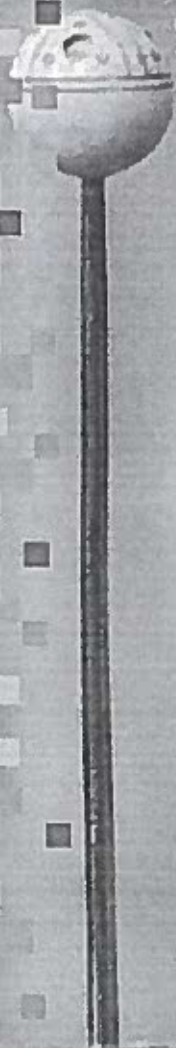
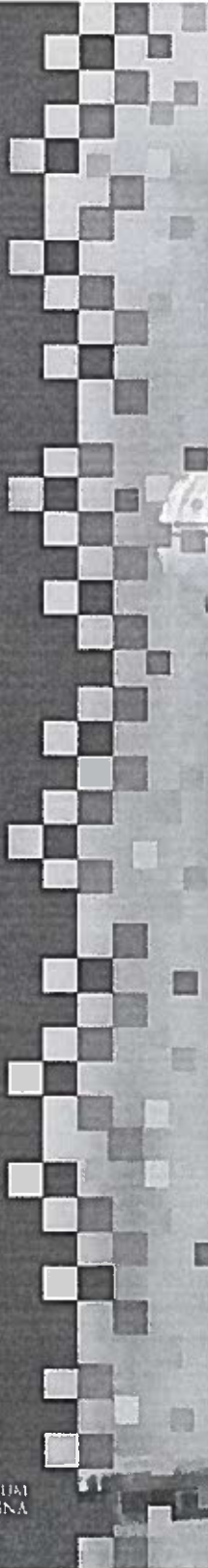




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HOW DO PRIMARY PRE-SERVICE TEACHERS ASSESS CIRCUS WITH ANIMALS AND ITS EDUCATIONAL VALUE? A STUDY WITH PORTUGUESE, SPANISH AND GREEK STUDENTS

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This study aimed to check the opinion of primary pre-service teachers about circus with animals, including if they recognize any educational value in this type of show and how they assess the animals' treatment in this place. For that, a questionnaire with open and closed questions was administered at the beginning of the school year of 2018/2019 in three higher education institutions, one in Portugal, one in Spain and one in Greece. Among students of the different countries, the results were very similar, and the participants tend to consider that this show has no educational or even recreational interest for children, mainly based on arguments centred on animals. Therefore, they considered that this show mutilates animals' welfare, but one third of the participants showed difficulties in assessing how animals are treated in certain aspects. The results suggest that in their future practice the majority of the students will not convey an uncritical view of this show to their pupils. Even so, only a few Portuguese students recognize the value of circus as a controversial issue to be explicitly approached in class, a reason that could be related to the syllabus content of Didactic of Science, a curricular unit in their course plan.

Keywords: Pre-service teachers, Human-Animals Relationship, Circus

INTRODUCTION

In Science Education the discussion of socio-scientific issues, most of them controversial, is a way to develop students' critical thinking. Therefore, socio-scientific issues are informed by scientific knowledge, involve forming opinions, are frequently media reported and involve values and ethical reasoning (Ratcliffe & Grace, 2003). In the absence of these issues in the curriculum, the awareness of a role as a world citizen is somehow missing.

Human relationship with other animals involves several controversial issues, including performing that seems to be an interdisciplinary point of interest (Grant, Ramos Gay, & Alonso Recarte, 2018), and is a relevant theme in Science Education. There are a number of educational arguments in favour of students undertaking such considerations. Such teaching, apart from its value in learning science issues might: a) heighten the ethical sensitivity of students, b) increase the ethical knowledge of students, c) improve the ethical judgment of students, and d) make students better people in the sense of making them more virtuous or otherwise more likely to implement normatively right choices (Reiss, 2017). However, it has not always received the

relevance it deserves, at least in the countries where the present study was developed. And even knowing that several non-profitable associations and also political parties are putting animal issues in the agenda, socio-scientific issues centred on science and technology impacts are more often more selected for discussion (see, for instance, Easton, 2009). Also, environmental education seems to be more focused on other topics. According to Reingard (2016), animal welfare and the care for the environment have taken separate ways, with their own agendas and groups, and also with a dissimilar social and political impact.

The behaviour of teachers during the approach of controversial issues also motivates discussion, especially if they should or not take a position in class. Common knowledge tells us that, teachers are not neutral during their teaching-learning process and tend to transmit their values to pupils in an explicit or implicit way. For instance, a study done by Almeida (2011), involving teachers from the Lisbon area (Portugal), found that the majority of them did not consider the existence of zoos a controversial issue, and the same in the case of the use of animals in cultural acts, even though in a less expressive trend. But if this kind of issues is not considered as controversial, probably an instrumental view of other animals, which includes the assumption that they deserve less moral consideration than humans, is transmitted, since it has been the dominant perspective in the western thought (Steiner, 2005).

In fact, during centuries, animals have been seen in an instrumental way and they have been used for different human purposes, including fun. But according to Franklin (2008), since the sixties, the idea that we can use animals for any human purpose is changing as a result of the emergence of several animal movements. The development of scientific knowledge in the fields of physiology, animal behaviour and animal cognition also helps to this change, since it has allowed a better understanding of the negative impact of certain human uses of animals. According to Bekoff and Bekoff (2017) science can not produce obvious moral 'outputs', but it can inform our ethical judgments and behaviours.

Circus with animals is a show created for humans, an American invention with roots in Roman public exhibitions and medieval travelling exhibitions (DeMello, 2012). However, the use of wild animals has been especially criticized due to several reasons: their welfare lives are affected due to an inadequate diet, poor house conditions, health problems related to the effect of repeated performances, physical and emotional punishment suffering during their training and having to travel constantly in cages (Iossa, Soulsbury, & Harris, 2009). Doming, Harris, and Pickett (2016) provide an impartial literature review based on scientific evidence of the impact on animals of travelling circuses and other animal performing acts. They highlight the following evidence that confirm the negative impact of these shows both physically and mentally: i) contact with small and poor environments; ii) inappropriate social conditions, as isolation of social groups; iii) difficulties in having adequate food; iv) impossibility to meet climatic and environmental needs of many species; v) submission to coercion, force and aggression; vi) physical deformities, injuries, lameness and psychological distress due to unnatural performances.

Aristotle is responsible for the idea that every living being has its own good only when its natural activity or function is achieved (telos). Based on this idea Rollin (2010) claims that the

circus is responsible for the perversion of the *telos* of an animal, as it is possible to confirm with the above mentioned problems caused to animals.

As far as animals in circuses is concerned, to the best of our knowledge, educational research is rare and usually is a part of wider studies related to the use of animals. For example, Stanisstreet, Spofforth, and Williams (1997) found that more than half of a sample of 433 pupils, aged 11-16 years, objected to the use of animals in circuses and a major factor here was apparently the thought that circus activities demean animals. Similarly, Pagani, Robustelli, and Ascione (2007) investigated Italian youths' (9–18 years of age) attitudes and behaviours toward animals. Various aspects of child–animal relationships were analyzed, including the use of animals in circuses. In their findings they recorded that the majority of their sample (82% of the girls and 71% of the boys (difference statistically significant, $p < 0.001$) was against the use of animals in circuses, with younger pupils, aged 9–10 years, being more often against the use of animals in circuses when compared with those aged between 11 and 18.

Therefore, the present study tried to identify the opinion of primary pre-service teachers from Portugal, Spain and Greece about the circus, including whether they recognize any didactic purpose in this kind of show. In fact, the circus can be seen as a way to promote children's contact with animals, allowing learning about them, and ignoring the main criticisms already presented. Also, it will be important to identify if at least a few of these negative impacts are recognized by the students and if they inform their opinions about this kind of show.

When the study was designed, the situation about the use of animals in circuses was different in the three countries. In Portugal, the use of wild animals in circuses was banned by law (after the starting of the present research project), and licenses for their use will expire within 6 years. During this transitional period circuses must move animals to rescue centres (Decreto-Lei nº 20/2019); In Spain, the use of wild animals is banned in certain autonomous regions and municipalities ("Nearly 300 Spanish towns," 2016); In Greece the use of animals in circuses was banned by Law nº 4039, 2012. In this country there are no national circuses and foreign circuses with animals are not allowed to perform (Euro group for animals, n.d.). Despite the ban, a dolphinarium was operated in a private zoo in Athens and till 2019 there were shows with dolphins, although high fines were imposed.

Even knowing that the legal situation in the three countries tends not to support this kind of show, the present study is still important for the following reasons: i) the contact with this kind of shows is still possible in Portugal and Spain and in a few border countries of Greece; ii) law and ethical positions are not exactly the same, as the changes in legislation along time have proved. Also, an activity that is illegal today can be made legal again tomorrow.

METHODS

The sample involved 94 Portuguese, 78 Spanish and 49 Greek primary pre-service teachers from three higher school institutions, almost all females, and the average age of the groups was, respectively, 23.4, 23.2 and 22.7 years old. The Portuguese institution was in an urban context; The Spanish and the Greek institutions were from smaller cities, in rural areas. The Greek one is also in a city near the border.

A questionnaire, validated by two experts from each country, was administered on line, using the Google drive tool, at the beginning of the school year of 2018/2019, more precisely in October. The administration was in the main language of each country (Portuguese, Spanish and Greek), but an English version was used during the design process and validation. With the Google drive tool, the students could only see the questions of the next section after answering the previous one, a possibility that was important to check the reliability of their ideas in different moments of the questionnaire. The different sections and questions are in Table 1. In section 1, the inclusion of different shows was a way to know students' opinion about the circus in a more dissimulated way; in the other sections, the questions were exclusively about the circus.

Table 1. The sections and questions of the questionnaire.

Sections	Questions
Section 1	In a scale from 1 to 5 indicate the degree of relevance of including the different shows of animals during primary school activities: exhibitions with birds of prey, circus, racing horses, pets' competitions, exhibitions with aquatic mammals. Justify.
Section 2	1. Have you ever seen a live circus show with animals? Yes No; 1.1. If you said yes, why did you go to this kind of show?
Section 3	1. Do you think that the circus with animals can be an educative show? Yes No. Justify; 2. The circus is a show that can use animals or not. Which kind of show is more relevant for children? a) Circuses with animals; b) Circuses without animals; c) Both kinds of circuses. Justify. 3. Is the circus an adequate place for animals? Yes No. Justify. 4. In your opinion, circuses should exhibit: a) All kinds of animals (wild and domestic ones); b) Only wild animals; c) Only domestic animals; d) Performances without animals. Justify.
Section 4	1. In general, animals in the circus... 1.1 Are well fed ; 1.2 Do enough exercise; 1.3 Have their natural features respected; 1.4 Like to show themselves to the viewers; 1.5 Suffer physical and psychological abuse; 1.6 Are in general well treated (For all: Yes, No, Don't know)
Section 5	1. In your opinion, should the use of animals in circuses be forbidden? Yes No. Justify.

The relative frequency of the answers in section 1 for each country was analyzed after the categorization of the justifications, including each category ideas which were considered similar. The content analysis of all the answers allowed to create three main categories: animal centred reasons, e.g. "Animals were kept in bad conditions", human centred reasons, e.g. "It could be a way to learn about exotic animals" and mixed reasons, e.g. "It has no educational value and animals are not in their habitats". A few more examples of answers from these categories are included in the results section.

Two other categories were also created: other kind of reasons, especially those that were inclusive like "It is not good for children" or "I never thought about that", and Don't know. With question of the questionnaire's first section, related to the circus, the Kruskal Wallis H test (inferential statistics) was used to check statically differences between the means obtained from the students of the three countries, concerning the different shows and exhibitions included in the questionnaire. The median for each show by country was also included.

The relative frequencies of the results of the questions from the other sections were also calculated.

RESULTS

In the question of the first section related to the circus, 73.4% of the Portuguese students, 74.3% of the Spanish and 76.3 of the Greek selected value 1 and 2 of the Likert scale, considering that the circus does not have any didactic interest, stating that animals are not in their habitat and are bad treated. Animal centred answers were almost exclusively given by those that value the circus very low, with a high relative percentage (65% in the Portuguese sample, 41.4% in the Spanish and 75.8% in the Greek). A few examples of these answers are “It is not suitable for children since the animals are abused and far from their environment” or “Animals suffer during the training”. Even so, the students from the three countries that value this show with 4 and 5 were 12.7% of the Portuguese sample, 9% of the Spanish and 13.1% of the Greek. In this selection, the arguments were almost exclusively human centred. The difference of the results for 100% is from those that selected value 3 in the Likert scale. The result of applying the Kruskal Wallis H test showed no statistical differences between the students of the three countries ($p = 0.412$). Just a few examples of students’ justifications: “At the end of the school period, it can be a leisure activity”, “Children enjoy seeing animals and the show can motivate them to research information about them”, “This show is a way to allow pupils to see exotic animals” or simply “It is a great show”. In the group of students that gave 3 (neutral position), 4 and 5 to the didactic relevance of the circus, some Portuguese students stated that it could be a relevant controversial issue to discuss with children, an argument not presented in the samples of the two other countries.

In Table 2 the median value obtained for each show by country in question 1 is compared.

Table 2. The comparison of the median values for the didactic value of the different shows obtained by the sample of each country.

	Portuguese Students	Spanish Students	Greek Students
Circus	1	1	1
Exhibitions with birds of prey	3	3	2
Racing horses	2.5	3	3
Pets’ competitions	1.5	2	3
Exhibitions with aquatic mammals	3	2.5	3.5

As it is possible to conclude, the circus was rated by the students of the three countries as the show with smaller didactic value for children in a set of five shows involving animals. Even so, the shows with aquatic animals have received much more recognition, and they can be considered very similar to circus acts.

Considering the section 2 of the questionnaire, 94.7% of the Portuguese students, 80.8 of the Spanish and 69.4% of the Greek had seen this kind of show live at least once. The reasons for attending this show were diverse. But in all the samples, families’ options were the main reason stated, and 20% of the Portuguese sample also mentioned that during primary school it was a common activity and few remembered that it was an offer from the town council. This kind of experience during primary school was only evoked by 2.6% of the Spanish and of the Greek students.

The educational value of the circus was considered irrelevant by 73.4% of the Portuguese students, by 67.4% of the Spanish and by 64.6% of the Greek, a result obtained in question 1

of section 3, percentage values quite similar to the ones obtained in the question of section 1 (Table 1). Even so, 15% of the Portuguese said it could be a way to learn about animals, a reason also stated by 14% of the Spanish and by 7% of the Greek. A few Portuguese students stated again the possibility of developing children's critical thinking, a reason absent among the Spanish and quite rare among the Greeks (2.3%).

Considering the presence of animals in circuses, section 3 – question 2 (Table 1), 73.4 of the Portuguese sample, 84.6% of the Spanish and 90% of the Greek were against it, evoking the bad welfare conditions given to animals. But considering the possibility of having wild, domestic or both types of animals in circuses, section 3 – question 3, near 12% of the Portuguese sample, near 7% of the Spanish and 10% of the Greek accepted the third possibility. For defending the circus with animals, the participants evoked mainly two reasons: it is a show that children like; it can only be acceptable if the animals are well treated.

In relation to the assessment of different aspects related to animals in the circus, section 4, the results are present in Table 3.

Table 3. The opinions of primary pre-service teachers about animals' circus conditions. For each statement is included the percentage of agreement (Yes, No and DK – Don't know).

1. In general, animals in the circus...	Portuguese students			Spanish students			Greek students		
	Yes	No	DK	Yes	No	DK	Yes	No	DK
Agreement...									
1.1 Are well fed;	12,8	27,7	59,5	9	32,1	60	46,9	-	53,1
1.2 Do enough exercise;	7,5	44,6	47,9	15,4	42,3	42,3	28,6	32,7	38,8
1.3 Have their natural features respected;	1,1	86,2	12,7	2,6	87,2	10,2	2	77,6	20,4
1.4 Like to show themselves to the viewers;	5,3	48,9	45,8	3,9	53,9	42,2	6,1	53,1	40,8
1.5 Suffer physical and psychological abuse;	64,9	2,1	33,0	66,7	-	33,3	79,6	-	20,4
1.6 Are in general well treated.	7,4	56,6	36,0	5,2	61,5	33,3	4,1	67,3	28,6

The opinion of the students of the three groups tended to consider that animals are badly treated and are deprived of their natural features. Even so, a high percentage of the students don't know how to assess several of the aspects considered. It was the case of the items "Are well fed", "Do enough exercise" and "Like to show themselves to the viewers".

Finally, the legal prohibition of the circus with animals, section 5, was supported by 85.1% of the Portuguese sample, by 88.5% of the Spanish and 76% of the Greek based on the harm done to animals.

DISCUSSION AND CONCLUSIONS

In the present study, the results obtained in the different questions were very similar in the samples of the three different countries, since the majority of pre-service teachers did not recognize any relevant didactic value or even recreational interest in the circus with animals, evoking essentially reasons centred on the animals. Even so, about one third of the participants in each country had difficulties in assessing how animals are treated in some specific aspects, and a percentage below 15% tended to think that the circus with animals is a good show. It seems that, at least in the case of the circus, the way animals are treated is not totally known

by the participants and more information is needed to increase awareness about this kind of show.

Some Portuguese students evoked that the circus could be a controversial issue to approach in class and this could be related to the fact that only in the course attended by these students there is the inclusion of controversial issues in the syllabus of the curricular unit of Didactic of Science.

Curiously, none of the Greek students evoked in their answers the fact that the present show is not a legal activity in their country, a ban created in Greece in 2012. This may be related to the lack of knowledge about this situation or because they gave priority to other reasons in their justifications.

The results also support the idea that during their future teaching practice a great majority of these students probably will not attend with their future pupils this kind of show, especially in Portugal, where there is still a transitory period of six years until the total prohibition of the use of wild animals in circuses, and in Spain where the circus with wild animals is still possible to be seen in certain regions. This supposition is in line with the idea that, at least in certain subjects, a change is occurring in our society about how animals should be treated. Even so, the recognition of a great didactic value of shows with aquatic mammals is of concern, since they are in fact circus acts, apparently not identified as such by the students.

Finally, the inclusion of controversial issues related with human-animals relationship seems to be a relevant issue to be included in teacher training courses. With this approach, the future teachers will be much more prepared to deal with this kind of subject, helping to build a less instrumental view towards animals.

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