ORIGINAL ARTICLE

ANATOMY PRACTICAL LEARNING: OPINIONS OF MEDICAL FACULTY YEAR 2 STUDENTS ABOUT ANATOMY PRACTICAL COURSE

Anatomi Pratik Öğrenimi: Tıp Fakültesi 2. Sınıf Öğrencilerinin Anatomi Pratik Dersi Hakkındaki Görüşleri

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ABSTRACT

Objective: With the development of technology, anatomy teaching methods are also updated. In this direction, different methods are applied in practical courses. It is foreseen that anatomy lessons will be more useful and laboratory lessons will be active and efficient. Transferring their thoughts and experiences positively or negatively during the education process can motivate the student. We aim to evaluate the thoughts and suggestions of the students with the survey study.

Material and Methods: A study was conducted for the practical anatomy education of Ordu University Faculty of Medicine Term II students during the 2022-2023 academic year. A questionnaire study was organised to learn the student's perspective on the practice. A total of 12 questions were asked in the questionnaire. One of these questions was open-ended and the others were multiple choice questions. Except for the open-ended question, the other questions had to be answered. The survey questions were prepared from Google Forms application. The questionnaire prepared in this application was delivered to the students via a link on the social platform.

Results: In the questionnaire, students were asked the question 'Which of the auxiliary resources do you mostly use?' The rate of tablet use was high in both genders. The expected frequency for male students to answer 'Textbook' in this question is 1,7. There was no difference between the answers given to this question in the whole population (p>0,05). In the questionnaire, the students were asked the question 'Do you find the question-answer (mini-exam) technique useful while teaching the laboratory course?' The expected frequency of 'yes' answer is 12,8. There is no difference between the answers given to the this question in the whole population (p>0,05).

Conclusion: In conclusion, in this study, students were asked multidimensional questions related to the anatomy course. Positive and negative answers were received and evaluated. According to the results of the study, the inclusion of technology in every stage of the course shows that the anatomy course can be taught more efficiently.

Keywords: *Survey, Anatomy, Medical School, Practical Lesson*

ÖZET

Amaç: Teknolojinin gelişmesi ile anatomi ders işleyiş şekilleri de güncellenmektedir. Bu doğrultuda pratik derslerde farklı yöntemler uygulanmaktadır. Anatomi derslerinin daha faydalı olması, laboratuvar derslerinin aktif ve verimli geçmesi öngörülmektedir. Eğitim sürecinde düşüncelerini, deneyimlerini olumlu veya olumsuz bir şekilde aktarmak öğrenciyi motive edebilmektedir. Yapılan anket çalışması ile öğrencilerin düşünce ve önerilerini değerlendirmeyi amaçlamaktayız.

Gereç ve Yöntemler: 2022-2023 eğitim öğretim süresi boyunca Ordu Üniversitesi Tıp Fakültesi Dönem II öğrencilerinin pratik anatomi eğitimine yönelik bir çalışma yapıldı. Öğrencinin yapılan uygulamaya bakış açısını öğrenmek için bir anket çalışması düzenlendi. Ankette toplam 12 soru soruldu. Bu sorulardan biri açık uçlu, diğerleri ise çoktan seçmeli sorulardır. Açık uçlu soru haricinde diğer sorular cevaplama zorunluluğu taşımaktadır. Anket soruları Google Formlar uygulamasından hazırlandı. Bu uygulamada hazırlanan anket, öğrencilere sosyal platform üzerinden link aracılığıyla ulaştırıldı.

Bulgular: Ankette, öğrencilere 'Derse yardımcı kaynaklardan hangilerini çoğunlukla kullanıyorsunuz?' şeklinde soru yöneltildi. Tablet kullanma oranı her iki cinsiyette de yüksekti. Erkek öğrencilerin bu soruda 'Ders kitabı' cevabına beklenen frekans 1,7'dir. Tüm evrende bu soruya verilen yanıtlar arasında fark yoktur (p>0,05). Ankette öğrencilere 'Laboratuvar dersi anlatılırken soru-cevap (mini sınav) tekniğini faydalı buluyor musunuz?' şeklinde soru yöneltildi. Erkek öğrencilerin cevapları değerlendirildi. 'Evet' cevabına beklenen frekans 12,8'dir. Tüm evrende bu soruya verilen yanıtlar arasında fark yoktur (p>0,05).

Sonuç: Sonuç olarak, bu çalışmada öğrencilere anatomi dersiyle ilişkili çok yönlü sorular soruldu. Olumlu ve olumsuz cevaplar alındı ve değerlendirildi. Çalışmadaki sonuçlara göre teknoloji dersin her aşamasına dahil edilmesi anatomi dersinin daha verimli işlenebileceğini göstermektedir.

Anahtar Kelimeler: *Anket; Anatomi; Tıp Fakültesi; Pratik Ders*

INTRODUCTION

Anatomy is one of the basic disciplines of medical education. It is the oldest medical science that gives a lot of information about the human body. Anatomy analyses the structure, functions, position and normal shape of the human body (1).

Anatomy is one of the important courses included in all semester education programmes of basic sciences (2). Recently, there have been many changes in medical education. When we look at the changes, it is observed that there is a shift from instructor-centred approaches to student-centred approaches; from traditional lectures to experience-based methods; from standard fixed programmes to flexible programmes (3).

These changes have gained a new dimension with the development of technology and the diversification of instructional materials (4).

Factors such as transferring knowledge to the student, technical problems in practical education, and the long duration of the education process have led to changes in medical education. These changes are realised in parallel with technology (5). In addition to these changes based on the system, improving the characteristics of the education programme is an issue brought to the agenda by many medical faculties (6). Generally, anatomy courses are given as theoretical and practical in the first years. Practical courses are as important as theoretical courses (7). In practical courses, students examine anatomical structures in three dimensions by using models and cadavers. Thanks to practical courses, students' ability to solve clinical skills improves (8).

One of the problems observed in anatomy courses is that the number of students is higher than normal. In order to solve this problem, practical courses are taught with small groups of students. In this way, students' interest in anatomy course increased (9).

Students' opinions about theoretical and practical lessons are important. Student-centred study is required. Education programmes and learning environment should be arranged to facilitate learning. Feedback should be received from students at certain intervals. In this way, it is aimed to improve the education and training process (10).

Another factor to improve the process is the establishment of healthy communication between the lecturer and the student. Education methods should be reviewed at certain times. This is important in terms of efficient teaching (11).

In any branch of education, students want to see themselves as an individual. Students want to transfer their thoughts and experiences in a positive or negative way during the education process. Contributing in this way motivates the student (12).

Student feedback is a widely used method in modern education system. It is gaining relevance day by day (13). This study aims to make laboratory courses more efficient, to update anatomy by adapting it to technology, to provide more efficient results in practical courses with innovations, and to evaluate students' thoughts and suggestions.

MATERIAL AND METHODS

A study was conducted for the practical anatomy courses of Ordu University Faculty of Medicine Term II students during the 2022-2023 academic year. Approval was obtained from Ordu University Faculty of Medicine Clinical Research Ethics Committee for the survey (2023/144).

Volunteers among the students who regularly attended the lessons and were not absent were included in the survey. This study aimed to make each practical lesson more efficient. Looking at the study; photographs of the models related to the practical course to be taught were taken via tablet. One of the term II students was assigned to take the photographs. The anatomical structures present in the picture were written. This application was made for each practical lesson in each board and the edited pictures were converted into pdf files. These pdf files were delivered to the students every lesson. An alternative method was created for students to prepare for the practical exam. A survey was organized to find out the student's perspective on the practice. In May 2022-2023 academic year, Ordu University Faculty of Medicine Term II students were surveyed.

A total of 12 questions were asked in the survey. These questions are multiple-choice questions. It is compulsory to answer multiple-choice questions. The survey questions were prepared from Google Forms application. The questionnaire was delivered to the students via the social platform via the link.

The questions in the questionnaire evaluate the place of theoretical and practical courses in anatomy, the adequacy of the course hours, the efficiency of the resources to be used in the anatomy course, the lecturer's course operation, the effect of the mini-exam technique applied at the end of the practical course, and the usefulness of the pictures in pdf format.

A total of 52 people, 34 women and 18 men, participated in the survey. In order to make the survey feedback more reliable, the names of the students were not taken. Only their gender was learnt. Before sending the survey link, students were informed about the purpose of the study.

Statistical Analysis

IBM SPSS 26 (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp) was used for statistical analysis. Demographic data were given as numbers (percentages). Frequency analysis was evaluated by chi-square test. Fisher's Exact Test (minimum expected value <5) was applied in the frequency analysis of the survey questions according to gender. The questions with the highest and lowest scores were shown in the frequency distribution graph according to gender. In the study, $\alpha=0,05$ and $p<\alpha$ were considered significant.

RESULTS

A total of 52 participants, 34 (65.38%) women and 18 (34.62%) men, were included in the study. Although the answer choices of each question were different, 12 questions were directed to the participants. One question was prepared as open-ended and the opinions of the participants were learnt. The statistical data of the survey results are shown in Table 1 and Table 2. In the questionnaire, the students were asked the question 'Which of the auxiliary resources do you mostly use?' The expected frequency for the answer 'textbook' is 1,7. There is no difference between the answers given to this question in the whole population ($p>0,05$). The distribution of the answers to this question is shown in Figure 1. In the questionnaire, the students were asked the question 'Do you find the question-answer (mini- exam) technique useful while teaching the laboratory course?' The expected frequency of 'yes' answer is 12,8. There is no difference between the answers given to this question in the whole population ($p>0,05$). The distribution of the answers to this question is shown in Figure 2.

DISCUSSION

Anatomy has an important place in medical education. The structure and functions of organs should be known in order to diagnose and follow up the disease (14). In the study conducted by Arı et al. 62.4% of the students think that anatomy is important for medicine (15). At the same time, in the study conducted by Özcan et al. 71.8% of the students did not consider anatomy education in the Faculty of Medicine as a waste of time (16). Our questionnaire study is in parallel with the literature. Positive feedback was received from the students about the anatomy course. Based on this fact, it is concluded that anatomy course is also important for students. Studies have been conducted on the adequacy of anatomy practical course hours. More than 50% of the students find the course hours sufficient. However, there are also contrary results in the literatüre (17, 18). In the study we conducted with semester two students of the Faculty of Medicine, the question "Do you find the laboratory course hours sufficient for studying?" was asked. 44% of the girls answered yes and 55% of the boys answered yes.

In some medical faculties, anatomy course hours are insufficient. Extra-curricular anatomy education has been given for this. Herling et al. established a non-compulsory training camp in DeBusk College of Osteopathic Medicine (19). Pais et al. gave an optional cadaver dissection course. At the end of the course, student satisfaction and increased anatomy knowledge were obtained (20). In Uludağ University Faculty of Medicine, 68% of the students found it useful to have a mini oral examination at the end of the practical course (21). In our study, the students were asked the question "Do you find the question-answer (mini-exam) technique useful during the laboratory course?" 61% of the girls and 88% of the boys answered the question as "We found it useful". The results obtained in both studies show parallelism. Interactive methods can make anatomy lessons more efficient (22). In our study, it was aimed to make anatomy practical lessons more efficient. A picture of each model related to the lesson was taken with a tablet.

Table 1. Statistical data of the survey results (First 6 questions)

Survey Questions		Female	Male	Sig. (p)
	Theory	1 (2.9%)	2 (11.1%)	
Do you find theoretical anatomy				0.578
lessons or practical anatomy	Practical	13 (38.2%)	6 (33.3%)	Fischer's Exact
lessons more useful?				
	Both	20 (58.8%)	10 (55.6%)	Test
	Yes	23 (67.6%)	9 (50%)	0.306
Are you happy to	No	3 (8.8%)	4 (22.2%)	Fischer's Exact
attend laboratory classes?				
	Undecided	8 (23.5%)	4 (22.2%)	Test
Do you find laboratory class hours sufficient for studying?	Enough	15 (44.1%)	10 (55.6%)	0.562
	Less than necessary	19 (55.9%)	8 (44.4%)	Fischer's Exact Test
	Atlas	3 (8.8%)[a]	2 (11.1%)[a]	
	Tablet	25 (73.5%)[a]	9 (50%)[a]	0.100
Which teaching aids do you	Telephone	1 (2.9%)[a]	2 (11.1%)[a]	Fischer's Exact
use most of the time?				
	Textbook	1 (2.9%)[a]	4 (22.2%)[b]	Test
	Other	4 (11.1%)[a]	1 (5.6%)[a]	
	Yes	26 (76.5%)	12 (66.7%)	
Do you feel motivated to attend				0.714
anatomy classes with	No	4 (11.8%)	3 (16.7%)	Fischer's Exact
technological tools?				
	Undecided	4 (11.8%)	3 (16.7%)	Test
Is individual work or group work more effective in laboratory lessons?	Individual	5 (14.7%)	4 (22.2%)	0.702
	Group work	29 (85.3%)	14 (77.8%)	Fischer's Exact Test

The difference between expected and observed frequencies according to gender in the questionnaire parameters was evaluated by Chi-Square test. The same letters indicate the same group and different letters indicate different groups.

Bozok Tıp Derg 2023;14(1):1-8
Bozok Med J 2023;14(1):1-8

Table 2. Statistical data of the survey results (Second 6 questions)

Survey Questions		Female	Male	Sig. (p)
Do you find the lecturing of the instructor useful in laboratory courses?	Yes No	27 (79.4%) 2 (5.9%)	14 (77.8%) 3 (16.7%)	0.376 Fischer's Exact Test
Can you see all the structures shown on the model during the lesson?	I can see Some of them	4 (11.8%) 30 (88.2%)	2 (11.1%) 16 (88.9%)	1.000 Fischer's Exact Test
Do you find the question-answer (mini-exam) technique useful during the laboratory course?	Yes No Undecided	21 (61.8%)[a] 6 (17.6%)[a] 7 (20.6%)[a]	16 (88.9%)[b] 1 (5.6%)[a] 1 (5.6%)[a]	0.155 Fischer's Exact Test
Did photographing the models via tablet and showing the formations on them increase the efficiency of the lesson?	Yes No	34 (100%) 0 (0%)	18 (100%) 0 (0%)	
Did our adaptation of anatomy to technology increase the desire to study?	Increased No change Undecided	32 (94.1%) 1 (2.9%) 1 (2.9%)	18 (100%) 0 (0%) 0 (0%)	1.000 Fischer's Exact Test
Each model related to the lesson was photographed with a tablet. The structures visible on the picture were written. This resource was converted into pdf format and sent to the students for their studies. Did our current study make the models more understandable?	Yes No	34 (100%) 0 (0%)	4 (22.2%) 14 (77.8%)	(18%) 0 (0%)

The difference between expected and observed frequencies according to gender in the questionnaire parameters was evaluated by Chi-Square test. The same letters indicate the same group and different letters indicate different groups.

Bozok Tıp Derg 2023;14(1):1-8
Bozok Med J 2023;14(1):1-8

Figure 1. Column graph for the question 'Which of the auxiliary resources do you mostly use?'

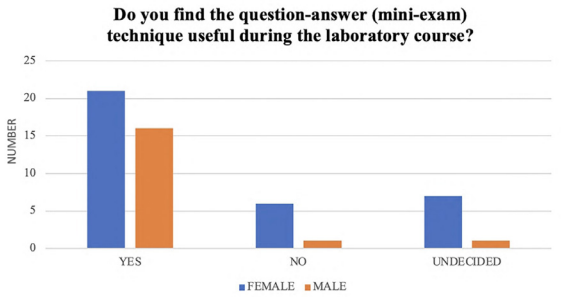
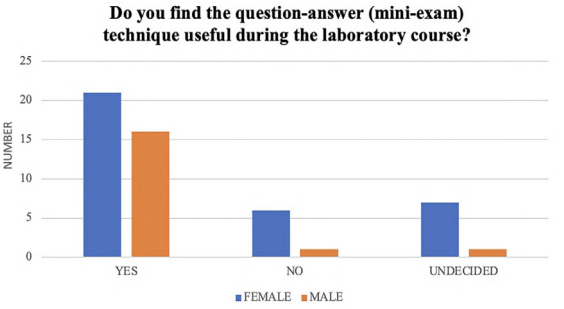


Figure 2. Column graph for the question 'Do you find the question-answer (mini-exam) technique useful while teaching the laboratory course?'



The names of the anatomical structures seen in the picture were written on the tablet. It was concluded that the students thought positively about this application. Firat University Faculty of Medicine also implemented interactive study examples and received positive feedback from the students (23).

Technology has brought great innovations not only in the field of industry but also in the field of education. As a result of these innovations, students were asked questions based on internalizing anatomy education with technology. Students installed anatomy program software on their mobile phones, tablets and computers. It was thought that this application would contribute to anatomy education. Positive feedback was received from the students (24). Students have instant access to online resources. In this context, the student becomes more interested in the lesson. The student's learning style improves (25). The students were asked the question "Did adapting anatomy to technology increase the desire to study?". 94% of the girls and 100% of the boys answered 'our desire to study increased'. The results obtained are parallel.

The variety of materials used in anatomy courses has increased with technology. Computer aided education methods started to be preferred. 3D anatomy atlases, virtual cadaver dissections are among the computer aided education methods. These methods increased the student's interest in the anatomy course. When computer assisted education methods and traditional education methods are compared, advantages and disadvantages emerge. In a study conducted with Gazi University Faculty of Medicine semester two students, 61.7% of the students stated that they were satisfied with the theoretical anatomy course and 72.2% with the practical anatomy course (10). Magee stated that practical anatomy courses should be increased. As a result, anatomy courses will become more active (27). In our study, term two students were asked the question "Do you find theoretical anatomy courses or practical anatomy courses more useful?". 58.8% of female students answered both and 38.2% answered practical courses. Of the male students, 55.6% answered both and 33.3% answered practical courses. The results of both studies show parallelism.

The way the lecturers teach the course is important. It is effective in the student's understanding of the subject. In this study, an effect of 91.6% was found (23). In the study of Sindel et al. this rate was 49.6% for semester one students and 78.1% for semester two students (28). In our study, semester two students were asked the question "Do you find the lecturing of the instructor useful in laboratory courses?". 79.4% of female students and 77.8% of male students answered yes. The results obtained are parallel.

CONCLUSION

In conclusion, in this study, students were asked multidimensional questions related to the anatomy course. Positive and negative answers were obtained and possible variables were analyzed. Anatomy education is a science that is open to innovations and continuously functioning. Receiving student feedback is important in terms of both maximizing

anatomy education and making bilateral interaction more efficient. Considering the common results of the studies, all opportunities including technology should be actively used for more efficient, continuous and interesting anatomy education.

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