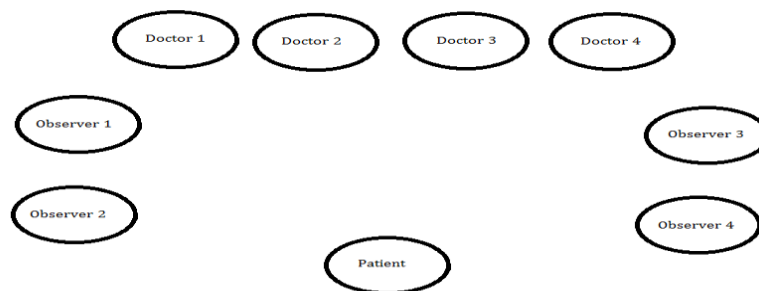


Figure 2. Relay's method

### 3. Results

The results showed that 221 students and 25 trainers filled the questionnaire of which 51% were males and 49% were females. The majority of first year medical students' perception on comparison between role-play was significantly different (Table 1).

**Table 1.** Responses of students to individual items of the questionnaire

Role Play Statements	Round Robin Responses					Relay's Responses				
	SA	A	N	D	SD	SA	A	N	D	SD
Role – Play is enjoyable	51(23%)	90(41%)	57(26%)	14(6%)	6(3%)	47(21%)	59(27%)	62(28%)	30(14%)	11(5%)
Role – Play helps to improve knowledge	48(22%)	98(44%)	48(22%)	17(8%)	7(3%)	40(18%)	77(35%)	52(23%)	22(10%)	14(6%)
Role – Play improves communication skills	79(36%)	97(44%)	29(13%)	8(4%)	2(1%)	54(24%)	81(37%)	48(22%)	11(5%)	10(4%)
Role – Play builds a team work	40(18%)	72(33%)	64(29%)	30(14%)	9(4%)	84(38%)	70(32%)	35(16%)	11(5%)	9(4%)
Role – Play is an interesting mode of learning	62(28%)	71(32%)	55(25%)	22(10%)	3(1%)	61(28%)	53(24%)	61(28%)	23(10%)	8(4%)
Role – Play generates better attention span	44(20%)	84(38%)	67(30%)	18(8%)	5(2%)	38(17%)	70(32%)	73(33%)	17(8%)	9(4%)
Role – Play helps in developing self-confidence	82(37%)	77(35%)	42(19%)	14(6%)	4(2%)	69(31%)	80(36%)	35(16%)	13(6%)	9(4%)
Role – Play have an important role for consultation skills	89(40%)	82(37%)	34(15%)	8(4%)	3(1%)	59(27%)	85(38%)	37(17%)	16(7%)	8(4%)
Role – Play is very useful teaching method	74(33%)	71(32%)	54(24%)	18(8%)	3(1%)	58(26%)	58(26%)	60(27%)	24(11%)	10(4%)
Role – Play enables to deal real patient in future	74(33%)	78(35%)	49(22%)	9(4%)	8(4%)	45(20%)	67(30%)	60(27%)	20(9%)	16(7%)
Role - play requires to be immersed, practical, and able to make decisions	60(27%)	88(40%)	61(28%)	9(4%)	2(1%)	36(16%)	82(37%)	65(29%)	18(8%)	7(3%)
Role-Play motivates to participate actively in the discussion	68(31%)	79(36%)	58(26%)	10(4%)	6(3%)	50(23%)	77(35%)	55(25%)	18(8%)	9(4%)
Role - Play improves my critical / analytical skills	52(23%)	92(42%)	53(24%)	19(9%)	3(1%)	44(20%)	78(35%)	62(28%)	15(7%)	8(4%)
Role-Play helps me to gain greater sense of empathy	63(28%)	67(30%)	56(25%)	22(10%)	10(4%)	30(14%)	59(27%)	74(33%)	31(14%)	11(5%)
Role - Play develops my awareness of oneself in relation to others	61(28%)	86(39%)	53(24%)	15(7%)	5(2%)	49(22%)	76(34%)	55(25%)	17(8%)	10(4%)

Key: SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree

(Results expressed as the number of students (n = 221) and percentage (in brackets) who gave a particular response on a 5 point Likert scale to each of the 15 items of the questionnaire).

In responses to most of the questions, Round Robin was found to have more influence on students' perception as compared to that for Relay's except for item 4 i.e. role-play builds a team work where majority of participants agreed for Relay's method. Similar results were found while checking perception of trainers (Table. 2) except for difference of opinion on item 2 and 6 rather than item 4. The perception on question 2 and 6 i.e. role-play helps to improve knowledge and role-play generates better attention span; was found to have tie between both methods. Furthermore, there was no significant difference found between the role-play methods and gender for both students and trainers.

**Table 2.** Responses of trainers to individual items of the questionnaire

Role Play Statements	Round Robin Responses					Relay's Responses				
	SA	A	N	D	SD	SA	A	N	D	SD
Role – Play is enjoyable	10(45%)	7(32%)	4(18%)	1(4%)	0	8(36%)	7(32%)	5(23%)	1(4%)	1(4%)
Role – Play helps to improve knowledge	8(36%)	11(50%)	2(9%)	0	1(4%)	8(36%)	7(32%)	6(27%)	0	1(4%)
Role – Play improves communication skills	12(54%)	7(32%)	3(18%)	0	0	8(36%)	7(32%)	5(23%)	1(4%)	1(4%)
Role – Play builds a team work	7(32%)	6(27%)	6(27%)	2(9%)	1(4%)	11(50%)	6(27%)	3(18%)	1(4%)	0
Role – Play is an interesting mode of learning	10(45%)	10(45%)	1(4%)	0	0	4(18%)	9(41%)	5(23%)	0	1(4%)

Role – Play generates better attention span	8(36%)	11(50%)	2(9%)	1(4%)		8(36%)	6(27%)	6(27%)	0	1(4%)
Role – Play helps in developing self-confidence	12(54%)	7(32%)	2(9%)	0	0	8(36%)	9(41%)	3(18%)	0	1(4%)
Role – Play have an important role for consultation skills	12(54%)	9(41%)	1(4%)	0	0	7(32%)	11(50%)	2(9%)	1(4%)	1(4%)
Role – Play is very useful teaching method	9(41%)	10(45%)	2(9%)	0	0	6(27%)	11(50%)	2(9%)	1(4%)	1(4%)
Role – Play enables to deal real patient in future	7(32%)	10(45%)	4(18%)	0	0	3(18%)	12(54%)	3(18%)	2(9%)	1(4%)
Role - play requires to be immersed, practical, and able to make decisions	9(41%)	10(45%)	2(9%)	1(4%)	0	6(27%)	9(41%)	5(23%)	1(4%)	1(4%)
Role-Play motivates to participate actively in the discussion	9(41%)	10(45%)	3(18%)	0	0	8(36%)	8(36%)	5(23%)	0	1(4%)

Key: SA = Strongly Agree, A = Agree, N = Neutral, D = disagree, SD = strongly disagree

(Results expressed as the number of trainers (n = 25) and percentage (in brackets) who gave a particular response on a 5 point Likert scale to each of the 12 items of the questionnaire)

The results of statistical test for comparing both methods suggests that there is significant difference in Round Robin and Relay's method for most of the questions P- value < 0.05 (table 3). However, there was no significant difference on role-play is an interesting mode of learning (P-value 0.062 (CI = 0.052 – 0.061)), role-play generates better attention span (P- value 0.138(CI = 0.129 – 0.142)) and role-play helps in developing self-confidence (P-value 0.178 (CI = 0.170 – 0.185). Overall, the results suggest that there is difference between both methods and both students and trainers perceive Round Robin positively.

**Table 3.** Comparison of sub-scores of both role-plays for each item in the questionnaire

Variables	Round Robin's Method		Relay's Method		Test Statistics	
	Mean	SD	Mean	SD	P - Value	Confidence interval
Role – Play is enjoyable	2.24	0.973	2.52	1.144	0.002	0.002 – 0.004
Role-Play helps to improve knowledge	2.25	0.991	2.48	1.127	0.001	0.000 – 0.001
Role-Play improves communication skills	1.87	0.849	2.23	1.054	0.00	0.000 – 0.000
Role-Play builds a team work	2.52	1.076	2.00	1.083	0.00	0.000 – 0.000
Role-Play is an interesting mode of learning	2.22	1.023	2.34	1.131	0.062	0.052 – 0.061
Role-Play generates better attention span	2.43	1.697	2.55	1.701	0.138	0.129 – 0.142
Role-Play helps in developing self-confidence	2.00	0.995	2.09	1.071	0.178	0.170 – 0.185
Role-Play have an important role for consultation skills	2.00	2.238	2.17	1.053	0.00	0.000 – 0.000
Role-Play is very useful teaching method	2.11	1.012	2.38	1.144	0.00	0.000 – 0.001
Role-Play enables to deal real patient in future	2.08	1.029	2.50	1.159	0.00	0.000 – 0.000
Role-play requires to be immersed, practical, and able to make decisions	2.11	0.887	2.41	.984	0.00	0.000 – 0.000
Role-Play motivates to participate actively in the discussion	2.13	0.992	2.33	1.065	0.003	0.002 – 0.004
Role-Play improves my critical / analytical skills	2.21	0.961	2.34	1.027	0.024	0.023 – 0.030
Role-Play helps me to gain greater sense of empathy	2.31	1.129	2.68	1.068	0.00	0.000 – 0.000
Role - Play develops my awareness of oneself in relation to others	2.17	0.986	2.34	1.076	0.004	0.002 – 0.004

#### 4. Discussion

So far there is no literature available which compares different methods of role-play used for communication skills. Thus, this study was done to determine the effectiveness of two different types of role-play used for teaching communication skills sessions for under graduate medical students in Saudi Arabia. The overall results suggest that Round Robin has better effect on learning than Relay's however, Relay's has also better effect in certain areas like group functioning, an interesting mode of learning and having better attention span. Due to scarcity of literature on such objectives, it is difficult to compare the results of our study with others based on different types of role-play. However, we are comparing the results in general with role play technique for different studies in line with different questions in our study.

Debra Nestel conducted the study at Imperial College for communication skills in medical students and she suggested that role-play is an effective mean of learning communication skills for medical students (Nestel & Tierney, 2007), which is also consistent with our study however, we couldn't compare that which type has better effect. As suggested by the results of our study, practicing role-play improves both micro and meso skills. Similar results are reported by Mansfield in 1991 that role-play can be used to teach and practice basic communication skills and it improves performance of the students significantly (Mansfield, F. (1991). It further enhances the level of empathy in the role-players which can lead to powerful behavioral and attitudinal outcomes (McGill & Beaty, 2001).).

These results are in line with our study where in Round Robin method the application of level of empathy is significantly high whereas, in Relays method due to team work somehow the level of sympathy is lower. Littlefield et al., mentioned in their research that the transition from pre-clinical to clinical years is enhanced by role play and it provides a safe and low-risk learning environment for the students (Littlefield & Meyer, 1999) however, we couldn't compare the role play methods with clinical and pre-clinical years but role play enhances the capabilities of students overall. (Neikendei C et al. 2007) suggested similar results, in their randomized control trial that role-play enhances the realism of technical skills training, leading to better patient-physician communication and it is a useful approach in learning communication skills, which is also found similarly in our study. Recently, Suzanne et al, conducted a comparative cross-sectional study in India to compare the perception of role-play and observation as teaching-learning method in physiology. She suggests that students perceived the role-play to be interesting, lively, and helpful in breaking monotony and in visualizing clinical features (Khane, & Joshi, 2014) which is similar to one component of our study where students highly appreciated and significantly took interest in the activity. She further mentioned that the positive perception regarding role-play could be because that role-play is a student-centered teaching learning method, which in accordance with our curriculum, which is problem-based and student centered, is also similar. However, comparison between both methods of role-play is not possible in line with other studies because of different objectives.

#### 5. Limitation

The study is conducted for very first time, so far there is no literature that compares different methods of role-play and their effectiveness in teaching. Limitations of our study include the less number of participants and scarcity of literature on the types of role-play or effectiveness on different types of role-play.

#### 6. Conclusion

Both methods of role-play used in communication skills sessions are helpful however, Round robin method has better outcome on learning as compared to Relay's method.

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