



Original Article

Evaluation of dental students' responses to roleplay videos in a professionalism course

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المخلص

أهداف البحث: تهدف هذه الدراسة إلى تقييم انطباق طلاب طب الأسنان حول مقاطع فيديو تقمص الأدوار في مقرر المهنية التي تم إجراؤها على مدى ثلاث سنوات.

طرق البحث: جميع طلاب السنة الثالثة لطب الأسنان (العدد = 310) الذين شاركوا في مادة المهنية على مدى ثلاث سنوات (19/2018-17/2016) تم إشراكهم في هذه الدراسة المقطعية. وتم استخدام هيكل عمل ميلر للكفاءة السريرية مع مقاطع الفيديو التي أنشئها الطلاب، التي تتكون من 1- المعرفة، 2- الملاحظة، 3- المحاكاة، 4- الخبرة. قدم الطلاب في نهاية المقرر، كل عام، إجاباتهم حول مقاطع فيديو تقمص الأدوار باستخدام استبانة تعباً ذاتياً مكونة من 25 عنصراً. تم تقسيم الاستبانة إلى أربع مجالات/أقسام: 1- إعداد الطالب لإنتاج الفيديو، 2- المهارات التي طورها إنتاج الفيديو، 3- فوائد مشاهدة مقاطع الفيديو، 4- الجوانب العامة للنشاط.

النتائج: اتفق معظم الطلاب على أن إنتاج الفيديو وجههم للعمل كفريق (76%)، فهم التواصل المهني مع الزملاء (70%) وكذلك المرضى (66%). وأدرك غالبية الطلبة تحسن مهارات حل المشكلات (67%) ومهارات إدارة المشاريع (65%). كما أقر ما يقرب من ثلاثة أرباع الطلبة بفوائد مشاهدة مقاطع الفيديو في تحسين سلوكهم المهني تجاه المرضى. وأظهرت الطالبات وخصوصاً الحاصلات على درجات عالية متوسط درجات أكبر لمعظم العناصر (22 و 11 من 25 عنصراً، على التوالي) مع وجود فروق ذات دلالة إحصائية.

الاستنتاجات: في هذه الدراسة، كان تأثير مقاطع فيديو تقمص الأدوار ملموساً جداً من قبل غالبية الطلاب. قيمت الطالبات وخصوصاً الحاصلات على درجات عالية التعلم بطريقة التدريس هذه تقييماً مرتفعاً. ويجب أن تكون مهام الفيديو

جزءاً من مقرر المهنية بطب الأسنان لتحسين مهارات التواصل والسلوك المهني مع الزملاء والمرضى.

الكلمات المفتاحية: تقمص الدور؛ المهنية؛ تعليم طب الأسنان؛ مهارات التواصل؛ المملكة العربية السعودية

Abstract

Objective: This study aimed to evaluate dental students' perceptions of roleplay videos used in a professionalism course that was conducted over three years.

Methods: All third-year dental students (N = 310) who participated in a professionalism course over three years (2016/17–2018/19) were included in this cross-sectional study. Miller's framework for clinical competence was used for the student-generated videos, which included 1) knowledge, 2) observation, 3) simulation, and 4) experience. Every year, at the end of the course, the students provided their responses to the roleplay videos using a 25-item self-administered questionnaire. The questionnaire was divided into four sections: 1) student preparations for video production, 2) skills developed through video production, 3) benefits of watching the videos, and 4) general aspects of the activity.

Results: Most students agreed that video production led to them working as a team (76%) and understanding professional communication with colleagues (70%) and patients (66%). An improvement in problem-solving skills (67%) and project management skills (65%) was recognised by a majority of the students. Nearly three quarters of the students acknowledged that watching videos improved their professional behaviour towards the patients. Female students and those with high grades showed greater mean scores for most items (22 and 11 out

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of 25 items, respectively) with significant differences ($p < 0.05$).

Conclusion: In our study, the impact of roleplay videos was recognised by a majority of the students. Female students and those with high grades highly rated learning through this method of teaching. Video assignments should be a part of professionalism courses in dentistry to improve students' communication skills and professional behaviours with colleagues and patients.

Keywords: Communication skills; Dental education; KSA; Professionalism; Roleplay

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Introduction

Teaching professionalism is central to dental education and vital for life-long learning and successful dental practice.¹ According to the American Dental Education Association, professionalism and ethics are required competencies in the academic programs of accredited dental schools.² Integrity, honesty, courage, and self-sacrifice are important elements of professional behavior.³ In addition, professionalism focuses on developing effective communication skills, providing high-quality services, improving the shared responsibility of dental care providers, and increasing their commitment to community service.^{3,4}

Students have a strong desire to act in a professional manner and as a caring health care provider; however, there are challenges in teaching and evaluating professionalism due to the non-availability of an appropriate learning environment and the subjective nature of the assessments, which can cause misunderstandings among students and leave them feeling unfairly treated.⁵ It has been reported that professionalism courses at US medical colleges lack validity and reliability in their teaching and assessment methods.⁶ Hence, no single instructional method should be employed in teaching professionalism, and students should be engaged in different learning activities.⁷

Role modelling/roleplaying is one of the most common and preferred methods of teaching professionalism in medical and dental education.^{8–11} Showing patient videos, having class discussions, and obtaining students' reflections are effective methods of teaching professionalism to undergraduate dental students. Feedback by instructors and peers can also improve communication skills and professional behaviour.¹² Nevertheless, traditional lectures remain the most commonly employed method of teaching professionalism and communication skills.¹³

In recent years, student-generated videos have increasingly been used in academic settings because of their many advantages. These videos have been used to motivate students, help them understand the concepts given in the learning activities, improve their interpersonal skills through teamwork, and develop communication skills.^{11,14} In addition, students develop a sense of ownership and self-esteem by working on video production projects and utilise student-centred learning.¹⁵ In Malaysia, Omar et al. evaluated undergraduate dental students' responses about the use of student-generated video for teaching professionalism. The authors reported that the majority (86–88%) of students believed that the videos enhanced their teamwork and communication skills, and improved their understanding of the dentist's role in the delivery of oral care.¹¹

The literature shows that students who perform unprofessionally in undergraduate programs often face disciplinary actions by medical boards.¹⁶ Therefore, an emphasis has been placed on teaching and evaluating professionalism.^{10,17} In the 2016/17 academic year, a professionalism course was introduced to third-year dental students for the first time in the College of Dentistry of Imam Abdulrahman Bin Faisal University, KSA. Based on the learning objectives of the course, students learned professionalism through didactic sessions and roleplay assignments/videos on given scenarios related to professional or ethical issues. The evaluation of students' responses over the years can help monitor the conduct of a course and improve its quality. However, there is a lack of data on students' responses to this professionalism course over the years. Therefore, the objective of this study was to evaluate students' perceptions of the roleplay videos in the professionalism course conducted over three years.

Materials and Methods

Participants

This cross-sectional study included all third-year dental students who were introduced to a course on professionalism over three years. The course broadly covered communication skills and professional and ethical issues with patients and colleagues. Student-generated roleplay videos were used to teach these concepts in the course. Similar to a previous study,¹¹ Miller's framework for clinical competence was used for the roleplay video assignments; it consists of 1) knowledge, 2) observation, 3) simulation, and 4) experience (KOSE).¹⁸ The 'knowledge' was provided through lectures and discussions. The students were shown previously available videos on communication with patients as well as ethical and professional issues in a dental team. This provided them with an opportunity to learn through observation. Roleplay videos were used to introduce learning through 'simulation' in the course. Experience was gained during the production of roleplay videos in a team environment. The students were given roleplay assignments

which included clinical scenarios involving patients and a dental team. These roleplay assignments were aimed at improving professional behaviour, ethical conduct, and communication with patients and dental staff.

For roleplay assignments, a group of five to six students participated in each team. Male and female students were taught in separate classes and at different times/sessions during the course. Hence, approximately 10 groups of male students and 10 groups of female students developed nearly 20 roleplay assignments for communication with patients utilising the concept of motivational interviewing (one assignment). The students were told about the evaluation criteria of the assignment and were shown previously available videos on the same topic. After watching these videos, there was a brief discussion on the videos followed by a question/answer session. The students were free to choose where to shoot/make the videos. Hence, some groups developed them in the clinics at the college, while others went to private clinics to make the videos. Each group was provided with a scenario for the roleplay assignment and students developed the dialogue, provided solutions, and acted in the roleplay videos. In addition, the processing of these videos was done by the students to ensure creativity, originality, quality, and timeliness. The students were given one week to complete their video. After the grading of these roleplay assignments individually by three faculty members, each group received feedback on their assignment. This helped the students improve their learning experience and perform better in the next roleplay assignment.

After the first assignment, students were required to work in a similar manner on another roleplay assignment on communication with colleagues which involved ethical and professional issues (interpersonal skills). Again, almost 20 roleplay videos were developed. The same steps of showing previously available videos, explaining the evaluation criteria, discussing the important elements, answering students' queries, and providing clinical scenarios were followed. The students in each team worked collaboratively on a given scenario to complete the second roleplay assignment.

Study instrument

The students responded to a questionnaire that was based on a previous similar study.¹¹ The questionnaire was divided into four sections: 1) video production, 2) skills developed during video production, 3) benefits of watching the videos, and 4) general aspects of the activity.¹¹ The video production and skills developed during video production sections include four and five items, respectively. There were five items in the benefits of watching the videos section and six in the general aspects of the activity section. Since there were two roleplay assignments in the course, and in order to evaluate students' responses on two different topics, two sections on the benefits of watching the videos were added to the questionnaire. A three-point Likert-scale (disagree, neutral, agree) was used for each item in the instrument. The questionnaire was reviewed and

discussed among the researchers for its relevance to the course, cultural adaptation, and validity. Pretesting of the questionnaire was done before distributing it to the study participants. However, no changes were made to the questionnaire.

Procedure

Each year, the explanations and details of the questionnaire were discussed with students in the classroom. However, students were allowed to provide their responses at home or college through the college email system. Therefore, a self-administered questionnaire was sent to students through the college email at the end of the course. The college provided each student with an email account and correspondence took place through these accounts. Completed questionnaires were returned to the course director through the college email. The privacy and confidentiality of students' responses were maintained by administering an anonymous questionnaire. The Scientific Research Unit of the College provided ethical approval for the study.

Statistical analysis

Means, standard deviations, frequencies, and percentages were calculated for the different study variables. The mean score of each item was calculated by averaging the disagree (1), neutral (2), and agree (3) options. The Mann Whitney U test was performed to compare the responses of male and female students and students with low and high academic performance in the course. The students' grades were dichotomised to low grades (≤ 80) and high grades (> 80). A longitudinal comparison of responses over three years was done using the Kruskal Wallis test. Statistical analysis was performed using SPSS version 22 (IBM, Armonk, NY, USA) and a P-value of < 0.05 was considered statistically significant.

Results

A total of 310 students participated in this survey over 3 consecutive years (AY 2016/17 to 2018/19). Generally, the advantages of the KOSE method in improving teaching professionalism were well perceived by most of the students. In 'student preparation for video production', most students agreed that preparing the scripts encouraged them to work closely in a team (76%), understand professional communication with colleagues (70%) and patients (66%), and read about the topics (68%). Improvements in problem-solving and project management skills during video production were recognised by 67% and 65% of participants, respectively. Nearly three quarters of participants agreed that watching motivational interviewing and interpersonal skills videos improved their professional behaviour towards patients. Seventy-five percent agreed that these activities improved their learning about patient communication (Figure 1).

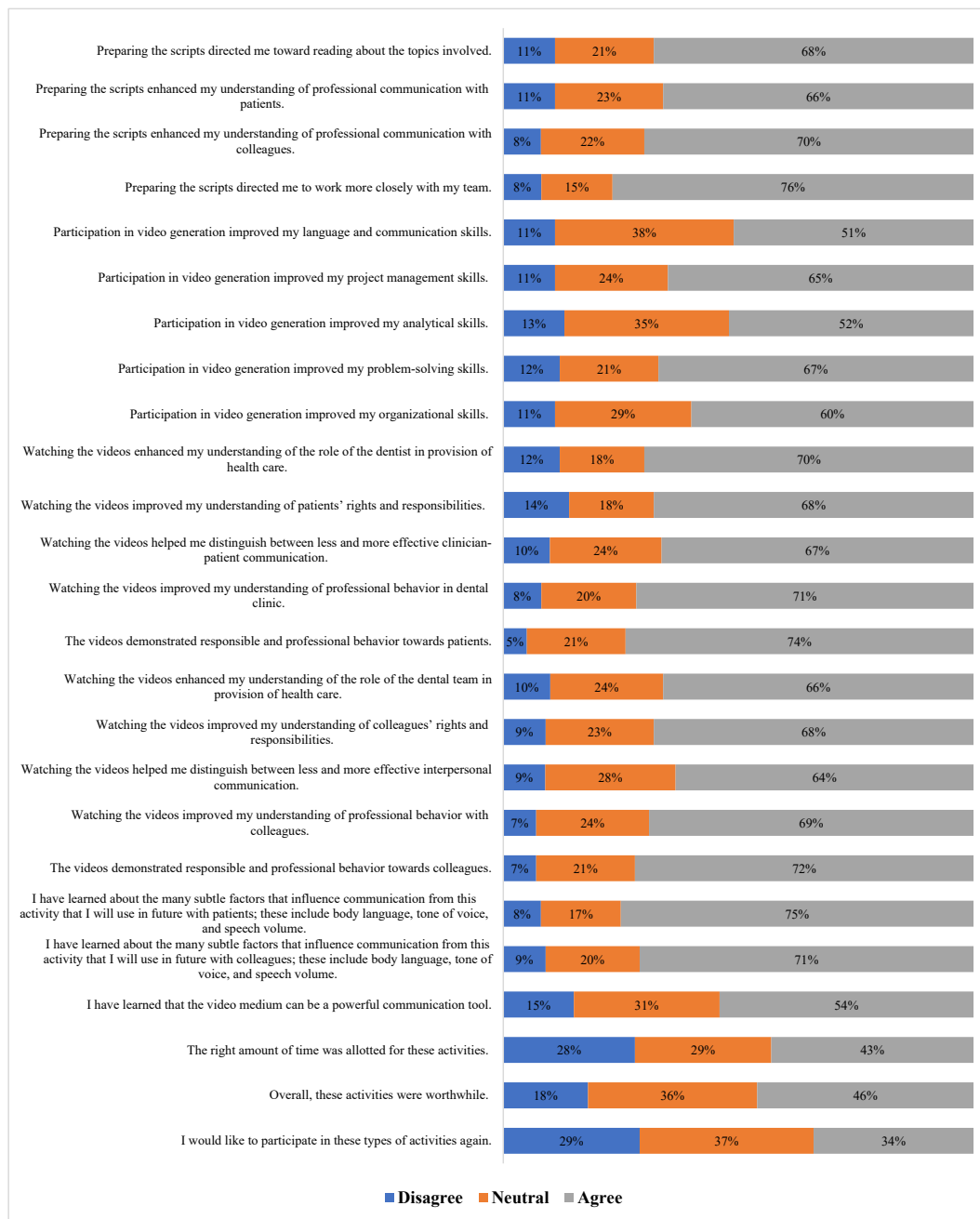


Figure 1: Distribution of students' responses about roleplay videos over three years.

The comparison of the students' responses over three years showed statistically significant differences in the responses to all items in 'student preparation for video production', three items in 'skills developed in video generation', two items in 'benefits of watching motivational interviewing', all items in 'benefits of watching interpersonal skills videos', and three items in 'general aspects of the learning activity' ($P < 0.05$). Overall, 17 out of 25 items showed significant differences over 3 years. Higher mean scores for 23 out of 25 items were reported in the year 2016–17 compared with subsequent years (Table 1).

Table 2 presents comparisons of the students' responses regarding gender. Overall, female students demonstrated greater mean scores for most items (22 out of 25 items) than male students, showing a more positive perspective. Twelve items showed significantly higher mean scores for female students ($P < 0.05$).

Table 3 presents comparisons of the students' responses regarding the course grades (low vs. high). The students with high grades in the course compared with low grades demonstrated increased mean scores, and significantly higher mean scores in students with high grades were reported for 11 items ($P < 0.05$).

Table 1: Comparison of students' responses about roleplay videos over three years.

	Year 2016–17	Year 2017–18	Year 2018–19	P-Value
	Mean ± SD	Mean ± SD	Mean ± SD	
Student Preparation for Video Production				
Preparing the scripts enhanced my understanding of professional communication with <i>patients</i> .	2.72 ± 0.59	2.42 ± 0.72	2.52 ± 0.70	0.003 ^a
Preparing the scripts enhanced my understanding of professional communication with <i>colleagues</i> .	2.75 ± 0.54	2.64 ± 0.60	2.50 ± 0.71	0.021 ^a
Skills Developed in Students During Participation in Video Generation				
Participation in video generation improved my language and communication skills.	2.55 ± 0.59	2.31 ± 0.74	2.33 ± 0.68	0.038 ^a
Participation in video generation improved my problem-solving skills.	2.69 ± 0.60	2.53 ± 0.69	2.43 ± 0.77	0.043 ^a
Benefits of Watching MI Videos				
Watching the videos enhanced my understanding of the role of the dentist in the provision of health care.	2.78 ± 0.51	2.51 ± 0.72	2.47 ± 0.80	0.005 ^a
Watching the videos improved my understanding of professional behaviour in dental clinics.	2.79 ± 0.48	2.64 ± 0.60	2.47 ± 0.76	0.004 ^a
Benefits of Watching Interpersonal Skills Videos				
Watching the videos improved my understanding of colleagues' rights and responsibilities.	2.74 ± 0.55	2.55 ± 0.69	2.52 ± 0.66	0.023 ^a
Watching the videos improved my understanding of professional behaviour with colleagues.	2.83 ± 0.43	2.53 ± 0.63	2.52 ± 0.69	<0.000 ^a
General Aspects of the Learning Activity				
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>patients</i> ; these include body language, tone of voice, and speech volume.	2.81 ± 0.51	2.65 ± 0.62	2.59 ± 0.67	0.015 ^a
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>colleagues</i> ; these include body language, tone of voice, and speech volume.	2.77 ± 0.57	2.54 ± 0.66	2.57 ± 0.69	0.005 ^a

^a Significant at p = 0.05. MI = Motivational interviewing.

Table 2: Comparison of students' responses about roleplay videos regarding gender in the course.

	Male	Female	P-value
	Mean ± SD	Mean ± SD	
Student Preparation for Video Production			
Preparing the scripts enhanced my understanding of professional communication with <i>patients</i> .	2.39 ± 0.76	2.67 ± 0.59	<0.000 ^a
Preparing the scripts enhanced my understanding of professional communication with <i>colleagues</i> .	2.52 ± 0.70	2.71 ± 0.55	0.009 ^a
Skills Developed in Students During Participation in Video Generation			
Participation in video generation improved my language and communication skills.	2.47 ± 0.66	2.34 ± 0.70	0.094
Participation in video generation improved my problem-solving skills.	2.50 ± 0.70	2.59 ± 0.69	0.227
Benefits of Watching MI Videos			
Watching the videos improved my understanding of professional behaviour in dental clinics.	2.52 ± 0.70	2.72 ± 0.57	0.007 ^a
Benefits of Watching Interpersonal Skills Videos			
Watching the videos improved my understanding of colleagues' rights and responsibilities.	2.50 ± 0.69	2.68 ± 0.59	0.013 ^a
Watching the videos improved my understanding of professional behaviour with colleagues.	2.55 ± 0.67	2.68 ± 0.56	0.080
General Aspects of the Learning Activity			
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>patients</i> ; these include body language, tone of voice, and speech volume.	2.57 ± 0.66	2.76 ± 0.55	0.008 ^a
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>colleagues</i> ; these include body language, tone of voice, and speech volume.	2.50 ± 0.72	2.72 ± 0.57	0.004 ^a

^a Significant at p = 0.05.

Table 3: Comparison of students' responses about roleplay videos regarding grades in the course.

	Low grades Mean (SD)	High grades Mean (SD)	P-value
Student Preparation for Video Production			
Preparing the scripts enhanced my understanding of professional communication with <i>patients</i> .	2.37 ± 0.78	2.66 ± 0.59	<0.000 ^a
Preparing the scripts enhanced my understanding of professional communication with <i>colleagues</i> .	2.50 ± 0.71	2.71 ± 0.54	0.007 ^a
Skills Developed in Students During Participation in Video Generation			
Participation in video generation improved my language and communication skills.	2.44 ± 0.67	2.36 ± 0.70	0.279
Participation in video generation improved my problem-solving skills.	2.46 ± 0.72	2.61 ± 0.78	0.072
Benefits of Watching MI Videos			
Watching the videos improved my understanding of professional behaviour in dental clinics.	2.52 ± 0.70	2.70 ± 0.58	0.014 ^a
Benefits of Watching Interpersonal Skills Videos			
Watching the videos improved my understanding of colleagues' rights and responsibilities.	2.50 ± 0.69	2.66 ± 0.60	0.032 ^a
Watching the videos improved my understanding of professional behaviour with colleagues.	2.52 ± 0.67	2.69 ± 0.56	0.019 ^a
General Aspects of the Learning Activity			
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>patients</i> ; these include body language, tone of voice, and speech volume.	2.58 ± 0.66	2.74 ± 0.56	0.030 ^a
I have learned about the many subtle factors that influence communication from this activity that I will use in the future with <i>colleagues</i> ; these include body language, tone of voice, and speech volume.	2.47 ± 0.73	2.72 ± 0.57	0.002 ^a

^a Significant at $p = 0.05$.

Discussion

In the present study, most students had a positive perspective on learning through roleplay videos in the professionalism course. The majority agreed that preparing a script helped them improve their communication with their colleagues and patients, read the given topics, and work in a team environment. Similarly, most students recognised improvements in their problem-solving and project management skills during the roleplay video production. The most common benefit of watching 'motivational interviewing' and 'interpersonal skills' videos was improved professional behaviour towards patients. Female students, students with high grades in the course, and students who took the course in 2016/17 gave significantly higher ratings to the roleplay video assignments than male students, students with low grades, and students in subsequent years.

Roleplay as a simulation methodology is used to teach knowledge, attitudes, and skills in a variety of professions. This method of teaching promotes active and enjoyable learning by involving students in the learning process.¹⁹ Students also report improvements in their critical thinking and attention span through roleplays compared with lectures, demonstrations, tutorials, and field trips.²⁰ In medical education, this teaching strategy is commonly used to teach communication skills to students. In roleplays, students learn to observe, discuss, and practice the roles/characters and align the topics with the learning outcomes of the course. Many researchers in previous studies reported that the majority of students recognised the importance of roleplay in learning communication skills.^{18–20} According to Nestel and Tierney, most students reported acquiring communication skills through roleplay.¹⁸ Manzoor et al. found that 88.9% of medical students reported that roleplay enhanced their communication skills.²⁰ In a recent study by Nair, 88.78% of students acknowledged learning communication skills

through roleplay, and there was a significant improvement in communication skills after two modules of roleplay.¹⁹ Likewise, roleplay assignments were incorporated into the professionalism course and most students in the present study reported improved communication with colleagues and patients. Similar to our study, Omar et al. reported that 86% of students recognised improvements in their communication skills after using student-generated roleplay videos.¹¹ In line with the evidence, students in the professionalism course were given adequate time to develop roleplay videos and were provided with feedback by the faculty for an effective learning experience.²¹

Dental curricula require teaching and assessment of communication skills to students to improve their ability to understand and manage patients' needs and concerns in dental practice.²² Effective communication is important for reducing dental anxiety and improving patient satisfaction.^{23,24} Positive treatment outcomes may not translate into improved patient satisfaction if there is improper communication between patient and provider.²⁴ A study of dental patients showed that dentists' professional behaviour and their concern for patients were the most highly rated attitudes related to patient satisfaction in Dammam, KSA.²⁵ Students report improvements in their self-confidence and increased interest in the course after a communication skills course.²⁶ Similarly, the students in the present study acknowledged that the use of roleplay video assignments improved their communication with patients and colleagues, teamwork, and professional behaviour.

Roleplay assignments, in addition to improving cognitive, psychomotor, and communication skills, also enhance attributes of professionalism. Previous research demonstrated positive learning experiences related to student-generated videos in one year.¹¹ The present study compared students' perceptions about roleplay videos over three years. Over this time period, the team of instructors/faculty, methods

of delivery for the instruction, topics of roleplay assignments, and measuring instrument remained the same and these are necessary conditions for appropriate comparisons among three cohorts of students. These comparisons of students' learning provide opportunities to assess improvement over successive years and are crucial to ensuring the quality and effectiveness of the course.²⁷

In a previous study, students earlier in the program showed a more positive perspective. Significantly higher proportions of third-year students compared with fourth-year students thought that roleplay improved the clarity of communication, provoked critical thinking, increased their attention span, and was a feasible method of learning.²⁰ In the present study, most students from 2016/17 favoured roleplay videos as a teaching methodology compared to students from the 2017/18 and 2018/19 academic years. A professionalism course was introduced to the students of 2016/17 for the first time at the college. Hence, being exposed to a new course and being enthusiastic about the course, more students perceived roleplay video assignments as a powerful learning tool because roleplaying can enhance learners' cognitive understanding of the subject/topic and enrich the learning experience through emotions, movements, and variations.²⁰ However, a minority of students from this cohort (2016/17) were less enthusiastic and did not perceive these learning activities as useful. Therefore, negative feedback from this minority of students might have negatively affected students' responses in 2017/18 and 2018/19, resulting in lower scores in subsequent years. Students in the three cohorts were exposed to comparable learning materials, teaching strategies, instructors, and evaluation criteria; however, differences in students' responses over the three years can be attributed to the workloads in other courses, individual factors, and ongoing changes in dental curricula and educational policies at the college. Despite these variations, students' ratings were considerably high in the three cohorts.

Students demonstrate specific learning style preferences that are influenced by age, gender, academic performance, and sociocultural factors.^{28,29} In a previous study at our college, most female students preferred a kinaesthetic learning style, while a multimodal style was popular among male students. Similarly, a greater proportion of students with high academic performance reflected through GPA demonstrated a preference for a kinaesthetic learning style than those with low academic performance.²⁹ Kinaesthetic learners learn through practice, experimentation, and experiences and prefer learning via roleplays, field trips, and case studies.³⁰ It was observed that significantly more positive views on roleplaying came from female rather than male students. Similar findings were observed in students with high versus low performance in the course in the present study. It can be argued that the more positive learning experiences reported by female students and high performers in the present study could be the result of their predominant kinaesthetic learning style preference.³⁰ Moreover, the higher performance by female students in the course may account for their greater acceptance of these assignments.

Among the strengths of the study, what can be mentioned is that the study conducted a longitudinal comparison of student responses over three years and evaluated gender and

course performance differences regarding student-generated roleplay videos for the first time. In addition, an adequate sample ($N = 310$) and validated instrument provided reliable study estimates. However, the data were collected from a public dental college; hence, the study findings cannot be generalised to students in private dental colleges and other geographical locations. Moreover, self-reported data can be subject to certain biases.

Conclusions

The study showed positive perceptions of dental students regarding roleplay videos in learning different elements in the professionalism course. Roleplay video assignments may be used in professionalism courses in dentistry to improve students' communication skills and professional behaviour towards colleagues and patients. Evaluations of courses over consecutive years through students' feedback should be done to gain valuable insights about students' learning experiences.

Recommendations

Effective teaching of a professionalism course requires the use of a variety of evidence-based teaching strategies including the production of roleplay videos. Students in a professionalism course should be given the opportunity to develop roleplay videos to enhance their communication with patients and colleagues, problem-solving skills, and project management skills. Such learning activities should be employed to improve students' professional behaviour towards patients and members of the dental team. The monitoring of students' feedback regarding roleplay videos over consecutive years should be conducted to identify the areas of the course that may require improvement.

Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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Conflict of interest

The authors have no conflicts of interest to declare.

Ethical approval

Ethical clearance was obtained from the Scientific Research Unit at the College of Dentistry, Imam Abdulrahman bin Faisal University [EA:202059, 08/06/2020]. All participants gave informed written consent before participating in this study.

Consent

All participants gave their informed consent to participate. The authors declare that the paper has not been previously published and is not under review.

Authors contributions

KK and MN conceived and designed the study. KK conducted the research, provided the research materials, and collected and organised the data. KK and MN analysed the study results and interpreted the data. Both authors wrote the initial and final drafts of the article. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

References

- Masella RS. Renewing professionalism in dental education: overcoming the market environment. *J Dent Educ* 2007; 71(2): 205–216.
- American Dental Education Association. ADEA policy statements (as revised and approved by the 2008 ADEA House of Delegates). Part I, section B: ethics and professionalism. *J Dent Educ* 2008; 72(7): 813.
- Taibah SM. Dental professionalism and influencing factors: patients' perception. *Patient Prefer Adherence* 2018; 12: 1649–1658.
- Taibah SM. *The development of a guideline for teaching professionalism in dentistry in the Kingdom of Saudi Arabia*. Queen Mary: University of London; 2011.
- Brainard AH, Brislen HC. Viewpoint: learning professionalism: a view from the trenches. *Acad Med* 2007; 82(11): 1010–1014.
- Kao A, Lim M, Spevick J, Barzansky B. Teaching and evaluating students' professionalism in US medical schools, 2002–2003. *J Am Med Assoc* 2003; 290(9): 1151–1152.
- Thampy H, Gwynne C, Foulkes R, Codd R, Burling S. Teach professionalism. *Educ Prim Care* 2012; 23(4): 297–299.
- Shamim MS, Zubairi NA, Sayed MH, Gazzaz ZJ. Innovation in ethics and professionalism course: early experience with portfolio-workbook. *J Pakistan Med Assoc* 2016; 66(9): 1149–1153.
- Morihara SK, Jackson DS, Chun MB. Making the professionalism curriculum for undergraduate medical education more relevant. *Med Teach* 2013; 35(11): 908–914.
- Byszewski A, Hendelman W, McGuinty C, Moineau G. Wanted: role models—medical students' perceptions of professionalism. *BMC Med Educ* 2012; 12: 115.
- Omar H, Khan SA, Toh CG. Structured student-generated videos for first-year students at a dental school in Malaysia. *J Dent Educ* 2013; 77(5): 640–647.
- Brinkman WB, Geraghty SR, Lanphear BP, Khoury JC, Gonzalez del Rey JA, Dewitt TG, et al. Effect of multisource feedback on resident communication skills and professionalism: a randomized controlled trial. *Arch Pediatr Adolesc Med* 2007; 161(1): 44–49.
- Gershen JA, Handelman SL. Role-playing as an educational technique in dentistry. *J Dent Educ* 1974; 38(8): 451–455.
- Kearney M, Schuck S. Students in the director's seat: teaching and learning with student-generated video. In: Kommers P, Richards G, editors. *Proceedings of ED-MEDIA 2005—world conference on educational multimedia, Hypermedia & Telecommunications (pp. 2864–2871)*. Montreal, Canada: Association for the Advancement of Computing in Education (AACE); 2005. Retrieved November 5, 2020 from, <https://www.learntechlib.org/primary/p/20518/>.
- Prud'homme-Généreux A. Student-produced videos for the flipped classroom. *J Coll Sci Teach* 2016; 45(3): 58–62.
- Fargen KM, Drolet BC, Philibert I. Unprofessional behaviors among tomorrow's physicians: review of the literature with a focus on risk factors, temporal trends, and future directions. *Acad Med* 2016; 91(6): 858–864.
- Schwartz B, Bohay R. Can patients help teach professionalism and empathy to dental students? Adding patient videos to a lecture course. *J Dent Educ* 2012; 76(2): 174–184.
- Nestel D, Tierney T. Role-play for medical students learning about communication: guidelines for maximising benefits. *BMC Med Educ* 2007; 7: 3.
- Nair BT. Role play - an effective tool to teach communication skills in pediatrics to medical undergraduates. *J Educ Health Promot* 2019; 8: 18.
- Manzoor I, Mukhtar F, Hashmi NR. Medical students' perspective about role-plays as a teaching strategy in community medicine. *J Coll Physicians Surg Pak* 2012; 22(4): 222–225.
- Joyner B, Young L. Teaching medical students using role play: twelve tips for successful role plays. *Med Teach* 2006; 28(3): 225–229.
- Hottel TL, Hardigan PC. Improvement in the interpersonal communication skills of dental students. *J Dent Educ* 2005; 69(2): 281–284.
- Korpela I, Vaununmaa K, Tolvanen M, Suominen A, Freeman R, Lahti S. Dental students' and patients' perceived importance and knowledge of dental anxiety. *Eur J Dent Educ* 2019; 23(4): 515–521.
- Aldosari MA, Tavares MA, Matta-Machado ATG, Abreu M. Factors associated with patients' satisfaction in Brazilian dental primary health care. *PloS One* 2017; 12(11): e0187993.
- Balhaddad AA, Alshammari A, Alqadi A, Nazir MA. Patient satisfaction with dental services and associated factors in a Saudi dental institution. *J Clin Diagn Res* 2018; 12(12): ZC36–ZC39.
- Ayn C, Robinson L, Nason A, Lovas J. Determining recommendations for improvement of communication skills training in dental education: a scoping review. *J Dent Educ* 2017; 81(4): 479–488.
- Nazir MA, Al-Ansari, Al-Khalifa KS, Gaffar B, AlHumaid J. Use of student evaluation of teaching (SET) survey to evaluate effectiveness of teaching in a leadership course among dental 3 students over three years. *Sci World J* 2020; 2020: 6436102.
- Al-Saud LM. Learning style preferences of first-year dental students at King Saud University in Riyadh, Saudi Arabia: influence of gender and GPA. *J Dent Educ* 2013; 77(10): 1371–1378.
- Nazir MA, Al-Ansari A, Farooqi FA. Influence of gender, class year, academic performance and paternal socioeconomic status on learning style preferences among dental students. *J Clin Diagn Res* 2018; 12(6): ZC04–ZC08.
- Fleming N, Bonwell C, VARK. *A guide to learning styles*; 2006 <http://www.vark-learn.com>.

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