

TEACHERS' PERCEPTION ON THE INCLUSION OF ENVIRONMENTAL EDUCATION IN PRIMARY SCHOOL CURRICULA. CASE-STUDY: DÂMBOVIȚA COUNTY, ROMANIA

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Abstract. Understanding the teachers' perception in terms of the importance of environmental education, and the main challenges and needs they face when undertaking activities related to environmental education is an important step towards its proper integration into classroom activities. The study focuses on a selection of schools from Dâmbovița County (Romania) and aims to analyse primary school teachers' perception of environmental education, the main concepts they feel the need to focus on, the subjects where environmental education is more likely to be tackled, their further needs and constraints in undertaking these activities. There are good premises in undertaking environmental education in the analysed schools, which depend largely on the teacher's involvement and interest in the matter, and the support granted by the school, or by the authorities. Therefore, a good collaboration within the school, as well as between the school and the authorities and the communities is the most important pillar for the better integration of the activities related to environmental education in schools.

1. INTRODUCTION

Many recent studies indicate that education is a key component in tackling the complex problems that society is currently facing in terms of the impact of global climate change, the increasing occurrence of natural hazards and risks, the pollution-related environmental threats, the loss of biodiversity, deforestation, the water crisis, natural resource depletion etc. (Gonzalez-Gaudiano and Merina-Cartea, 2010; IPCC, 2014; Sachs, 2015; Lehtonen *et al.*, 2018).

In this context, as a core component of education for sustainable development, environmental education should be a priority of national educational systems starting with early education, empowering children with the awareness, the necessary knowledge and skills to appropriately respond to these challenges (UNITAR, 2013). Thus, apart from the need to develop the adequate competences of children in terms of tackling environmental-related aspects and climate change adaptation and mitigation, there is a real need to ensure the adequate inter- and trans-disciplinary education of teachers (Bourn *et al.*, 2016). Therefore, there is a need for the teachers to receive the most appropriate resources and tools, in order to understand the complex issues regarding global environmental change, so that they may transfer to children the appropriate knowledge, and form the competences to tackle complex issues (UNECE, 2011). Teachers need to have access to good quality information, to be motivated and empowered to make a real transformation of the school environment and a real change in children's minds (Greer and Wetherington, 2015).

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In view of the above, the authors deemed it necessary to undertake a study on how environmental education is perceived by teachers in primary schools; hence, the case-study was performed in Dâmbovița County (Romania). Understanding the general perception is useful in finding the best teaching methods for implementing environment-related education (Kymario, 2011), all the more so, since these education trends, while linked to education for sustainable development, involve a trans-disciplinary curriculum approach and a new view of the way environmental education is included in school curricula. Getting the teaching institutions involved in environmental education and in stimulating awareness of environmental issues is a good opportunity to motivate pupils to become more interested in and responsible for environmental issues (Sencovici and Pehoiu, 2017). This is of more importance considering the large territorial disparities of school performance across the country, rural areas facing more difficulties and a lower performance that lead to larger social inequalities (Muntele *et al.*, 2020).

Environmental education should not be seen as the privilege of a single subject, but rather as having an integrative cross- or inter-disciplinary role. The interdisciplinary concept is a constant ambition of education nowadays, being more strongly emphasized recently, with the advancement of the concept of education for sustainable development, built around supporting the United Nations Sustainable Development Goals (Annan-Diab and Molinari, 2017). In primary schools interdisciplinarity can be tackled even more efficiently, as most subjects are taught by a single teacher. Environment and climate change education recently received more attention in Romania, with the inclusion of a dedicated programme on the topic starting with the 2022-2023 school year, entitled “Green Week” (Săptămâna Verde). The activities to be organised by teachers in this national programme aim to increase the children’s awareness on climate change issues and environmental protection (Ministry of Education, 2023).

Given the context, the current paper aims to bring a contribution to how teachers in primary schools perceive the importance of integrating environmental education into their activities, as an essential step towards integrating it properly into classroom activities, as well as what the main challenges and needs are for developing successful activities. The selected schools are located in Dâmbovița County, Romania.

2. METHODOLOGY

The present study relies on a questionnaire-based qualitative approach conceived according to the significant information offered by literature on environmental education. The questionnaire was designed in several stages, starting with several open questions in order to identify the level of the teachers’ knowledge on this subject and how they refer to it (e.g., *what do you mean by the term environment?; what is environmental education?; how did you learn about the concept of sustainable development?*). Testing the first questionnaire’s version with a few teachers, we decided to change these questions, because it was very difficult for them to answer the open questions for fear of being in the wrong, and feeling that their knowledge level was somehow being tested.

In the second stage of elaboration, we decided to simplify the questions, while also providing possible options to several questions. Thus, there was a significant increase in the teachers’ interest in filling in the questionnaire (Fig. 1).

The teachers’ identities remain anonymous, but we think that such information as the school they teach at, their education level, their tenure in education, the class-room they were teaching in during that school year are variables liable to influence the level of perception.

The final version of the questionnaire used in the study comprises 15 questions, only two of which are open questions, the others offering multiple choice answer options.

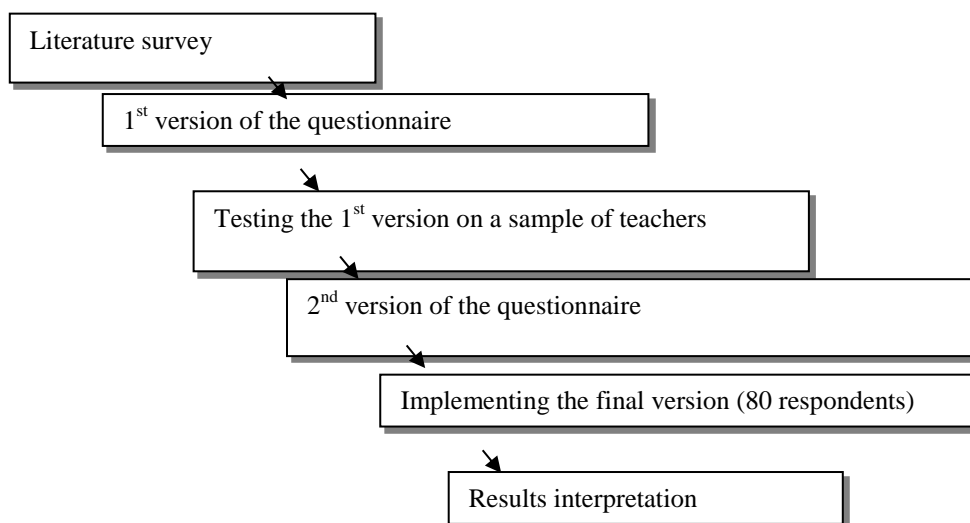


Fig. 1 – Stages in study design and elaboration.

Schools were selected fairly randomly, but they did include schools in both urban and rural areas. Promoting this questionnaire and getting more answers meant the authors relied on the personal relations they had with a few of the schools. Subsequently, they resorted to the so-called “snowball effect” method, meaning that a teacher was asked to bring in the survey to their colleagues, either from their own school, or from other schools.

The questionnaire was distributed mainly on paper and filled in by hand by the teachers. The Google Forms electronic platform was also used, with teachers being asked to fill the questionnaire in online, on a Facebook group (Primary Education Dâmbovița). Only 6 teachers answered it by this means.

Overall, 80 questionnaires were filled in, which we considered to be satisfactory for obtaining relevant results and drawing some conclusions. The questionnaire was sent out between March and April 2019. The teachers who proved to be interested and filled in the questionnaire came from 15 localities: 4 towns (Târgoviște, Pucioasa, Fieni and Găești) and 10 villages (Moroieni, Pietroșița, Buciumeni, Vulcana de Sus, Vulcana-Băi, Doicești, Bezdead, Moțâieni, Ludești, Potocelu).

3. RESULTS AND DISCUSSIONS

As expected, most teachers involved in this study were female (85.7%), with a variable length of service in education (between 2 and 45 years), 73.8% of them having graduated from a higher education institution. The majority of respondents represent schools located in rural areas (65%). All 5 primary learning years in Romania have been covered by the respondents in the survey. Classrooms numbered between 12 and 32 pupils.

To the question “*What term do you most often use to name environmental education?*”, the term “ecological education” was mentioned by most respondents (40.5%) followed by “education for environmental protection” (38.1% of the respondents) (Fig. 2). A smaller percentage (14.3%) recalled using the term “environmental education” (14.3%), while the term “education about the environment” (another possible questionnaire answer) was not chosen by any teacher. It is noteworthy that some teachers (7.1%) mentioned another term, namely “education for environmental exploration”, allegedly deriving from the title of a primary school subject, “Mathematics and Environmental Exploration”.

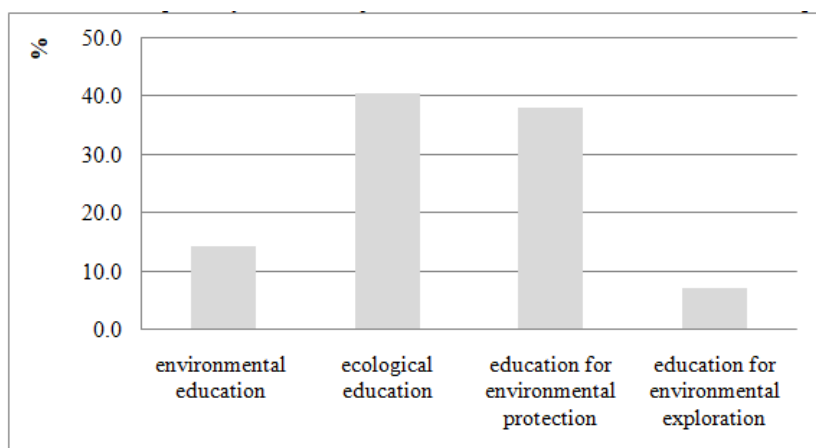


Fig. 2 – Terms used mostly by teachers to designate environmental education.

Out of the four answer options to the question “Which of the following aspects of environmental education do you highlight in the classroom?”, 57% of teachers believe that increasing the motivation regarding environmental aspects ranks first, while 47.6% lean towards the importance of increasing responsibility in the decision-making process (Fig. 3). Aspects of increasing awareness in terms of environmental issues were tackled by 19% of respondents, whereas cognitive aspects of education, meaning knowledge about environmental aspects, were regarded as important by only 2.4% of teachers.

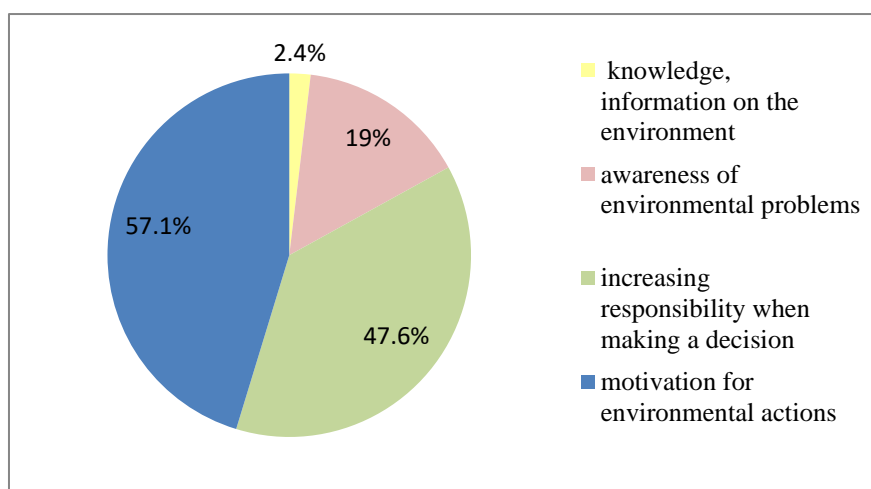


Fig. 3 – Aspects of environmental education deemed important for teachers.

Primary school subjects perceived to be of paramount importance for environmental education are Science and Mathematics & Environmental Exploration, followed by Communication in Romanian, Geography, Civic Education and Personal Development, Arts and Practical Abilities (Fig. 4). As a matter of fact, Geography was not named by teachers as being particularly important, perhaps because it is taught only one hour a week and in 4th grade alone; moreover, since 4th-grade teachers also failed to mention this subject, it leads us to believe that it is not how the textbook itself is structured, which accounts for the low degree of importance given to environmental aspects. However, looking at secondary school teachers and pupils, it appears that the interest in Geography has been gaining ground. In a study conducted by Pehoiu (2013) in the same county, Dâmbovița, most interviewees

believed that Geography and Biology are the subjects that most resemble environment-related educational aspects.

What is noteworthy is that there is more interdisciplinarity in primary schools regarding other subjects than those one might expect to be mentioned, as they have been selected by teachers due to their contribution to environmental education (e.g., Personal Development or Arts). These are hopeful findings for the larger-scale promotion in schools of the interdisciplinary framework of environmental education and education for sustainable development.

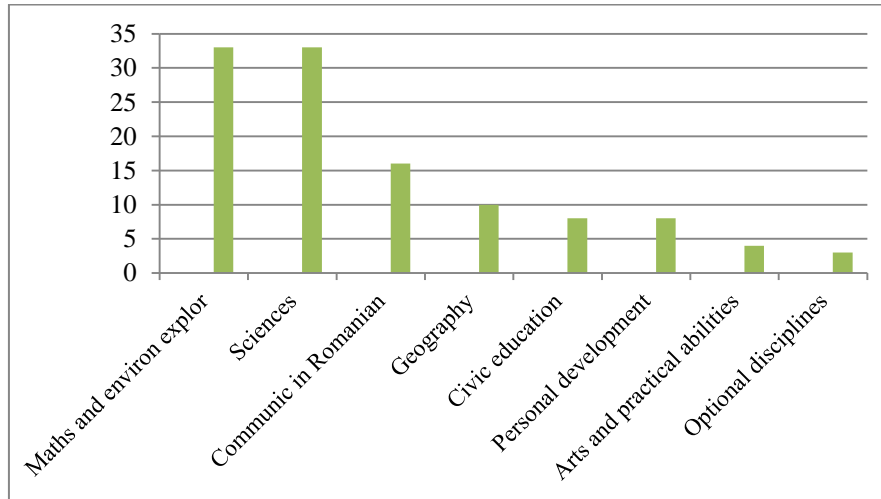


Fig. 4 – Primary school subjects in order of importance in promoting environmental education, as stated by teachers.

Consequently, the authors thought it useful to introduce the following question in the questionnaire: “*Are you familiar with the term sustainable development?*”, a concept which is not yet relevant for the primary school curriculum, a reality reflected also in the answers received, with 59.9% of teachers having just a general idea regarding the concept, 40.5% stating that they did not know the concept well enough (Fig. 5). For all that, none of the teachers selected the answer that they had no knowledge of the concept, which is also an asset for further integrating the concept of sustainable development in schools.

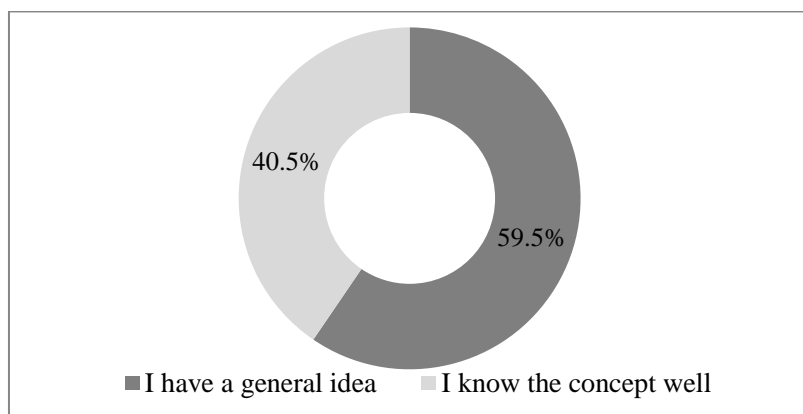


Fig. 5 – Distribution of answers to the question “*Are you familiar with the term sustainable development?*”

In the teachers' view, this notion is scarcely found in the curriculum of primary schools (57.1% of answers), a high percentage stating that it is not found there at all (23.8%) (Fig. 6).

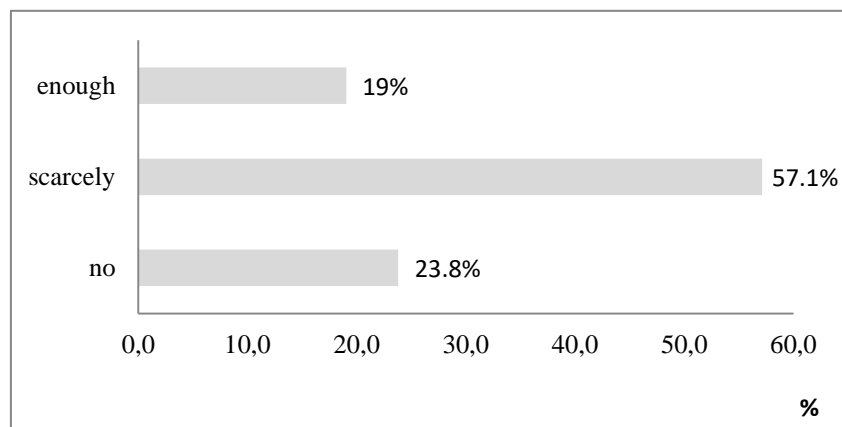


Fig. 6 – Distribution of answers to the question “*Is the term sustainable development included in the primary school curriculum?*”

The theoretical background of the education for environment and sustainable development notion shows that the school must train citizens informed about and aware of the global environmental issues, capable of making correct decisions as well as of being aware of the consequences of their actions at the local, regional and global level. Therefore, one of the questions included in the questionnaire pertained to the global environmental issues of concern, requesting that teachers single out the ones seen as more relevant. Most subjects saw that the most important among the 15 environmental issues listed in the questionnaire are pollution and the protection of the environment, followed by deforestation and waste (Fig. 7). Nearly half of the respondents indicated climate change, the exploitation of resources, the greenhouse effect and the ozone layer depletion. Very little interest on the part of teachers was shown for urbanization and risk phenomena, perhaps because the term itself was rather vague and of little relevance to them; similarly, the notion of *carbon cycle*, being rather complex and likely difficult to grasp, was ignored.

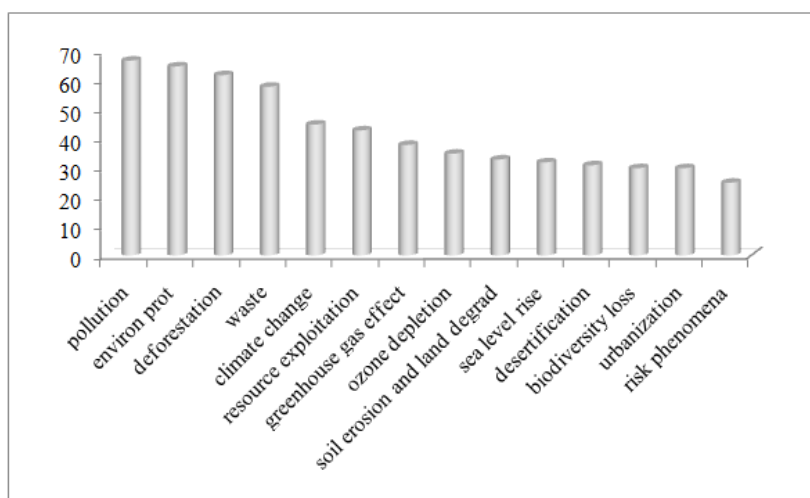


Fig. 7 – Global environmental issues indicated as important to be studied in primary schools.

It is to be outlined that there is an agreement on what teachers see as important and what is actually included in the school curricula in terms of environmental issues, since teachers stated that environmental protection, environment pollution and waste are properly included. However, several notions connected with global environmental issues, delineated as systemic and of global importance (e.g., climate change, the greenhouse effect, the ozone layer depletion, the rise in sea level etc.) are not mentioned at all.

When asked the question “*What problems occur in teaching lessons that include environment-related aspects?*”, the answering statements pointed to the absence of teaching material (45 answers) and to the small amount of time dedicated to teaching these concepts (41 answers) (Fig. 8). It is worth noting that some teachers think that pupils are not interested in such aspects, but also that, in classrooms with a high number of pupils, these aspects cannot be approached properly (impediments mentioned by 20 and 19 teachers, respectively).

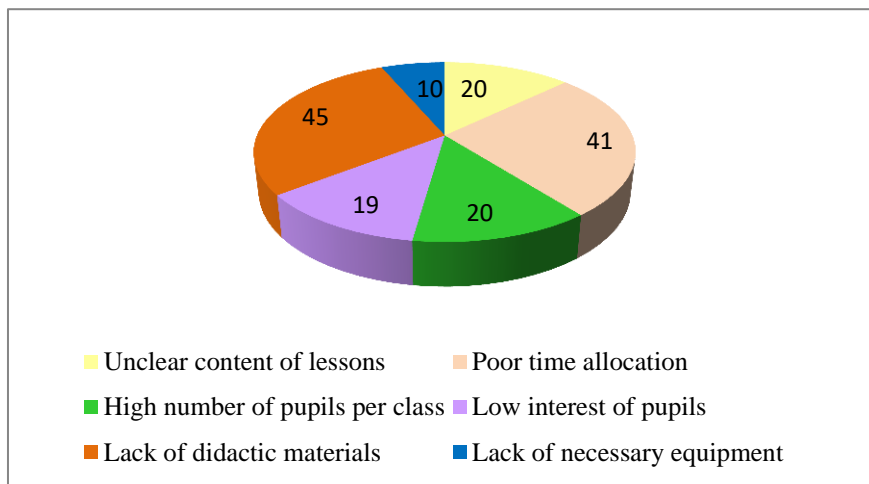


Fig. 8 – Difficulties for teachers in delivering lessons containing concepts regarding the environment and sustainable development.

Worth noticing is also that most teachers (85.7%) mentioned using the auxiliary areas (the garden or a laboratory) when teaching environment-related issues, which is remarkable in delivering lasting and practical environmental knowledge and in increasing pupils' environmental literacy.

The major sources of information teachers are resorting to in order to prepare the environment-related lessons are: the internet, specialized books, textbooks, thematic journals and the media, but also informative materials such as leaflets and brochures (Fig. 9). It is obvious that the most important source of information is the Internet and the involvement of teachers is essential in choosing the most credible sources from the multitude of options to be found online, thus preferring quality scientific information, reports from prestigious environment-related institutions and organizations, as well as scientific papers. For this reason, classroom teachers become a beacon for pupils, accurately guiding them through the massive amounts of information available online.

Environmental education is an important aspect for primary-school teachers, 66.7% of them stating so on several occasions; 33.3% believe that this type of education, though important, is rarely given to them to become involved with. The importance afforded this topic is also seen in the other two questionnaire answers (*It is important, but it is not my duty to approach this issue; I don't see it as important, that's why I don't teach it*) that have a negative nuance, which were not selected by any of the teachers who participated in this study.

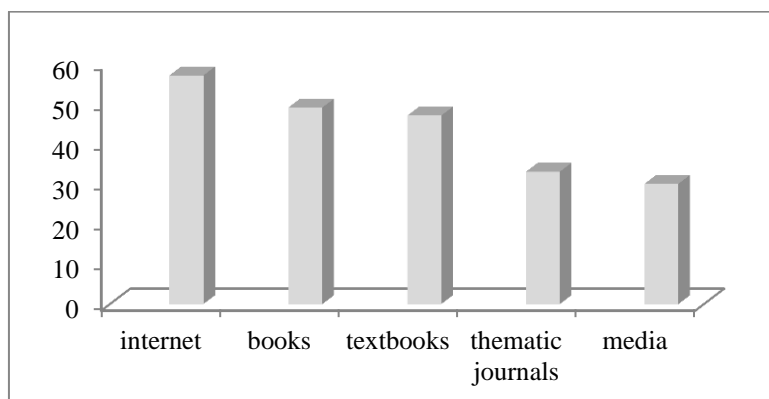


Fig. 9 – Information sources used by teachers in delivering environment-related concepts.

It is also noteworthy that all the teachers involved in this study specified that they had undertaken specific environment-related activities with the pupils (e.g., camps, trips, school competitions, common projects, documentation visits, exhibitions, open lessons), as follows: selective waste collection, garbage gathering in the local area, recycling, participating in thematic exhibitions, going on trips, watching documentary movies, environment-related activities during the “A Different School” programme, celebrating certain special days, such as Earth Day or Forest Day, tree and flower planting, building birds’ nests, participating in the “Let’s Do It, Romania” programme for waste collecting and the “Let’s Get Green!” movement by raising awareness, providing information, gathering and sorting waste, performing demonstrative lessons within the framework of environmental projects, taking part in competitions on ecological subjects (e.g., the ones organized by Kaufland, CIF and Domestos).

Furthermore, some of the activities were organized by teachers strictly in the classroom they coordinated, but several schools took part in more comprehensive programs covering the whole school, or the community itself.

Such actions were undertaken every semester (31 answers) or several times during a semester, rather than monthly; however, some teachers used to organize such activities once a year or even more seldom (Fig. 10).

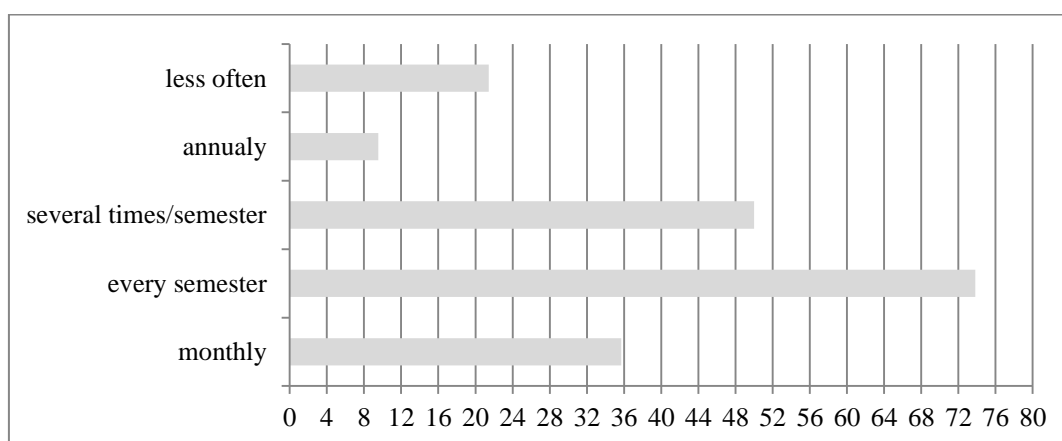


Fig. 10 – Periodical participation in organizing environment-related actions in the schools included in the study (values in %).

It is very important that such actions undertaken by teachers benefit from several types of support, mostly from the authorities (47 answers) and the parents (44 answers), from volunteers, foundations or NGOs. The support given by a finance-based project obtained the lowest number of answers, perhaps because it is not available to all teachers, requires much more effort and does not depend on one person alone getting involved in this attempt.

4. CONCLUSIONS

Despite all the advancements at the international level, educators still find it difficult to integrate sustainability aspects in teaching and programs (Hardin *et al.*, 2016), especially when the school curriculum is not adapted towards tackling these aspects. To better achieve this, integrating sustainability aspects into the mandatory subjects, a good school environment to provide training by living, but in particular good training and specific knowledge for teachers and good quality training materials have been selected as success factors when addressing this problem (Martins *et al.*, 2006; Dymont and Hill, 2015; Merrit *et al.*, 2019).

The study conducted on a sample of teachers from Dâmbovița County allows us to draw several general conclusions:

- Teachers have a great interest in environmental education, most of them including these aspects in their activity whenever is possible;
- However, new terms, such as *sustainable development* and *global environmental change*, are known only vaguely and are missing from the primary school curriculum.
- In particular, environmental actions promoted in schools depend largely on the teachers' involvement and interest in the matter and the support granted by the school, or the authorities; therefore, important steps forward in this direction should be made by the education system in Romania, in order to attain the stages specific to the '4C' model of education for the environment and sustainable development (curriculum, campus, community and culture).
- Worth mentioning is the interdisciplinary approach which takes into account several school subjects important for an environmental education (the Sciences, Mathematics and Environmental Exploration or Communication in Romanian). Quite a large number of teachers did not mention Geography, maybe because it is loosely studied in primary schools, only in the final grade.
- The main difficulties in treating environmental aspects as they should are the shortage of adequate teaching materials and the incorrect amount of time dedicated to environmental issues according to the curriculum. Teachers believe that these activities should benefit from greater support on the part of both the authorities and the parents.
- Teachers in the urban area seem to be more concern with introducing elements related to the environmental education, being more active with the participation in various activities;
- While analysing the questionnaire responses, it appears that prospects are good for enhancing environment-related actions in schools, this offering good premises for the organisation of "Green Week" National Programme. It is particularly important for classroom teachers to get involved and manifest interest, their role in this direction being quite defining, but it is also essential for the school and the community to which they belong to create the adequate context.

The COVID-19 pandemic came with new challenges for environmental education programmes, educators around the world reporting a series of constraints but also benefits. Staying home more and learning from the immediate environment proved to be a positive outcome giving pupils a sense of belonging to a space and community (Iyengar and Shin, 2020). It clearly affected the schedule and outcome of some other programmes, but it also gave the educators the chance to reinvent their programmes for online interaction, as well as the way of thinking and structuring such programmes dealing with

environmental education, so that this aspect would still be present in educational programmes and become even stronger (Severo *et al.*, 2020). Activities promoting a sustainable lifestyle and social responsibility with the participation of family members (e.g., home-based composting, food waste reduction, sustainable gardening or cooking, recycling) could be examples of environment-related activities that can be undertaken with students of all ages. All these give good premises that environmental education will be a constant concern of educators all over the world even in challenging times.

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