

Satisfaction of Primary School Teachers with the Environmental Communication of Mass Media: Opportunities for the Environmental Education

Daphni Petkou ^{1*}

¹ Department of Forestry and Management of Environment and Natural Resources, Democritus University of Thrace, 193 Pantazidou Street, 68 200 Orestiada, GREECE

* CORRESPONDENCE: ✉ dafnipetk@gmail.com

ABSTRACT

The role of mass media in the educational process is of particular importance, since mass media make the object of teaching more interesting and enjoyable. The use of media in education is recognized from early childhood, and especially at kindergarten, where it has been proven that the earlier the use of media begins, the more effective it turns out to be. The relationship that evolves between the media, environmental knowledge and the environmental awareness of teachers is characterized by a continuous state of interdependence, since it is linked to Environmental Communication and the effective role of education. The aim of this paper is to examine the teachers' satisfaction with the use and role of media in environmental communication. The paper analyses the satisfaction of teachers in primary education, through their attitudes and beliefs. By having a large volume of information related to their individual cognitive fields at their disposal, teachers can play a vital role in raising environmental awareness among students and in providing an elementary understanding of environmental problems. This paper is based on a survey conducted during the period 2014-2015, on a sample of 392 primary education teachers, working at various school units in Central Macedonia, Greece. Based on the results of the analysis, conclusions can be drawn with regard to defining a suitable educational policy related to the role of media, and their optimum use in environmental education and communication.

Keywords: primary education, teacher's behavior, descriptive statistical analysis

INTRODUCTION

Mass Media are a source of information on local and national issues, as well as problems affecting societies today.

The role of media in shaping modern-day reality is multi-dimensional, since they constitute a core part of people's lives (De Fleur & Dennis, 1994). In the case of the environment, they serve as a fundamental channel for exposing environmental issues and problems (Brulle, Carmichael, & Jenkins, 2012). They attract public attention to environmental problems and, by providing relevant information, they fuel the public's need to take part in their solution (Ors, 2012).

The role of media in the educational process is particularly important, since the former make the object of teaching more interesting and enjoyable for students. The use of media facilitates student cooperation and

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communication (Kamarianos, 2002). Media is used in education from early childhood, and to a large extent in kindergarten, since it has been proved that when the use of media begins early on, then its effectiveness proportionately increases (Nika & Davou, 2008; Ronen & Eliahu, 2000).

Generally speaking, media have the potential to influence people's behaviour, and shape relevant attitudes and approaches. Furthermore, media can also initiate and bring about social change, by promoting various forms of social action (McQuail, 1994; Saunders & Goddard, 2002).

The impact of media depends on the content and use of the medium in question. It is viewed as either positive or negative depending on the way in which the media interact with the public (Greenfield, 1988). A major role on the impact of media is played by the socio-cultural environment and individual characteristics of each person. Media define principles, values, ideologies, leading to a more environmentally-friendly public attitude and mentality (Birch & Schwaab, 1983; Eveland & Cooper, 2013; Hungerford & Volk, 1996; Ramsey & Rickson, 1976).

Media constitute the main source of information on environmental issues and the way in which the latter are projected dictates whether they will be questioned or resolved (Hansen, 2011). A variety of studies have been conducted on the subject of environmental communication, which view environmental issues as part of development; these studies involve a broad spectrum of mass media and are related to the fields of science, health and the environment (Hansen, 1991). In addition, there have also been significant changes in the field of environmental communication, which go beyond any traditional narrow-sighted concerns, dominated by the news coverage of environmental issues and its impact on public opinion; the aim is to provide an understanding of the broader social, political and cultural roles that are linked to environmental communication (Hansen, 2011).

The role of mass media in the educational process is of particular importance, since the media add a more interesting and pleasant note to the teaching material. It has also been noted that the use of mass media facilitates student collaboration and communication (Kamarianos, 2002). The use of mass media in education has been introduced from early childhood, at kindergarten in fact, since it has been proven that the use of mass media is more effective when it is introduced at a young age (Nika & Davou, 2008). By using mass media, teachers assist young students in comprehending the sensitive balances and correlations that exist among the diverse elements of the environment (Ronen & Eliahu, 2000). A primary objective is to provide such training to students from an early age, in order to raise environmental awareness and an elementary understanding of environmental problems, while the ultimate goal is to shape relevant environmental attitudes, behaviours and values.

Mass media, as tools for non-formal education, can promote the study of sustainable development, through the presentation of environmental news, whereby the processing and analysis of an issue can provide the opportunity for an in-depth examination of its various aspects and its connection to other issues, and the portrayal of evidence-based views on its relevant impact (Skanavis & Sakellari, 2008).

The relationship formed between the media, environmental knowledge and public environmental awareness is in a constant state of interdependence, since it is related to Environmental Communication.

The aim of this paper is to examine the satisfaction of teachers with the use and role of media in environmental communication. The paper analyses the satisfaction of primary education teachers through their attitudes and beliefs, given that teachers have a large volume of information related to their various cognitive fields at their disposal. It also examines the major role teacher's play in raising environmental awareness among their students and in providing them with an elementary understanding of environmental problems.

MATERIALS AND METHODS

The research data was collected with the help of a suitably structured questionnaire and through face-to-face interviews with primary school teachers. The selection of the teachers and the data collection were carried out using two-stage Proportionate Stratified Random Sampling (Lohr, 1999) as the basic sampling plan. The survey was conducted during the period 2014-2015, on a sample of 392 teachers working in various schools of Central Macedonia, Greece (Petkou, 2017).

For the analysis of the answers to questions, calculations were made of the absolute and relative frequencies (percentages %), central tendency indices (means and medians) and variance indices (standard deviations) (McCormick et al., 2017). To examine the correlation between the categorical variables (*nominal*

Table 1. Central Tendency and Variance Indices of Answers to questions q1, q2, q3

Questions/Topics	M	MV	SD
q1. Do you believe that the use of media enhances the quality of the learning process?	2.7	3.0	1.0
q2. Do you believe that the level of today's media is satisfactory?	2.4	2.0	0.9
q3. Do you believe that the use of media helps teachers to better organize and improve the quality of their educational work?	2.7	3.0	1.1

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 2. Distribution of Answers to questions q1, q2, q3

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q1	Frequency	36	146	118	72	20	392
	%	9.2%	37.2%	30.1%	18.4%	5.1%	100.0%
q2	Frequency	54	154	148	30	6	392
	%	13.8%	39.3%	37.8%	7.7%	1.5%	100.0%
q3	Frequency	50	124	126	60	26	386
	%	13.0%	32.1%	32.6%	15.5%	6.7%	100.0%

Table 3. General Description of Answers to questions q1, q2, q3

Questions/Topics	General Description
q1. Do you believe that the use of media enhances the quality of the learning process?	Slightly to Moderately (67.3%)
q2. Do you believe that the level of today's media is satisfactory?	Slightly to Moderately (77.1%)
q3. Do you believe that the use of media helps teachers to better organize and improve the quality of their educational work?	Slightly to Moderately (64.7%)

and/or ordinal), a case-by-case evaluation was carried out of the results of the χ^2 test and the significance test of Spearman's rank correlation coefficient (Dafermos, 2005; Russell, 2012). The analysis was carried out using the statistical package SPSS ver. 20.

Initially, the teachers' beliefs and attitudes were examined regarding the way in which they use and exploit the media in class. The method used was descriptive statistics, in relation to the central tendency of the answers provided by the teachers to the relevant questions in the questionnaire. Next, the distributions of the teachers' answers to specific questions in the questionnaire were defined. Finally, based on the mean, the median and the relative frequency distribution of the answers, a general description was used for the answers given to each question (McCormick et al., 2017).

RESULTS

Tables 1, 4, 7, 10, 13, 16 and 19 present, on a central tendency level, the teachers' answers to the questions in the questionnaire related to the teachers' satisfaction. Tables 2, 5, 8, 11, 14, 17 and 20 present the distribution of the teachers' answers to the questions in the questionnaire. Tables 3, 6, 9, 12, 15, 18 and 21 attempt to provide a general description of the answers to each question.

The general description of the answers (Table 3) shows that the teachers believe that the level of the media cannot be considered satisfactory, the use of media does not enhance the quality of the learning process to a sufficient extent and the use of media does not help teachers, to a satisfactory degree, to better organize and improve the quality of their educational work. The analysis shows that the content of the information provided by the media should be constantly updated, while also reflecting modern social trends, in accordance with the needs, characteristics and way of life of the public it is addressed to, so that the relevant information can be understood and assimilated more easily.

Table 4. Central Tendency and Variance of Answers to the Question q4 “Do you use the media for.?”

Questions/Topics	M	MV	SD
q4. Do you use the media for:			
q4.1 Information	3.6	4.0	1.1
q4.2 Companionship	2.6	3.0	1.2
q4.3 Entertainment	3.0	3.0	1.1
q4.4 General knowledge	2.7	3.0	1.0
q4.5 Educational purposes	2.6	2.0	1.2

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 5. Distribution of Answers to question q4

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total
q4.1	Frequency	10	66	100	116	390
	%	2.6%	16.9%	25.6%	29.7%	100.0%
q4.2	Frequency	72	104	124	36	376
	%	19.1%	27.7%	33.0%	9.6%	100.0%
q4.3	Frequency	34	100	134	74	388
	%	8.8%	25.8%	34.5%	19.1%	100.0%
q4.4	Frequency	38	128	144	54	382
	%	9.9%	33.5%	37.7%	14.1%	100.0%
q4.5	Frequency	66	152	82	54	384
	%	17.2%	39.6%	21.4%	14.1%	100.0%

Table 6. General Description of Answers to question q4

Questions/Topics	General Description
q4. Do you use the media for:	
q4.1 Information	Moderately to Very (55.3%)
q4.2 Companionship	Slightly to Moderately(60.7%)
q4.3 Entertainment	Slightly to Moderately(60.3%)
q4.4 General knowledge	Slightly to Moderately(71.2%)
q4.5 Educational purposes	Slightly to Moderately(61.0%)

Table 7. Central Tendency and Variance of Answers to the Question q6 “Which media do you use in your educational work?”

Questions/Topics	M	MV	SD
q6. Which media do you use in your educational work?			
q6.1 Television	2.0	2.0	1.0
q6.2 Radio	1.7	1.0	0.9
q6.3 Books	4.1	4.0	0.9
q6.4 Magazines	2.7	3.0	1.1
q6.5 Newspapers	2.7	3.0	1.1
q6.6 Internet	4.2	5.0	1.0

*M: Mean, MV: Median Value, SD: Standard Deviation

Based on the general description of the answers (**Table 6**), it is shown that teachers use media mainly for information. Other uses (general knowledge, educational purposes, companionship and entertainment) do not present a high level of preference. It is therefore apparent that the use of media in education should be enhanced. It is also considered essential to promote a suitable educational policy for the use of media by teachers, through the organization of relevant teacher training programmes (Haramis, 2001).

Table 8. Distribution of Answers to the question q6
“Which media do you use in your educational work?”

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q6.1	Frequency	120	140	74	18	8	360
	%	33.3%	38.9%	20.6%	5.0%	2.2%	100.0%
q6.2	Frequency	182	104	58	10	2	356
	%	51.1%	29.2%	16.3%	2.8%	0.6%	100.0%
q6.3	Frequency	6	10	78	144	138	376
	%	1.6%	2.7%	20.7%	38.3%	36.7%	100.0%
q6.4	Frequency	58	88	138	50	30	364
	%	15.9%	24.2%	37.9%	13.7%	8.2%	100.0%
q6.5	Frequency	60	104	116	58	28	366
	%	16.4%	28.4%	31.7%	15.8%	7.7%	100.0%
q6.6	Frequency	8	20	52	112	196	388
	%	2.1%	5.2%	13.4%	28.9%	50.5%	100.0%

Table 9. Central Tendency and Variance of Answers to the Question q6
“Which media do you use in your educational work?”

Questions/Topics	General Description*
q6. Which media do you use in your educational work?	
q6.1 Television	Not at all to Slightly (72.2%)
q6.2 Radio	Not at all to Slightly (80.3%)
q6.3 Books	Very to Extremely (75.0%)
q6.4 Magazines	Slightly to Moderately (62.1%)
q6.5 Newspapers	Slightly to Moderately (60.1%)
q6.6 Internet	Very to Extremely (79.4%)

* The answers in bold accounted for $\geq 50\%$ in the calculation of the total percentage.

Table 10. Central Tendency and Variance of Answers to the Question q7, q8, q9

Questions/Topics	M	MV	SD
q7. Do you believe that the media contribute to the management of environmental problems?	3.1	3.0	0.8
q8. In your opinion, do the media provide stimuli for teachers to undertake actions and initiatives, in order to tackle problems and improve the quality of the environment?	2.7	2.0	0.9
q9. In your opinion, to what extent are environmental topics projected by the media?	2.5	2.0	0.7

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 11. Distributions of Answers to questions: q7, q8, q9

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q7	Frequency	8	72	178	114	14	386
	%	2.1%	18.7%	46.1%	29.5%	3.6%	100.0%
q8	Frequency	22	174	124	52	16	388
	%	5.7%	44.8%	32.0%	13.4%	4.1%	100.0%
q9	Frequency	14	202	132	24	6	378
	%	3.7%	53.4%	34.9%	6.3%	1.6%	100.0%

The teachers' answers indicate that they make significant use of the Internet and books in their educational work, and less use of magazines and newspapers. Finally, they state that they do not use the radio or television at all or slightly. In recent years, teachers have indeed been paying particular attention to the use of the Internet and ICT in education. Through “learning designs”, teachers incorporate the Internet and its “tools” within a large number of educational settings (Harper and Oliver, 2002). The recording of successful learning designs with the use of the Internet and ICT will help to identify specific models of education (Barab & Duffy, 2000). However, the use of the Internet in the classroom must be accompanied by a suitable theoretical background, so that its optimum use is achieved (VanFossen, 2001).

Table 12. General Description of Answers to questions: q7, q8, q9

Questions/Topics	General Description*
q7. Do you believe that the media contribute to the management of environmental problems?	Moderately to Very (75.6%)
q8. In your opinion, do the media provide stimuli for teachers to undertake actions and initiatives, in order to tackle problems and improve the quality of the environment?	Slightly to Moderately (76.8%)
q9. In your opinion, to what extent are environmental topics projected by the media?	Slightly to Moderately (88.3%)

* The answers in bold accounted for $\geq 50\%$ in the calculation of the total percentage

Table 13. Central Tendency and Variance of Answers to the Question q11 “Evaluate the following media with regard to their contribution to raising public awareness on environmental topics”

Questions/Topics	M	MV	SD
q11. Evaluate the following media with regard to their contribution to raising public awareness on environmental topics:			
q11.1 Television	3.1	3.0	1.1
q11.2 Radio	2.8	3.0	1.0
q11.3 Books	3.6	4.0	0.9
q11.4 Magazines	3.1	3.0	0.9
q11.5 Newspapers	3.2	3.0	0.9
q11.6 Internet	3.8	4.0	1.0

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 14. Distribution of Answers to question q11

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q11.1	Frequency	16	92	156	70	52	386
	%	4.1%	23.8%	40.4%	18.1%	13.5%	100.0%
q11.2	Frequency	20	142	144	58	22	386
	%	5.2%	36.8%	37.3%	15.0%	5.7%	100.0%
q11.3	Frequency	0	42	144	140	62	388
	%	0	10.8%	37.1%	36.1%	16.0%	100.0%
q11.4	Frequency	10	106	148	98	24	386
	%	2.6%	27.5%	38.3%	25.4%	6.2%	100.0%
q11.5	Frequency	2	86	166	94	40	388
	%	0.5%	22.2%	42.8%	24.2%	10.3%	100.0%
q11.6	Frequency	2	32	116	132	104	386
	%	0.5%	8.3%	30.1%	34.2%	26.9%	100.0%

According to the answers given, the teachers believe that the media contribute to the management of environmental problems to a satisfactory degree. Furthermore, they believe that environmental topics are not sufficiently projected by the media and also that the media do not provide sufficient stimuli for teachers to undertake actions and initiatives, in order to tackle problems and improve the quality of the environment. It is true that the media are the main source of information on environmental issues, and the way in which the latter are projected by the media affects whether they are questioned or resolved (Hansen, 2011). In addition, efforts are being made through environmental communication to focus on and promote environmental issues (along with topics from the fields of science and health), as a vital element of modern-day sustainable development (Hansen, 1991).

Table 15. General Description of Answers to question q11

Questions/Topics	General Description
q11. Evaluate the following media with regard to their contribution to raising public awareness on environmental topics:	
q11.1 Television	Slightly to Moderately (64.2%)
q11.2 Radio	Slightly to Moderately (74.1%)
q11.3 Books	Moderately to Very (73.2%)
q11.4 Magazines	Slightly to Moderately (65.8%)
q11.5 Newspapers	Moderately to Very (67.0%)
q11.6 Internet	Moderately to Very (64.3%)

Table 16. Central Tendency and Variance of Answers to the Questions q12 “Do you believe that the media today contribute to shaping responsible behaviour?”

Questions/Topics	M	MV	SD
q12. Do you believe that the media today contribute to shaping responsible behaviour?			
q12.1 Television	2.6	2.0	1.1
q12.2 Radio	2.5	2.0	0.9
q12.3 Books	3.4	3.0	0.9
q12.4 Magazines	2.8	3.0	1.0
q12.5 Newspapers	2.9	3.0	1.0
q12.6 Internet	3.4	3.0	1.1

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 17. Distribution of Answers to question q12

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q12.1	Frequency	52	150	110	42	34	388
	%	13.4%	38.7%	28.4%	10.8%	8.8%	100.0%
q12.2	Frequency	44	154	134	40	12	384
	%	11.5%	40.1%	34.9%	10.4%	3.1%	100.0%
q12.3	Frequency	8	36	186	114	42	386
	%	2.1%	9.3%	48.2%	29.5%	10.9%	100.0%
q12.4	Frequency	24	146	126	74	18	388
	%	6.2%	37.6%	32.5%	19.1%	4.6%	100.0%
q12.5	Frequency	24	108	160	68	26	386
	%	6.2%	28.0%	41.5%	17.6%	6.7%	100.0%
q12.6	Frequency	14	66	130	106	76	392
	%	3.6%	16.8%	33.2%	27.0%	19.4%	100.0%

Table 18. General Description of Answers to question q12

Questions/Topics	General Description
q12. Do you believe that the media today contribute to shaping responsible behaviour?	
q12.1 Television	Slightly to Moderately (67.1%)
q12.2 Radio	Slightly to Moderately (75.0%)
q12.3 Books	Moderately to Very (77.7%)
q12.4 Magazines	Slightly to Moderately (70.1%)
q12.5 Newspapers	Slightly to Moderately (69.5%)
q12.6 Internet	Moderately to Very (60.2%)

Based on their answers (**Table 15**), the teachers believe that the radio, magazines and television do not contribute to a satisfactory degree to raising public awareness on environmental topics. On the contrary, they state that books, newspapers and the Internet make a significant contribution to raising public awareness.

It is a fact that, although audiovisual media are considered to have the greatest impact on society, it is the press that is a major tool for the dissemination of environmental information. More specifically, the press (newspapers) is ranked highest with regard to providing information and bestowing meaning to daily events for the global elite, despite the popularity of television, which is a fact that impacts on public opinion and accordingly shapes governmental policies. In recent years, the Internet also plays an equally satisfactory part in raising public awareness (Piperopoulos, 2006).

Table 19. Central Tendency and Variance Indices of Answers to question q20 “Evaluate the result of the functioning of the media”

Questions/Topics	M	MV	SD
q20. Evaluate the result of the functioning of the media:			
q20.1 Distortion of information	3.8	4.0	1.0
q20.2 Propaganda	4.0	4.0	0.8
q20.3 Commercialisation of the news	4.1	4.0	0.9
q20.4 Serving social/political interests	4.1	4.0	0.8
q20. 5 Constructing an image of social reality	3.9	4.0	0.9
q20.6 Contribution to entertainment, education and culture	2.9	3.0	0.9
q20.7 Promoting polyphony and dialogue	2.7	3.0	0.9
q20.8 Promoting consumer goods	4.5	5.0	0.7
q20.9 Contribution to economic growth	2.5	2.0	1.0

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 20. Distribution of Answers to question q20

Questions/Topics	Not at all	Slightly	Moderately	Very	Extremely	Total	
q20.1	Frequency	0	36	108	130	108	382
	%	0	9.4%	28.3%	34.0%	28.3%	100.0%
q20.2	Frequency	0	16	84	152	120	372
	%	0	4.3%	22.6%	40.9%	32.3%	100.0%
q20.3	Frequency	2	10	72	142	148	374
	%	0.5%	2.7%	19.3%	38.0%	39.6%	100.0
q20.4	Frequency	0	10	66	158	142	376
	%	0	2.7%	17.6%	42.0%	37.8%	100.0%
q20.5	Frequency	2	40	68	166	100	376
	%	0.5%	10.6%	18.1%	44.1%	26.6%	100.0%
q20.6	Frequency	16	110	166	60	26	378
	%	4.2%	29.1%	43.9%	15.9%	6.9%	100.0%
q20.7	Frequency	14	158	134	58	8	372
	%	3.8%	42.5%	36.0%	15.6%	2.2%	100.0%
q20.8	Frequency	2	4	32	108	228	374
	%	0.5%	1.1%	8.6%	28.9%	61.0%	100.0%
q20.9	Frequency	48	160	110	48	10	376
	%	12.8%	42.6%	29.3%	12.8%	2.7%	100.0%

Table 21. General Description of Answers to question q20

Questions/Topics	General Description*
q20. Evaluate the result of the functioning of the media:	
q20.1 Distortion of information	Moderately to Very (62.3%)
q20.2 Propaganda	Very to Extremely (73.2%)
q20.3 Commercialisation of the news	Very to Extremely (77.6%)
q20.4 Serving social/political interests	Very to Extremely (79.8%)
q20. 5 Constructing an image of social reality	Very to Extremely (70.7%)
q20.6 Contribution to entertainment, education and culture	Slightly to Moderately(73.0%)
q20.7 Promoting polyphony and dialogue	Slightly to Moderately(78.5%)
q20.8 Promoting consumer goods	Very to Extremely (89.9%)
q20.9 Contribution to economic growth	Slightly to Moderately(71.9%)

* The answers in bold accounted for $\geq 50\%$ in the calculation of the total percentage

The teachers believe (**Table 18**) that books and the Internet contribute to a satisfactory degree to shaping responsible behaviour, while the radio, magazines, newspapers and the television make a smaller contribution.

According to the general description of the teachers' answers (**Table 21**), the result of the functioning of the media is to promote consumer goods, serve social and political interests, the commercialisation of the news, propaganda and to construct an image of social reality. To a lesser extent, the result of the functioning of the media is to distort information, and even less so to promote polyphony and dialogue, contribute to entertainment, education and culture and, finally, contribute to economic growth.

Table 22. Central Tendency and Variance of Answers to the Question q22 “Evaluate your feelings during the screening of environmental topics by the media:”

Questions/Topics	M	MV	SD
q22. Evaluate your feelings during the screening of environmental topics by the media:			
q22.1 Joy	3.0	3.0	1.1
q22.2 Sadness	4.3	4.0	0.7
q22.3 Anger	4.2	4.0	0.8
q22.4 Disgust	3.8	4.0	0.9
q22.5 Fear	3.8	4.0	0.9
q22.6 Hope-optimism	3.0	3.0	0.9
q22.7 Insecurity	4.0	4.0	0.8
q22.8 Misery	3.7	4.0	0.9
q22.9 Expectation	3.2	3.0	0.9
q22.10 Certainty	2.8	3.0	0.7
q22.11 Satisfaction	2.9	3.0	1.0
q22.12 Hatred	3.1	3.0	1.1

*M: Mean, MV: Median Value, SD: Standard Deviation

Table 23. Distribution of Answers to question q22

Questions/Topics	DK/NO*	Never	Rarely	Often	Always	Total	
q22.1	Frequency	6	160	72	64	44	346
	%	1.7%	46.2%	20.8%	18.5%	12.7%	100.0%
q22.2	Frequency	2	14	22	180	146	364
	%	0.5%	3.8%	6.0%	49.5%	40.1%	100.0%
q22.3	Frequency	2	20	34	166	144	366
	%	0.5%	5.5%	9.3%	45.4%	39.3%	100.0%
q22.4	Frequency	2	36	74	150	86	348
	%	0.6%	10.3%	21.3%	43.1%	24.7%	100.0%
q22.5	Frequency	4	40	56	172	78	350
	%	1.1%	11.4%	16.0%	49.1%	22.3%	100.0%
q22.6	Frequency	6	114	142	62	22	346
	%	1.7%	32.9%	41.0%	17.9%	6.4%	100.0%
q22.7	Frequency	2	14	66	182	94	358
	%	0.6%	3.9%	18.4%	50.8%	26.3%	100.0%
q22.8	Frequency	6	40	76	152	70	344
	%	1.7%	11.6%	22.1%	44.2%	20.3%	100.0%
q22.9	Frequency	10	68	146	92	28	344
	%	2.9%	19.8%	42.4%	26.7%	8.1%	100.0%
q22.10	Frequency	14	126	164	40	2	346
	%	4.0%	36.4%	47.4%	11.6%	0.6%	100.0%
q22.11	Frequency	8	146	98	70	26	348
	%	2.3%	42.0%	28.2%	20.1%	7.5%	100.0%
q22.12	Frequency	22	130	56	104	36	348
	%	6.3%	37.4%	16.1%	29.9%	10.3%	100.0%

*DK/NO: Don't know/No opinion

Table 24. General Description of Answers to question q22

Questions/Topics:	General Description*
q22. Evaluate your feelings during the screening of environmental topics by the media:	
q22.1 Joy	Never to Rarely (67.0%)
q22.2 Sadness	Often to Always (89.6%)
q22.3 Anger	Often to Always (84.7%)
q22.4 Disgust	Often to Always (67.8%)
q22.5 Fear	Often to Always (71.4%)
q22.6 Hope-optimism	Never to Rarely (73.9%)
q22.7 Insecurity	Often to Always (77.1%)
q22.8 Misery	Often to Always (64.5%)
q22.9 Expectation	Rarely to Often (69.1%)
q22.10 Certainty	Never to Rarely (83.8%)
q22.11 Satisfaction	Never to Rarely (70.2%)
q22.12 Hatred	Never to Rarely (53.5%)

* The answers in bold accounted for $\geq 50\%$ in the calculation of the total percentage

Table 25. Teachers' satisfaction from the use and exploitation of the media in environmental communication

Media	Spearman Correlation(ρ)	Monte Carlo p
Television	0.078	0.010
Books	0.192	0.000
Newspapers	0.137	0.005
Magazines	0.127	0.005
Internet	0.220	0.000
Radio	0.111	0.019

The media have the ability to influence the behaviour and emotional state of people. Their effect depends on the way they are used by the public, but also on the way the two interact (McQuail, 1994). The teachers' answers show (Table 24) that related emotions surface during the screening of environmental issues by the media. Thus, the teachers mainly feel sadness, anger, insecurity, fear and disgust, and to a lesser extent expectation; they do not seem to experience feelings of certainty, hope (optimism), satisfaction, joy, misery and hatred.

Next, a series of significance tests based on Spearman's rank correlation coefficient showed that the use and exploitation of the media in environmental communication is statistically significantly related to the teachers' satisfaction with the information they provide, according to their type (Table 25).

The values of the ρ correlation coefficient show that the intensity of the correlations is weak to medium. The highest correlation as regards teachers' satisfaction is linked to the Internet, books and newspapers, and the lowest to television.

CONCLUSIONS

According to the teachers' answers, it is observed that teachers consider the level of the media unsatisfactory. Furthermore, the use of media does not make a satisfactory contribution to the organization nor does it improve the quality of educational work. Moreover, the use of media does not enhance the quality of the learning process to a satisfactory degree.

Teachers mainly use the media for information. The use of media is fairly limited in relation to its existing potential for use. Of the various media, teachers make significant use of the Internet and books in their teaching work, and lesser so of magazines and newspapers. Indeed, in recent years, teachers have paid particular attention to the use of the Internet and ICT in education, while they believe that books, newspapers and the Internet make a satisfactory contribution to raising public awareness.

The teachers believe that the media contribute to the management of environmental problems to a satisfactory degree. They also state that environmental topics are not sufficiently screened by the media, and the latter do not provide sufficient stimuli for teachers to undertake actions and initiatives, in order to tackle relevant problems and improve the quality of the environment. In their opinion, books and the Internet make a satisfactory contribution to shaping responsible behaviour, while the radio, magazines, newspapers and television make a lesser contribution.

The result of the functioning of the media is the promotion of consumer goods, serving social and political interests, the commercialization of the news, propaganda and constructing an image of social reality.

The media are able to influence the behaviour and emotional state of the public. The teachers' answers show that the projection of environmental topics by the media brings relevant emotions to the surface; teachers mainly feel sadness, anger, insecurity, fear and disgust.

An examination of the level of satisfaction showed that the highest correlation to teacher satisfaction is linked to the Internet, books and newspapers, while the lowest to television.

Based on the results, it is possible to put forward certain useful proposals. The content of the information provided by the media should be continuously updated, in order to reflect current social trends and needs. The use of media in the educational process must be enhanced. It is considered necessary to define a suitable educational policy related to the use of media, and their better exploitation in environmental education. A recording of successful learning designs through the use of the Internet and ICT will help in identifying specific models of education. It is considered necessary to incorporate and better exploit environmental communication within the school environment. The latter should be framed by special models of environmental education that focus on and project major environmental problems.

There is also a need to further exploit the printed press in environmental education, since it constitutes a major tool for the dissemination of environmental information.

Disclosure statement

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Notes on contributors

Daphni Petkou – Department of Forestry and Management of Environment and Natural Resources, Democritus University of Thrace, 193 Pantazidou Street, 68 200 Orestiada, Greece.

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