



**Mile S. Srbinovski<sup>1</sup>**

**South East European University, Institute for Environment and Health, Tetovo, The Republic of North Macedonia**

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## ***Environmental Attitudes of Macedonian School Students in the Period 1995-2016***

### **Extended summary**

There are two reasons for increasing the environmental quality in the Republic of North Macedonia: (i) our country faces major challenges in the field of environmental protection and improvement, especially in terms of air pollution (e.g. some North Macedonian cities are among the most polluted cities in the world), and (ii) as a country aspiring to join the European Union, North Macedonian institutions have an obligation to meet the EU criteria in this field. In this situation, it is important to develop our citizens' awareness and encourage positive attitudes towards the environment, as the predictors of an eco-friendly behavior.

The main purpose of this research is to analyze the environmental attitudes of the North Macedonian students over the last 22 years. The first step in the research was to create specific, clear, unambiguous, and structured questions. The second step was to undertake a thorough research of the relevant literature (papers both in electronic and printed forms) without language restrictions. The third step was assessing the quality of the research. The next step was to summarize the evidence or synthesize the data. This step involves the tabulation of the research characteristics and results, as well as the use of statistical methods for exploring differences among the studies. Interpreting the findings was the fifth step. Data analysis was conducted both in the context of the social-economic conditions and the formal education in the Republic of North Macedonia.

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<sup>1</sup> [m.srbinovski@seeu.edu.mk](mailto:m.srbinovski@seeu.edu.mk)

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Three different instruments have been used to collect the data over the period under the review: The Scale of Attitudes -SA-3 (Kundačina, 1991), The Scale of Attitudes-SA-6 (Srbinovski, 2001), and the New Ecological Paradigm Scale- NEP scale (Dunlap et al., 2000). A sample of 6387 students from both primary and secondary schools (46 and 86, respectively) was included in the research.

The average values of the students' environmental attitudes are within range 2.84-3.90. The maximum value was recorded at the beginning of the survey period, and the lowest value was obtained during the last survey. The mean of the students' attitudes for the period under review is approximately 3.50 or 70%, which indicates the respondents have expressed moderately positive attitudes towards the environment.

In terms of the instrument applied, we can divide the researched period into three sub-periods: the sub-period 1995/96-1997/98, when SA-3 was applied; the sub-period 1999/2000-2011/12, when SA-6 instrument was applied, and the sub-period 2015-2016, when the NEP scale was applied. The level of students' attitudes towards the environment in the first and the second sub-periods is about 3.89 or 77.80%, and 3.47 or 69.40%, respectively. This shows that students highly value the balance in the environment, which is a precondition for the survival of all living things, including humans. The majority of the students also consider people/humans to be the most responsible factor in the environmental protection. The level of students' attitudes towards the environment in the last sub-period (2015-2016) is approximately 2.84 or 56.80%.

Some authors (Robottom & Hart, 1995) believe that historical, social and political contexts within which individual and group actions take place are the key factors which must be included in this type of research. Among the factors that influence students' attitudes toward the environment in the North Macedonian context are the social-economic conditions (understanding, environmental awareness, social safety, economic development) and formal education (curricula, didactic materials - textbooks, environmental knowledge, and teaching process). Since people's environmental attitudes change very slowly, environmental attitudes should be created in the young minds of pupils during the earlier years of education and as soon as possible.

The results of this systematic review provide an intriguing insight into students' attitudes over an extended period of time by using different scales. Next, we offer several insights for future research, reflecting upon the limitations of the current study. This research could be used by the environmental education community for building a more effective dialog with the education community. Further research is needed to clarify the real complexity in the development of students' attitudes towards environment, including other factors by using more sophisticated instruments, e.g. NEP scale, revised NEP scale, 2-MEV scale, Revised 2-MEV scale, etc. It would be very interesting to analyze the results via a meta-analysis procedure (e.g. Schmidt-Hunters' procedure) and to formulate a model of environmental attitudes. Developing a model that tries to incorporate all factors might neither be feasible nor useful, but we feel that it can help illuminate this complex field.

**Keywords:** attitudes, students, Republic of North Macedonia, factors.

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