

# Teaching feedback skills to veterinary students by peer-assisted learning

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## ABSTRACT

Feedback is considered an essential element of effective learning. Students who receive feedback from peers can improve their clinical and communication skills. This paper aims to testify for whether peer-assisted learning (PAL) is successful in teaching students with the ability to give feedback. The study was design as tutors (n=20), tutees (n=20) and control group (n=20). Tutors were educated to provide constructive feedback, and this group trained tutees in PAL to increase their skills in providing feedback. After the training, tutors and tutees used role play about veterinarian-client consultation. At the end of the consultations, each tutee provided feedback to the tutor about his/her communication skills. As findings, there was a statistically significant change between the mean scores of both "tutor and control groups" ( $P<0.004$ ) and "tutors and tutees" ( $P<0.001$ ). However, there was no statistically significant difference in terms of the academic year and gender between groups. Tutees benefited from being trained by peers, and tutors also improved their feedback skills by training peers. Conspicuously, PAL was found to be effective for not only tutors but also tutees. With this argument, it is predicted that other veterinary fields can also benefit from PAL throughout veterinary training.

## Introduction

International organizations such as American Veterinary Medical Association (AVMA) and European Coordination Committee on Veterinary Training (ECCVT) have recognized the value of communication skills training in veterinary medicine (5, 15), and many veterinary schools have worked on training programs related to these skills (21, 40). According to the AVMA, communication skills are among those that new graduates should have, while the European Association of Establishments for Veterinary Education (EAEVE) states that these skills should be included in the undergraduate curriculum (5, 15). The development of communication in veterinarians has a positive effect on the animals that are their patients and on the humans who are their colleagues and clients (2).

Communication is a basic skill for healthcare providers, and effective communication is a core competency for patient or client satisfaction. Observing, listening, reinforcing and encouraging, questioning,

responding, and giving information are just some of the steps in effective communication (27), and special training methods such as problem-based, skills-based or scenario-based approaches and simulation-based practices with simulated or real clients are needed for improving communication skills (2). One of the core elements of teaching and learning communication skills is descriptive feedback. Feedback is considered an essential part of effective learning (36) and evaluation (25, 33), and providing feedback to people who need it is a strong contribution to one's own learning (8, 22, 33, 38). Providing well-intentioned, detailed, and descriptive feedback is one of the basic skills to be learned in clinical communication training (1), because veterinarians need to provide feedback to their colleagues and peers while practicing their profession; they also need to properly evaluate the feedback provided to them (14).

The purpose of effective feedback is to reveal the strengths and weaknesses in practices. Improving one's

ability to provide effective feedback depends on clinical skills, communication skills, and a predetermined task (25). Feedback is effective if it emphasizes the crucial and specific steps of performance in real time (33). It should be clear, focused on specific behaviors and tasks, given just in time, motivating, unbiased, objective, descriptive, supportive, appropriate in amount, goal-oriented, focused on the process, and not critical (20, 25, 30, 37). Verification and detailed explanation are among the most important features of effective feedback (41). Moreover, it should be understandable, meaningful, well-defined, accurate, encouraging, non-judgmental, respectful, appropriate in amount, proposing, and guiding on how one can improve oneself (33). To develop feedback skills, experience-based learning methods should be applied to learners (2). In providing feedback training, role play and veterinarian-client simulations have drawn scholarly attention (4). These practices provided to the student by simulated clients (SCs), peers, or trainers (4, 14). The opportunity for students to obtain feedback from teachers, coaches, or peers can improve their clinical and communication skills (46).

Feedback is generally a teacher-oriented process (22). It may be preferable to give student/peer-oriented feedback instead of teacher-oriented feedback to enable students to receive effective and accurate feedback regarding their practices during their vocational education. Many students are known to be satisfied when they receive feedback as a general approach (8). The message that is given in the effective feedback plays an active role in the learning process of the student (8, 22, 33, 38). Students who provide feedback improve their clinical skills, perform better at clinical practices and make fewer mistakes (46). When students do not receive any feedback about their performance, they do not have the chance to evaluate themselves (20).

In the literature, there are studies involving peer-assisted learning (PAL) in the process of providing feedback (17, 31, 39). Peer feedback is usually formative, aids in learning, and enhances motivation (14). PAL is a method in which people obtain help from their peers to develop knowledge or skills (32). The access of a student to information with the help or guidance of another student is based on experiencing that information. This training method has become widespread in many health sciences, including medicine (18, 23), dentistry (10), nursing (11), pharmacy (13), and veterinary medicine (12). In a more specific framework, PAL has been used for training in areas such as anatomy (3), surgery (12), clinical skills (6, 26), laboratory studies (45), and communication skills (42).

According to the Day One Competences of ECCVT pertaining to the skills that a newly graduated veterinarian should have, people are expected to interact with their peer

groups to increase their professional performances (15). PAL, which facilitates interaction between students, seems to contribute to professional teamwork that encourages successful cooperation within the same work environments (6). Furthermore, by using PAL, the learning activity can take place in a calmer environment, and students can ask questions more easily about topics they do not understand (23). The existence of programs such as communication education (University of Tennessee Peer-Assisted Communication Training (UT-PACT)) (42), role play applications (Peer Role Play (PRP)) (18), and scenario-based training (35) which focus solely on PAL, further highlights the importance of peer training.

Studies on feedback skills have been conducted within the scope of communication skills courses in medical education, of which Hacettepe University Faculty of Medicine is a pioneer in Türkiye. Within the scope of these studies, a guide (the *Providing Feedback Guide, in Turkish: Geribildirim Verme Rehberi*) that was prepared by Elçin et al. (16) has been used in training medical students, standardized patient programs, and the Training of Trainers courses organized at various times for academics at that medical school. But feedback training and PAL in the field of veterinary medicine in Türkiye is a nascent area of research. There is no assessment tool for feedback in veterinary medicine that has been adapted into Turkish and for which validity and reliability studies have been conducted. As of the beginning of 2021, no published study about PAL conducted with veterinary students in Türkiye could be found.

To draw attention to the deficiencies in this area, this study aims to improve the feedback skills of veterinary students through the PAL method. This study focuses on measuring the effectiveness of learning assisted by peers in developing veterinary students' feedback skills. Another goal is to investigate whether the students' academic year or gender have any impact on the acquisition of feedback skills via PAL. This study, which identifies the gap regarding feedback skills and PAL in the field of veterinary education, has been carried out to be a pioneer in this field and to form the basis for future studies.

## Materials and Method

**Study design:** This study was carried out at a single university with a small group of students as a preliminary study on training veterinary students to provide feedback by peer-assisted learning. The population of the overall study was drawn from students at Ankara University Faculty of Veterinary Medicine in the 2019–2020 academic year, with the sample comprising 60 volunteer students (19 male and 41 female). In the study, tutor (n = 20), control (n = 20) and tutee (n = 20) groups were formed. Each group had four students from each year from

first to fifth. Distribution of these students in the groups was based on the order in which volunteers applied.

The study was designed with a pre-test/post-test control group design. The working schedule of the tutors consisted of a pre-test, training, and post-test-1, while that of the control group consisted of a pre-test and post-test. Tutees' schedule consisted of a pre-test, post-test-1, training, and post-test-2.

First step of the study was designed to evaluate whether tutor students could gain the ability to give feedback from the client's perspective. For this purpose, a pre-test was applied to tutors. After the pre-tests, tutors received training on the feedback education of other students (tutees) using the PAL method. The training, which lasted four hours, included role play in veterinary medicine, examination of the scenarios used in the pre-test and post-test, the basis of the veterinarian-client-patient relationship, communication in veterinary consultation, basic communication skills for veterinarians, characteristics of effective feedback skills, and a roadmap on how to carry out peer-to-peer learning. As for educational material, basic theoretical knowledge on the above subjects was provided, and videos about communication skills in veterinary consultations and their feedback sessions were shown. Discussions about and evaluations of the videos were carried out, giving and receiving feedback exercises were practiced with the students, and the students gained experienced training one another. The students were given the opportunity to practice as much as they wanted in the communication room. In the training schedule, the above subjects, other than providing feedback, were practiced to avoid any problems during role play, but these subjects were not evaluated in the assessment of the students. During this phase of the effort, the control group did not receive any training, and after this step, post-tests were applied to all the students.

Second step of the study examined whether PAL could provide students with the ability to give effective feedback. All tutees took the pre-test and post-test-1. Before any intervention was undertaken with the tutees, the results of these two tests were examined to see if there were any differences. This analysis aimed to show whether there was a time-dependent difference between the pre-test and post-test-1 of the tutees. Immediately after post-test-1, the tutors trained the tutees using the PAL method. The training lasted four hours and included examinations of the scenarios used in the pre-test and post-test, the basis of the veterinarian-client-patient relationship, communication in veterinary consultation, and the characteristics of effective feedback skills. The participants were given the opportunity to practice with peers as much as they wanted. In the role plays, the tutors demonstrated their clinical communication skills as

veterinarians, while tutees acted as clients. The mission of the tutees was to give feedback to the tutors about their clinical communication from the client's perspective. After the training, all tutors and tutees completed post-test-2.

All pre-tests and post-tests were conducted between two students as role play. Two similar scenarios were prepared to be used in pre-test and post-test for all students. The scenarios were based on the clinical examination of a pet brought to a veterinary clinic. The scenarios did not include specific topics such as a difficult client, breaking bad news, end-of-life conversation, and so on. In the pre-test and post-test, depending on the scenario, when a tutor acted as a client, a tutee acted as a veterinarian. Role plays about clinical consultation took about 7–8 minutes. After the role play in each feedback session, the student who acted as a client gave 3–4 minutes of feedback to the student playing the veterinarian about the latter student's communication skills.

The role plays were held in a room with a two-way mirror on one wall. The researcher observed all role plays from the control room behind the mirrored wall for as long as those conversations continued. After each role play, participants were checked according to the Providing Feedback Guide (Table 1) (16) whose content validity was provided by expert opinion. This guide had to be used in this study since no other scale or measurement tool has been adapted to Turkish for use in veterinary medicine. Students successfully completing the skills from the guide received one point for each item.

**Table 1.** Providing Feedback Guide.

Items	Yes	No
1. Stated the behavior rather than focusing on individual characteristics.		
2. Focused on observations rather than deducing.		
3. Described the problem rather than judging.		
4. Preferred terms in the identification of the behavior such as frequent/seldom rather than using adjectives such as good/bad.		
5. Stated behavior related to a special condition.		
6. Shared information and facts with the other person rather than making suggestions.		
7. Explained the options to the student rather than answering/providing solutions.		
8. Answered the needs of the recipient.		
9. Gave an appropriate amount of feedback.		
10. Gave feedback at the appropriate time.		
11. Focused on what to say rather than why.		

As last step of the study, open-ended qualitative questions were posed to the students to learn their opinions on feedback and PAL. These questions covered whether the study met their expectations, how successful the student was in providing feedback, the advantages and disadvantages of the PAL method, and whether the student wanted to provide peer training later. In order to create a qualitative data set, answers were transcribed, and a thematic analysis was undertaken. The transcripts were coded by the author of this paper, and the coding was reviewed by an independent expert.

**Statistical analysis:** For the study, the descriptive statistics were presented as mean±standard deviation. Repeated measures ANOVA was used to determine the effect of pre-test and post-test (within factor), groups (between factor) and the interaction term of these factors.

In case of the detection of any statistically significant effect in the interaction terms, simple effect analysis was performed with Bonferroni correction as a post-hoc test. SPSS 14.01 (SPSS Inc., Chicago, IL) was used to perform all the statistical analyses.  $P < 0.05$  was considered statistically significant.

## Results

In the study, regardless of the groups (tutors, control group, and tutees), academic years, and gender of the participants, the researcher observed a statistically significant change between the mean pre-test and post-test scores ( $P < 0.001$ ,  $P < 0.001$ , and  $P < 0.001$ ) (Table 2 and Table 3). When the researcher separately evaluated the groups, the tutors and the tutees showed a statistically significant difference and there was no difference in the control group (Table 2 and Table 3).

**Table 2.** Results of the tutors and control group.

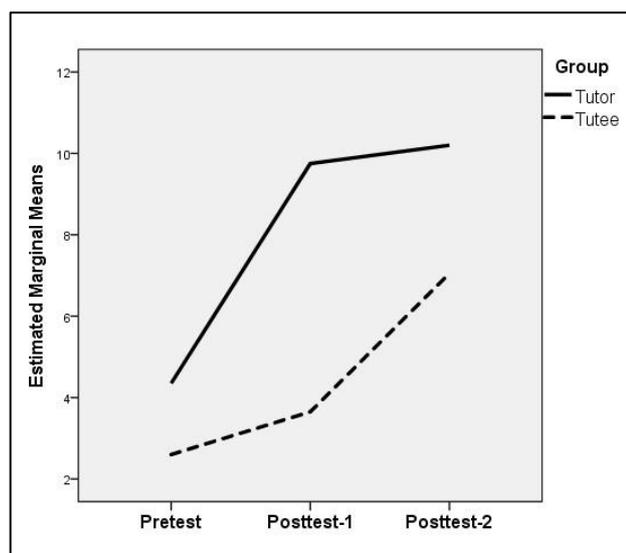
		Pre-test Score	Post-test Score	Estimated Marginal Means	Score	Group	Score-Group
<b>Group</b>	Tutors	2.35±0.43 <sup>b</sup>	7.95±0.41 <sup>a</sup>	5.15±0.37			
	Control	2.90±0.53 <sup>a</sup>	4.00±0.48 <sup>a</sup>	3.45±0.37	<0.001	<0.001	<0.001
Estimated Marginal Means		2.63±0.34	5.98±0.32				
<b>Academic Year</b>	First	3.50±0.80	5.75±0.65	4.63±0.68			
	Second	2.50±0.96	5.50±1.16	4.00±0.68			
	Third	1.75±0.70	6.25±0.98	4.00±0.68	<0.001	0.914	0.764
	Fourth	2.50±0.78	5.88±1.02	4.19±0.68			
	Fifth	2.88±0.55	6.50±1.27	4.69±0.68			
	Estimated Marginal Means		2.63±0.35	5.98±0.47			
<b>Gender</b>	Male	1.92±0.48	6.17±0.71	4.04±0.54			
	Female	2.93±0.43	5.89±0.57	4.11±0.36	<0.001	0.572	0.271
Estimated Marginal Means		2.42±0.37	6.03±0.49				

<sup>a,b</sup> Different lowercase letters indicate statistically significant difference among columns.

**Table 3.** Results of the tutors and tutees.

		Pre-test	Post-test-1	Post-test-2	Estimated Marginal Means	Score	Group	Score-Group
<b>Group</b>	Tutors	4.35±0.43 <sup>b</sup>	9.75±0.46 <sup>a</sup>	10.20±0.29 <sup>a</sup>	8.10±0.33			
	Tutees	2.60±0.50 <sup>b</sup>	3.65±0.51 <sup>b</sup>	7.05±0.48 <sup>a</sup>	4.43±0.33	<0.001	<0.001	<0.001
Estimated Marginal Means		3.48±0.33 <sup>c</sup>	6.70±3.42 <sup>b</sup>	8.63±0.281 <sup>a</sup>				
<b>Academic Year</b>	First	3.63±0.71	6.13±1.27	9.00±0.68	6.25±0.88			
	Second	2.88±0.58	6.38±1.51	9.25±0.75	6.17±0.88			
	Third	4.00±0.91	7.63±1.07	8.13±0.90	6.58±0.88	<0.001	0.983	0.308
	Fourth	4.00±1.09	5.88±1.52	7.75±1.18	5.88±0.88			
	Fifth	2.88±0.69	7.50±1.45	9.00±0.68	6.46±0.88			
Estimated Marginal Means		3.48±0.36 <sup>c</sup>	6.70±0.62 <sup>b</sup>	8.63±0.38 <sup>c</sup>				
<b>Gender</b>	Male	2.71±0.49	6.50±1.03	8.50±0.70	5.91±0.64	<0.001	0.486	0.512
	Female	3.88±0.47	6.81±0.74	8.69±0.45	6.46±0.47			
Estimated Marginal Means		3.30±0.36 <sup>c</sup>	6.66±0.63 <sup>b</sup>	8.60±0.40 <sup>a</sup>				

<sup>a,b,c</sup> Different lowercase letters indicate statistically significant difference among columns.



**Figure 1.** The contribution of PAL to the tutors and the tutees.

Regardless of the effect of repetition, there was a statistically significant change between the mean scores of both “tutor and control groups” ( $P < 0.004$ ) and “tutors and tutees” ( $P < 0.001$ ) (Figure 1). There was no statistically significant difference in terms of the academic year and gender between both “tutors and control group” ( $P = 0.914$  and  $P = 0.572$ ) and “tutors and tutees” ( $P = 0.983$  and  $P = 0.486$ ) (Table 2 and 3).

The frequency of the responses of the students to each skill in the Providing Feedback Guide was analyzed. In the pre-tests, the skills on which most students did not show were the fourth ( $n = 60$ ) and seventh ( $n = 58$ ) of the guide, while the skills on which the most students did show were the second ( $n = 40$ ) and first ( $n = 35$ ). In the post-tests, the skills on which most students did not perform were again the fourth ( $n = 45$ ) and seventh ( $n = 38$ ), while the skills on which most students performed were the second ( $n = 58$ ) and first ( $n = 57$ ) skills of the guide.

All tutors who gained the ability to give feedback volunteered to provide PAL by stating that they wanted to continue working. Some of the qualitative data collected from the students at the end of the study are reported below.

One student who acted as a client stated difficulty of feedback that, “It was difficult to give feedback to others, but I felt it was useful for someone.” Some students’ opinions on how successful they were in providing feedback follow.

“I had never given feedback before, so I do not know whether I was successful or not.”

“I think I gave him effective feedback. I focused on the highlights I learned in the training.”

“While I was giving feedback, I constantly envisioned that veterinary-client consultation. Thus, I focused on giving accurate feedback.”

“Trying to give feedback was tiring me.”

One tutee noted one of the strengths of the PAL that “A senior student trained me. We became friends after training.”

Another stated the following: “I also want to teach other students. Can I join any further studies?”

A tutor student mentioned that “The study was exactly as I expected. It was enjoyable to interact with friends, to teach them something.”

One tutee stated that “It was comfortable to have a role play with a person I met before.” and “It relieved my tension that the person who showed my mistakes was not a teacher.”

## Discussion and Conclusion

The statistically positive change between the pre-test and post-test scores of the tutors over time (Table 2) can be evaluated as the result of the training this group received. Although the students in the control group did not receive training, an increase, which was not statistically significant, was also observed between their pre-test and post-test scores. This increase may be an effect of repetition because of their exposure to the same skills a second time to facilitate their ability to give feedback. The increase in the scores of tutors was greater than that of the control group. This result confirms the hypothesis that the efficiency of the training is responsible for the positive change in the scores of the tutors.

The researcher evaluated the enthusiasm of all students with regard to whether they viewed providing tutoring as one of the advantages of the study. The findings indicate that tutors will be capable of participating voluntarily in future studies. According to similar results of the one study (6), many students wanted to provide peer training voluntarily.

In the second step of the study, there was an overall positive change over time between the pre-test and post-test scores of both the tutors and tutees (Table 3, Figure 1). However, as Figure 1 shows, in spite of the increases in both groups after training, the changes in the scores of the tutees were more remarkable than those of the tutors. This is an indication that PAL can help students to enhance their skills in providing feedback. Furthermore, the post-test-1 and post-test-2 scores of the tutors were analyzed, and it was seen that the tutors had developed themselves after offering training in PAL to the tutees. Tutors who provide training advance themselves as well; therefore, providing training can also be instructive. According to the results of this study, the student in the tutoring position benefits from the training as much as the tutee does. Many researchers have reported similar results, indicating that PAL provides benefits for tutors and tutees (6, 7, 24, 32). Being a tutor seems to improve communication skills, contribute to teaching skills (6, 7, 28, 32, 43), and even

support the ability to give feedback (43). There is evidence in the literature that giving peer feedback is a skill that can be learned and can be upgraded over time (14). It may be beneficial for students to learn from peers through small group trainings, especially in veterinary schools where the ratio of the academic staff (educators) to students is limited and particularly in areas such as laboratories, clinical practices, and communication education.

In the literature, two students who are in the same class are called peers or true peers, and students in different classes are referred to as near-peers (7, 9). The peers in this study included both students in the same classes and those in different classes. The difference between peers and near-peers has been ignored in this study, which may be a limitation. However, one of the results of this study is that the academic year does not affect peer training, so the difference that is being ignored is not considered to be a disadvantage. Nevertheless, the researcher predicts that comparative analysis of peer-assisted and near-peer-assisted learning in future studies will contribute to the literature of the field.

It has been reported that most students preferred to receive feedback from peers as SCs (instead of real actors) (42). The qualitative data in the present study support the view that some students tend to be comfortable when role playing and receiving feedback from peers. In one such study in the literature (42), students reported the feedback from their peers who participated as SCs as being one of the strengths of the training. It has been reported that peers can be effective feedback sources (20).

According to a frequency assessment of the items in the Providing Feedback Guide, most students showed the ability to observe behaviors while giving feedback (see items 1 and 2). Related literature (20, 30, 36, 37) has also reported that effective feedback should focus on specific behaviors and tasks. The findings presented here are in accord with earlier findings in the literature. In addition, while giving feedback, most students could not identify the behavior requested in item 4 and could not explain the options about what should be done (item 7). This may be due to the fact that these items required more complex verbal communication skills to express and greater experience to assess the behaviors of peers in role play.

When the effect of the academic year and gender on PAL is evaluated, it is seen that the individual positive change in the scores of the tutors in each class (academic year) during the post-tests is remarkable. However, not enough information is available to reveal which class was the most successful in giving feedback. Revealing the effect of the academic year will require conducting comprehensive studies in the future, and this area is open to research. The fact that changes in the academic year and gender groups in tutees were not statistically significant shows that all participants were affected similarly by PAL

(Table 3). This tends to be an advantage of incorporating peers into the training. It can be said that the use of PAL in this study led students to succeed, regardless of gender. While researchers in various studies in the communications field have emphasized that females generally perform better than males (19, 29, 34, 39); in a national study (44) conducted with male and female veterinary students, no gender difference was revealed in students' self-evaluation of their communication skills. Similarly, the gender results in the present study differ from the global trend in the communication literature.

As a consequence, it can be argued that all groups benefited from the feedback training. Tutees benefited from being trained by peers (tutors), and tutors also improved by training others. In other words, both tutors and tutees had the opportunity to improve themselves and increase their feedback skill levels due to teaching. In the study, which aimed to equip the students with the ability to give feedback with PAL, peer training proved to be effective for both tutors and tutees. Neither the academic year nor the gender of the students changed the effectiveness of this training. Within the framework of this research, the researcher recommends examining whether PAL is effective in gaining other skills in communication (effective listening, taking a medical history, giving bad news, coping with difficult clients) in future studies.

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### Conflict of Interest

The author declared that there is no conflict of interest.

### Data Availability Statement

The data supporting this study's findings are available from the corresponding author upon reasonable request.

### Ethical Statement

This study was approved by the Ethics Committee of Ankara University (Date: 24.09.2019; Number: 16/260).

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