
**FORMATION OF ECOLOGICAL ATTITUDE TO FOOD THROUGH TRAINING
IN SCHOOL**

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Abstract: The intensive daily human activity leads to deepening of the already existing problems in the world related to different types of waste, including food. Environmental risks show multi-layered and mixed dynamics. There is an emergent need for in-depth examination of the relationship between society and the environment. The processes of managing and establishing an attitude to food are complex and influenced by many factors. They are biological predispositions, sensory – affective, social, economic, cultural and educational. One of the means to achieving sustainable environmental development is to choose the right and appropriate mechanisms of school and family education, intertwined with effective technologies in the different spheres of life. Proper environmental education and competence building can be the basis of building a new lifestyle, value orientation and willingness to conserve natural resources. It is necessary that the process of forming an environmental attitude towards food is part of the attitude as an extension of the human-nature axis and that it is related to the introduction of innovative solutions in education and practical training in the school environment. Conducting adequate studies can present environmental attitudes towards food to teenagers, and then specific recommendations to enrich the education in different aspects in order to foster proper ecological culture and consciousness.

Key words: ecology, education, food, sociology.

1. INTRODUCTION

The problem with food as a resource and waste is one of the most recent ones in modern society Benett, M. K., 1941¹. The world produces twice the amount of food Grazhdani, D., 2016² needed per person (Fox Ceng, 2013)³. The UN Food and Agriculture Organization (FAO)⁴ found that around 1.3 billion tons edible food is lost annually, or 1/3 of the total quantity produced. The losses according to Parfitt, J. et al., 2010⁵ are known as food waste, which in turn generates 3.3 gigatons of greenhouse gas emissions per year. There is growing interest in scientific circles towards research that can improve awareness and resource extraction efficiency so as to reduce consumer chain losses in everyday life. The inclusion of different social classes in these activities requires individual efforts Karim Ghani et al., 2013⁶. In the chain of management and decision-making related to managing and creating an attitude towards food, a significant indicator is the culture, perception and attitude of the individual and society as a whole. Contento, I. R., 2010⁷ describes it as a complex process, influenced by socio-economic, cultural and educational factors and aspects. Households generate half of the world's waste, according to EU surveys (2008)⁸. Adult individuals are the ones who generate the big losses. Mostly perishable products such as bread and bakery products, dairy products, meat and fish are lost (Percan et al., 2006⁹; WRAP 2008¹⁰; Morgan, E., 2009¹¹), which take up a major share of the total volume of waste. Their consumption and losses have an impact on natural resources and create a negative impact on the environment (IPCC, 2007)¹². Important factors for food acceptance and efficiency in managing it (Vermeir, I., and Verbeke, W., 2008)¹³ are personality, knowledge, level of education, as well as common beliefs and environmental concerns, as noted by Laidley, T.M., 2011¹⁴; Milfont et al., 2006¹⁵, Brundland G., 1989¹⁶. The most common reason for ecological passiveness – 51.7% according to Dulov, V., 2010¹⁷ is the lack of confidence that the efforts made will have a real effect. THE UN Food and Agriculture Organization (FAO)¹⁸ tracks how knowledge alters the attitude of the individual to the loss of edible food resources and, hence, the tendency to waste food and turn it into waste. The introduction of the UNESCO United Nations Environment Program – UNEP in 1976 aims specifically to raise awareness of the value of food and the impact of its loss on the environment (Brynjarsdttir, H., et al., 2012)¹⁹. Research in recent years has called for a rethinking of individual environmental behaviour as a social practice influenced by social policy (Lee, T., and Koski, C., 2012)²⁰. Within the pedagogical and social sciences, a different, productive and promising way out of the critical situation is possible. The education system is part of

the social one and its development is influenced by political, economic and socio-cultural trends, factors and strategies Kostova, Z.²¹ It is management and regulation is based on regulatory documents of different statute. For Europe, the European Competence Reference Program²² and the European Qualifications Framework for Lifelong Learning (EQF)²³ are in place. According to Manning, R., E., (2009)²⁴ goals can be achieved by forming a responsible, value-oriented attitude for and not against nature through the processes and opportunities of environmental education, as well as enhancing environmental culture in schools. It is necessary to establish environmental competences among the students, (Vakleva, Zl., 2008)²⁵. As well as the education to participate in the formation of the value system Mantarova, A., 2010, Mateev., G., 2001²⁶ on the axis of man and nature and to introduce innovative solutions in practice through a prepared teacher resource.

2. MATERIALS AND METHODS

For the purpose of this study, a survey of teenagers was conducted as a specific group, which is particularly important in examining the value attitudes of food as a resource and waste. With the help of the surveys we developed, containing 19 questions, we are looking for an opportunity to understand and analyse the attitudes and trends in the development of ecological culture among our respondents. (Moskovici, S., Jodelet, D., Viet, J., Bessnard PP., 1972²⁷, Bon, F., 1972²⁸, Bacher, F., 1982²⁹, Berthier, N., et Berthier, F., 1978³⁰; Bourdieu, P., 1980³¹, Boudon, R., et Lazarsfeld, P., 1965, 1966, 1970^{32, 33, 34}.) It examines the specific opinions of different groups of teenagers on their education and knowledge about food as resource and waste and traces their daily behaviour in this regard. There are 3 open and 16 closed questions. In this study, only the part of the questions related to the education received in school on the subject was used. 224 adolescents aged 12 to 18 were interviewed. Students from the city of Plovdiv, who study at different types of schools, were studied in order to reach a wider range of respondents and to ensure greater representativeness of the collected data: schools with specialized classes in the field of food technology and technique, elite and high schools of humanities with affinity to social and human science, private and state secondary general education schools. The results obtained are processed by SPSS using quantitative methods for analysing the respondents' answers to the given environmental problem.

Grade	6-th grade – 12 year olds	14	6.4%
	7-th grade – 13 year olds	14	6.4%
	8-th grade – 14 year olds	13	5.9%
	9-th grade – 15 year olds	54	24.5%
	10-th grade – 16 year olds	15	6.8%
	11-th grade – 17 year olds	52	23.6%
	12-th grade – 18 year olds	58	26.4%
	Total	220	100.0%
You are	Male	85	38.8%
	Female	134	61.2%
	Total	219	100.0%
Do you leave leftover food?	Yes	124	55.4%
	No	100	44.6%
	Total	224	100.0%
Where do you throw away the leftover food when you're at school?	I leave it in the classroom (on the floor, under my desk in the bin)	25	11.4%
	In the recycling bins in the school yard or outside the school	96	43.6%
	I give it to an animal	71	32.3%
	Other (designated waste sites)	7	3.2%
	I don't throw it away, everything is eaten	40	18.2%
	Total	220	100.0%
How often are you a witness to how your classmates leave uneaten food to become waste?	Every day	89	39.7%
	At least once a week	26	11.6%
	Sometimes	94	42.0%
	Never	15	6.7%

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	12-th grade – 18 year olds	58	26.4%
	Total	224	100.0%
Where does your family throw away the leftover food?	In the bin at home/school	97	43.3%
	Gives it to somebody	6	2.7%
	Gives it to an animal	103	46.0%
	We don't throw food away	37	16.5%
	Other	4	1.8%
	Total	224	100.0%
Does your family talk about the way of eating and the food as a waste?	Yes	117	52.5%
	No	106	47.5%
	Total	223	100.0%
Is leftover food garbage according to you?	Yes	21	9.5%
	No	201	90.5%
	Total	222	100.0%
Is it necessary to spend time in school to learn about nutrition issues and food as a resource?	Yes	174	77.7%
	No	50	22.3%
	Total	224	100.0%
Do you get enough knowledge about the importance of food in school?	Yes	72	32.6%
	No	149	67.4%
	Total	221	100.0%
In what form would you like to receive information and knowledge about food as a resource and waste?	In biology class	67	31.0%
	Through information boards in school	42	19.4%
	Through specialized lectures by external lecturers	65	30.1%
	Through visits to specialized units, connected to nutrition	73	33.8%
	Total	216	100.0%
Where do you want to learn more about how to get and use food?	Family	44	20.4%
	School	48	22.2%
	Friends	5	2.3%
	Internet and the television	36	16.7%
	All of the above	100	46.3%
	Other (specialists on nutrition, books, outside of class activities)	13	6.0%

3. DISCUSSION

The first impression of the analysis of the results obtained is the higher number of female respondents, who are 61.2 % of the adolescents. Probably the higher percentage is related to the specifics of the Bulgarian schools, but for us this is an important indicator because a number of studies find that women have a higher level of concern regarding environmental issues and predisposition to sustainable behaviour which contradicts the answers to "Do you leave leftover food?" where the answer "Yes" is 55.4% and "No" – 44.6%. With the question "Where do you throw away the leftover food when you're at school?", we find that only 11.4% leave it under their desk in the classroom. And while only 18.2% do not throw anything away, 43.6% throw it in the bins in and out of school. The contradiction between these data and those indicated by the answers to the question "Is leftover food garbage according to you?", are interesting, given that they are inconsistent with actual practice – in this

case, 90.5% of the students indicate that it is not garbage and only 9.5 % said the opposite, although almost half of them had previously indicated that they are throwing away their food. Moreover, 39.7% of the students of different ages included in the study indicate that they see on a daily basis their classmates throw their snacks or lunch into the garbage cans. The percentage of those who say they only see this occasionally is slightly higher (42.0%), while only 6.7% of them have never witnessed such actions. It is clear from the respondents' replies, that the main practice of managing food waste in their families is their disposal in the waste bins, which is 43.3% of the cases, and confirms the studies made by the EU, 2008⁸. Almost the same percentage (46.0%) indicate that food is given to an animal and only 2.7% prefer to give it to a person. The percentage of families that do not dispose of food is significantly smaller – 16.5% – and only 1.8% of respondents say they do it differently without specifying whether it is related to composting processes or other types of food treatment. These results definitely correspond in an interesting way to the data obtained from the answers to the question "Does your family talk about the way of eating and the food as a waste? ". More than half (52.5%) of the students say that their families are talking about food as a waste, while 47.5% respond negatively, i.e. that this important issue is not being discussed in the family. A very interesting indicator is the lack of such a discussion at school and the little knowledge that is gained there about food as a resource and waste. In this regard, the results for the answers to the question "Is it necessary to spend time in schooling to learn about nutrition issues and food as a resource?" are especially indicative. 77.7% of respondents replied affirmatively to this issue, insisting on the need to discuss this issue. It is clear from the empirical data that teenagers do not receive enough information about food as an energy source and natural resource, and that its production is among the main polluting activities on a global scale that exploit a variety of non-renewable natural resources in enormous proportions. Most of the students do not know that food once produced, along with its accompanying polluting activities, causes the effects of subsequent contamination through rotting processes – a problem whose solution is still on the agenda as a necessity (Brynjarsdttir, H., et al., 2012)¹⁹ 67.4% of the surveyed students at all ages say that the information and knowledge they receive at school about the importance of food for them is not enough and would like further education in this regard. Once aware of the poor knowledge of the problem, they want the ignorance to be compensated by introducing a variety of sources of additional knowledge that could form specific environmental competencies about food as a resource and waste. (Vakleva, Zl.)²⁵ These compensatory mechanisms could be related, for example, to visits to specialized units connected to nutrition – as mentioned by 33.8% of students, or to the introduction of specialized topics in biology textbooks (31.0%), and the introduction of information boards at school (19.4%). The opinions and recommendations expressed show the openness of Bulgarian students to the topic of the importance of food as a resource and waste and the awareness of the lack of sufficient information they expect to receive in different and interesting ways.

4. CONCLUSION

The study and its results are evidence of the need to seriously rethink nature conservation priorities, also referred to by Mantarova, A., 2010, Mateev, G., 2001, as well as to limit actual pollutants in our everyday life. Such a change in the attitude towards ecological problems can only involve a change in the understanding of food as a resource and waste. This need to form new attitudes, as well as the transformation into a public value, is inevitably linked to the effects and opportunities of the educational process in biology education. With the introduction of the new educational subject "Civil Education and Biology" in the following years in Bulgarian schools, a step is made in the right direction towards the progressive implementation of the change in students' attitudes. Our view is that a separate methodological unit could be developed, that is devoted to and works towards increasing environmental competence in relation to food as a resource and waste, which operates similarly to those developed in the work of Natasha Tsanova and Nadezhda Raicheva and already introduced in the practice of "Methods of teaching biology theory and practice". In Bulgarian education, analysis Tsanova, N., and Raycheva, N., 2012³⁵ in the "Cultural and Educational Field" KOO "Natural Sciences and Ecology" are emerging as new titles and comprehension study subjects "Environment" (2 grade), "Man and nature" (3 - 6 grades), "Biology and Health Education" (7-12 grades), "Chemistry and Environmental Protection", "Environment". With a total of 946 teaching hours within the curriculum of 1-12 grade at school, compared to the same period of time for Bulgarian language and literature – 1955 teaching hours and Mathematics, Informatics and Information Technologies – 1380 hours.

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