

Attitudes of Turkish Veterinary Educators to Problem-Based Learning

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Abstract: The objective of this study was to determine the attitude of veterinary educators to problem-based learning and to examine influential parameters. In this study, veterinary educators from the Ankara, Uludag, Selcuk, Harran and Ondokuz Mayıs Veterinary Schools were surveyed. Data were collected from 254 educators by a paper questionnaire. The participants showed intermediate level positive attitude to problem-based learning. In conclusion, it can be said that veterinary educators in Turkey are sensitive to problem-based learning at an intermediate level and that differences in influential factors do not affect the level of sensitivity significantly ($p < 0.05$).

Key words: Problem-based learning, veterinary educators, veterinary medicine, attitude, intermediate, Turkey

INTRODUCTION

Problem-Based Learning (PBL) generally refers to the whole set of different attitudes to education and learning. Although, the term does not define a specific education method, it identifies the active learning process of students when solving a problem (Summerlee, 1997). In the PBL method, the cases the students come across with starting from the 1st day of implementation make them feel that they have faced a real problem and need to learn the required knowledge to solve it. Owing to the intriguing nature of the problem, the student acquires an internal motivation and experiences the process of self-directed learning. PBL requires the student to use a wealth of information sources (Bauer and Ogilvie, 1996; Dolmans *et al.*, 2005).

PBL was 1st used in medical education curricula in the 1950s. Later in the 1960s, it was implemented at the Brown, McMaster and New Mexico Universities in the United States of America (USA) and at the Maastricht University in the Netherlands (Summerlee, 1997). In 1991, it was determined that >100 medical schools had incorporated PBL either partly or fully into their curricula.

It was observed that while certain faculties combined PBL with their traditional curricula, some other faculties used PBL in parallel with traditional education (Bauer and Ogilvie, 1996).

Various techniques are used in veterinary education all over the world (Edmondson, 2001; Pickrell *et al.*, 2002; Powell and Steel, 2003; Davis, 2003). PBL has triggered a major, complex and widespread change in educational practice within higher education, particularly in professional education (Dolmans *et al.*, 2005). PBL has been adopted in educational programs in a variety of disciplines including veterinary medicine (Bauer and Ogilvie, 1996; Lane, 2008; Newman, 2005).

Problem-based learning has been incorporated into the veterinary curricula of universities such as the University of Queensland in Australia (Rand and Baglioni Jr., 1997) and Colorado state, University College of Veterinary Medicine and Biomedical Sciences in the USA (Grauer *et al.*, 2008). Previous studies on the use of PBL in veterinary education are available (Bauer and Ogilvie, 1996; Edmondson, 2001; Farnsworth, 1997; Schoenfeld-Tacher *et al.*, 2005). Among Turkish veterinary schools, Uludag University, Faculty of

Veterinary Medicine was to incorporate into the curriculum, an educational programme similar to problem based learning. Since 2008, Ondokuz Mayıs University, Faculty of Veterinary Medicine partly implements problem-based learning together with traditional education firstly.

In Turkey to the knowledge, a comprehensive scientific study on the attitudes of Turkish veterinary educators to PBL has not been performed before. This study was aimed at determining the attitude of veterinary educators to problem-based learning.

MATERIALS AND METHODS

The present study was conducted on educators appointed at the Ankara Veterinary School (AVS), Uludag Veterinary School (UVS), Selcuk Veterinary School (SVS), Harran Veterinary School (HVS) and Ondokuz Mayıs Veterinary School (OMVS) (Fig. 1). The technique described by Krejcie and Morgan (1970) was used in the selection of the samples.

Accordingly, the sample size of the study was determined as 254 educators out of the total number of academic staff (467). Proportional stratified sampling was used to determine the number of samples needed for each school. The samples were selected using systematic random sampling and data were collected from personally interviewed 254 participants by a paper questionnaire.

A questionnaire^a was designed to determine the attitudes of the participants to PBL. The questionnaire was composed of 2 sections. Demographic information was collected in the 1st section. Seven items including independent variables such as gender, high school of graduation, academic title, schools of employment, administrative duties, term of employment and department of study were asked to all participants in the 1st section.

An attitude set for problem-based learning which included 38 items in total was represented in the 2nd section. A 5 point Likert scale was used for the 2nd section. Cronbach's alpha ($\alpha = 0.90$) of the scale revealed a high degree of internal consistency. After pre-tested by

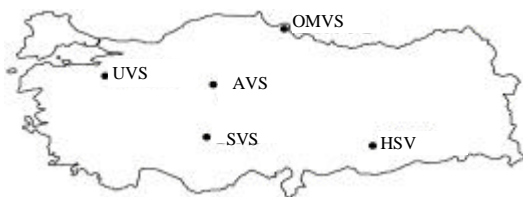


Fig. 1: The veterinary schools included in the survey

ten educators, the survey was administered to the participants between June 2008 to February 2009 and data were collected via the questionnaire. Frequencies were used for demographic analyses. A mean score was calculated for PBL from all the 38 items.

Positive items were scored from 5 for strongly agree through 1 for strongly disagree with neutral in the middle of the scale scored as 3. SPSS Version 15.0 for windows was used and p values were calculated for all statistical analyses (those <0.05 were considered significant).

RESULTS AND DISCUSSION

The demographic values of the independent variables such as term of employment, age, gender, high school of graduation, academic title, schools of employment, administrative duties and department of study were determined in the study.

The arithmetic mean and standard deviation of the PBL attitude values of the sample were determined as 111.03 and 12.18, respectively. For this purpose, standard deviation scores were both subtracted from and added to the arithmetic mean scores of PBL attitude levels, thereby enabling the definition of low, intermediate and high level groups. Accordingly, the group with scores of ≤ 98 was defined as the low level group, the group with scores ranging from 99-123 was defined as the intermediate level group and the group with scores of ≥ 124 was defined as the high level group. The PBL attitude levels of the individuals who participated in this study were determined to be intermediate.

The paper questionnaire was answered by 167 male and 87 female academicians. Of the participants, 27.6% held a professor title, 20.5% an associate professor title, 24.8% an assistant professor title and 14.2%, a doctor of science degree. Detailed information on the independent variables of the participants are shown in Table 1.

Although, the PBL attitude levels of the participants in the present study belonged to the intermediate level group, the demographic subgroups did not statistically differ from each other for PBL attitude.

Researches conducted on veterinary education in Turkey (Gul *et al.*, 2008; Dincer, 1991; Gurler, 2007; Osmanagaoglu *et al.*, 2009; Ozen *et al.*, 2004a; Ozen and Ozen, 2006) and attitudes of Turkish veterinarians to different subjects (Ozen *et al.*, 2004b, 2009; Ozen and Ozen, 2010; Yerlikaya *et al.*, 2004) are available. However, a comprehensive scientific study on the attitudes of Turkish veterinary educators to problem based learning has not been conducted before. Therefore, it can be said that this is the 1st study on the attitude of veterinary

Table 1: Distribution of independent variables and PBL attitude values (mean values) for groups of variables

Variables	N	Percentage	PBL-AV	p-value
Gender				
Male	167	65.7	111.03	>0.05
Female	87	34.3	111.05	
University				
UVS	70	27.6	112.32	>0.05
OMVS	61	24.0	111.75	
HVS	24	9.4	105.58	
AVS	48	18.9	113.37	
SVS	51	20.1	108.78	
Academic title				
Professor	70	27.6	111.88	>0.05
Associate professor	52	20.5	111.75	
Assistant professor	63	24.8	110.57	
Dr	36	14.2	109.41	
Research assistant	31	12.2	110.90	
Lecturer	2	0.8	109.00	
Administrative duties				
Yes	37	14.6	113.91	>0.05
No	217	85.4	110.54	
Term of employment				
<1 year	18	7.1	111.33	>0.05
1-5 years	72	28.3	109.25	
6-10 years	37	14.6	111.94	
11-15 years	42	16.5	109.38	
>16 years	85	33.5	112.91	
Department				
Basic sciences	62	24.4	112.20	>0.05
Clinical sciences	137	53.9	111.31	
Zootechnics and animal nutrition	55	21.7	109.03	

PBL-AV: PBL Attitude Values; p: significance (reflects the difference between the PBL sensitivity values given in the same column; <0.05)

educators to PBL in Turkey. The results of this study demonstrated that Turkish veterinary educators show a positive (intermediate level) attitude to PBL. Similarly, Bauer and Ogilvie (1996) reported the belief of tutors in the benefit of PBL for students and pointed out to the fact that all tutors either agreed or strongly agreed with the continued use of PBL.

The accreditation procedure set up by the European Association of Establishments for Veterinary Education (EAEVE) emphasizes the significance of methods of acquiring, documenting and analysing scientific and technical data for education and includes the use of new techniques such as problem-based learning and interactive computer-assisted learning (Anonymous, 2009). Although, statistically insignificant the relatively high levels of attitude determined at the ASV and USV may be related to the outcome of accreditation efforts. As a matter of fact both of these schools have been accredited in Turkey.

Nonetheless, the attitudes not differing from each other significantly can be interpreted as the result of PBL not being implemented by the majority of Turkish veterinary schools and therefore, the display of an average attitude. Despite the absence of statistically significant differences within demographic variables, it was demonstrated that for academic title, professors,

those appointed with administrative duties and staff with a term of employment >16 years displayed a slightly greater score for arithmetic means of PBL attitude levels. Contradictory to the common view, professors and staff with a term of employment >16 years are somewhat inclined to PBL rather than to traditional education. Similarly, it can be suggested that academic staff appointed with administrative duties show a higher tendency to incorporate PBL into the curriculum.

Rand and Baglioni Jr. (1997) reported a major increase in the number of students who strongly agreed that PBL enabled a better understanding of the subject and the ability to apply the principles of this method in new situations. Students shared the common view that the only disadvantage was the longer time required in comparison to traditional lecture-based classes.

In their study aimed at the assessment of the success of the integration of problem-based learning and other curricular changes throughout the implementation of a modified curriculum at the University of Tennessee, College of Veterinary Medicine in 1999, Howell *et al.* (2002) engaged both faculty facilitators and students unfamiliar to such modifications in programme assessment. The results of the preliminary assessment demonstrated a mostly positive reaction to problem-based learning.

Furthermore, Rand and Baglioni Jr. (1997) indicated that students' perceptions of the learning outcome were in favour of problem-based learning, compared to lecture-based education. Likewise, the educators who participated in the study showed a positive attitude to PBL. On the other hand in their study aimed at the comparison of traditional lecture-based learning and case based/problem-based learning. Grauer *et al.* (2008) suggested that the two teaching methods were of similar efficacy.

In the present study, it was determined that the arithmetic mean of the PBL attitude levels of academic staff working in the field of clinical sciences (53.9%) was lower than the mean of the academic staff working in the field of basic sciences (24.4%). However, Miller (1997) noted that clinics provide an experiential learning environment similar to that of PBL.

CONCLUSION

In this study, it could be said that veterinary educators in Turkey are generally sensitive to PBL. From this point of view, it can be suggested that the academic staff of Faculties of Veterinary Medicine in Turkey show a positive attitude to the incorporation of PBL into the curriculum.

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