

# NATURE SCHOOLS IN THE REPUBLIC OF SERBIA

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## Abstract

The first open-air schools date back to the Middle Ages. Today, teaching in nature represents a form of educational work that covers compulsory subjects, elective programs, project-based learning, and extracurricular activities in the curriculum for the first cycle of primary education. This kind of work is carried out in climate-friendly places for health-recreational and educational reasons. To determine how much class teachers in the Republic of Serbia do this type of work, a questionnaire was developed and distributed to over 100 elementary schools. The research results show that teaching in nature is mostly carried out in the fourth grade, most often in the mountains, in the month of May, lasting for 7-8 days. The suggested hypotheses predict statistically significant differences between the attitudes of teachers of different gender, years of work experience, school location, and regarding whether teachers conduct classes in nature at all, in different grades.

**Keywords:** nature schools, Serbia, primary education, teaching in nature, teachers' attitudes

## INTRODUCTION

In the teaching process, there is an increasing emphasis on the independence of pupils, their ability to use different sources of knowledge, the integration of knowledge from different fields, the practical application of knowledge in solving problems in everyday life and creating conditions for the most diverse and creative participation of pupils in the teaching process. As one of the key goals of the educational process is to enable students to learn on their own, the preference is given to those forms and methods of work that contribute to a more active attitude of the pupils towards the teaching content, establishing a closer link between the knowledge acquired in the classrooms and

real-life problems and situations. Hence pupils are given opportunities to get to know and learn about their natural and social environments in different settings. The best way to get pupils acquainted with the nature that surrounds them, and the society that can directly or indirectly affect the environment, is to organize classes or schools in nature.

There is not enough information nor a more thorough and comprehensive research into the question when exactly nature schools started to be organized. We have found information about that in a diverse, but not rich literature which, after considering other pedagogical problems, also addresses this one.

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## DEVELOPMENT OF NATURE SCHOOLS

First nature schools can be found in ancient history. The pedagogical ideas of the humanists acknowledged the demand for approaching nature, for following nature in everything including education. During the fourteenth and fifteenth centuries, special merit for the theoretical and first practical realization of the idea of a nature school belonged to the Italian humanist educator Vittorino da Feltre (1378-1446), who, at the invitation of the Duke of Montana, Francesco Gonzaga, organized a school located in a castle, out of town, on the shore of the lake, called the "Home of Joy", in which he educated his children.

With the development of capitalist relations during the eighteenth and nineteenth centuries, the government recognized the importance of education for the advancement of society, so it took care and control of primary schools, and the school became separated from nature temporarily, but for quite a long period of time. Urban life slowed down and made it difficult for people to adapt to these conditions, compared to the earlier environment in which they lived, and the consequences of this were particularly felt in the environmental problems of cities and the health problems of urban residents.

In the late nineteenth and early twentieth centuries, to overcome the weaknesses that were present in the system of education and organization of educational work in the schools of Central and Western Europe, a whole series of reform movements appeared, within which the idea of an open-air school and classrooms in the field appeared, intended primarily for the sick and the children of more tender health. These schools should, under favorable climatic conditions and appropriate specific organization of educational work, strengthen health and improve psychophysical development (Nikolić, 1994; Mladenović, Milić, 2018). Working in classrooms in the field has proven to be a good solution, especially for children with tuberculosis who have subsequently fulfilled their school obligations in the fresh air.

At the initiative of doctors and educators, the first forest school was opened in 1904 in the Berlin suburb of Charlottenburg, for normally endowed children who inherited poor health or were weak and lagging in their social development, or poorly progressed due to anaemia and poor nutrition in schools. This school was in a pine forest (Adžić, 1924). Several pupils were permanently in school, while a considerable part of them, together with their teachers, came to school daily by organized transport. The curriculum that was implemented was kept to a minimum because the primary goal of the school was to strength-

en health, which is why a considerable amount of time was allocated for play, rest and recreation. Knowledge was gained through direct work and experience in nature, in classrooms in the field, separately for the gifted and children with disabilities. This place has been jointly selected by educators and physicians. Later nature schools were intended not only for children who were ill but also for the healthy ones (Nikolić, 1994). The idea of classrooms in the field was realized at that time in Italy, France, and Hungary (Mladenović, Milić, 2018).

Nature became a great workshop and classroom and presented a better opportunity for pupils to gain new knowledge than they could in an indoor classroom (Bandur, Veinović, 2008). The pedagogical values of the newly constructed nature schools were extremely significant and their number increased year by year (Nikolić, 1992). Even today, a nature school is a modern form of educational activity (Stanojlović, 2000).

At the initiative of the teacher and school principal Sreten M. Adžić, in 1908, the first classrooms in the field were opened in the experimental garden of the famous school for teacher education in Jagodina. Although they were opened only a few years after the opening of the first school in Germany, there was a difference in goals. In the teacher education school in Jagodina, they were intended for healthy pupils only, to prevent the bad influence of the built-up classrooms, while the German and English ones had a therapeutic aim, that is, to treat already vulnerable children (Nikolić, 1994). Such schools had a positive impact on the overall psychophysical development of children. In the classrooms in the field, regular theoretical and practical classes were conducted in almost all subjects, with specially constructed, non-built-up green space, throughout most of the year when external conditions allowed it (Petrović, 2018; according to Djordjević, Lazarević, and Nedeljković, 1998). The construction of field classrooms represented a modern step forward in education in Serbia in that time (Mladenović, Milić, 2018,86). According to S. Adžić, no country in Europe had a classroom in the field so arranged. Knowledge was gained through direct experience and practical work. All schools of this type justified their existence, that is, they had a positive effect on the overall psychophysical development of children (Nikolić, 1994).

In the post-war period, along with the reconstruction of the war-torn country, intensive work was done to expand the school network. However, their purpose then significantly differed from the tasks of the

nature school today. Considering the results that were expected in terms of education, upbringing and the health of children and youth in nature schools, all material investments and subjective efforts made to develop it are pedagogically and socially justified.

In the Republic of Serbia, there is a long tradition of organizing classes through programs of a nature school. Some of the areas where the nature school is organized are Divčibare, Letenka, Testera, Kopaonik, Tara, Fruška Gora, Belo Blato, Petnica and others.

## THE CONCEPT OF NATURE SCHOOLS AND TERMINOLOGY EXPLANATION

Before defining the term *nature school* itself, it should be noted that there were different approaches in the explanation of this term. In the past, this type of activity came under different titles: *schools in the free nature, forest school, country farming homes, school homes in the country, school in the open air, educational homes in the nature, air school, sun school* etc.

Nowadays, a few terms have emerged that have their genesis and substantially express the essence of this activity, such as: *summer school, recreational teaching, nature school, teaching in nature, outdoor learning, school field trips, outdoor classrooms* etc. In Russia, such schools are called *лесная школа* - a forest school, while in Britain *open-air schools* - a school in the free nature.

There are very clear common features of this differently named forms of upbringing in the immediate nature:

- They were in the countryside outside populated areas,
- They had a purely healthy and educational character.

In our country, the most widespread term was *recreational teaching*, which means planned, permanent, systematic organization and creative acquisition of knowledge through learning, play and fun, based on a variety of sources of knowledge and student-centred activities in the free natural environment under the professional guidance of teachers and other educational staff. Dr Ljubica Prodanović (2005) under *recreational teaching* implies a special form of teaching that takes place outside the school premises, usually in nature.

The most complete definition of the term *nature school*, which is the most adequate and comprehensive, was given by B. Stanojlović and S. Simić (1984): this term means a special form of full-day organization of educational activities of a boarding school, which is realized outside the place of residence in the natural environment, with extended pedagogical activity through leisure activities. Educational work relates to the psychophysical recreation in nature, and the realization of educational contents, determined by the curriculum, adapts to the specific conditions of the natural and local environment, addresses those

contents to which these conditions are the most appropriate and in which they can be most successfully achieved. All educational work is carried out under the professional guidance of teaching and extracurricular staff.

Such a definition of the concept of a *nature school* incorporates all of the above concepts and fills them in with content. *Nature school*, compared to other forms of work, has broad and significant tasks with a high pedagogical level of organization of life and work, rich and functional structure. This term was the most appropriate and comprehensive because it included all the contents covered by the actual activities of the nature school.

The Rulebook on the Organization and Realization of Teaching in Nature and Field Trips (Official Gazette of the Republic of Serbia, No. 30/2019) defines this form of work as *teaching in nature*. According to this rule, *teaching in nature* is a form of educational work through which compulsory subjects, elective programs, project teaching and extracurricular activities from the curriculum of teaching and learning for the first cycle of primary education are carried out in a climatically suitable place for health, recreational and educational reasons. The Rulebook precisely defines the goal, tasks, contents, curriculum in nature and more.

The class teacher takes care of the organization and realization of the regular classes and envisaged activities, as well as the safety of the pupils during the process. The teacher should respect the individual characteristics of the pupils, the differences in their needs and abilities and encourage cooperation and teamwork, independence, and personal responsibility. With the replacement of regular classes, there are many teaching and extracurricular activities that should be carried out in the natural environment - independent student activities, sports and recreational and cultural activities, games and entertainment, passive and active rest. Teaching in nature can take up seven to ten days. The director of the institution (the principal) (Official Gazette of the Republic of Serbia, No. 30/2019) is responsible for the legal matters regarding teaching in nature.

How important and effective the natural environment is for the acquisition of teaching content, which is primarily applicable in real, everyday life, can be

seen in the results of research by numerous authors. Golubović-Ilić (2014) states that by direct contact of pupils with sources and objects of knowledge that are in authentic environment, greater dynamics and intensity of the teaching process are achieved. Turtle et al. (2015) pointed out that in *forest schools* for example, through play, children can gain an understanding and appreciation of the natural environment and at the same time, improve physical, social and emotional well-being.

Through primary education, it is very important to encourage and strengthen the predisposition of schools and children to go outside, to ensure that

young people leave school with a greater understanding of the environment and a positive attitude towards it (Heras, Medir & Salazar, 2019). Outdoor classrooms, which are increasingly used in educational establishments, fulfil two key functions. The first function is related to fomenting environmental empathy, connectedness to nature, and attitudes and respect for nature; and the second function is to help children and adolescents with adjustment problems to achieve greater motivation and school integration while promoting pro-environmental behaviours (Musitu-Ferrer, D., Esteban-Ibáñez, M., León-Moreno, C., & F. García, 2019; Yaman, Abdullah, Rozali, & Salim, 2018).

## METHODOLOGY OF RESEARCH

The aim of the research was to involve as many teachers as possible from different regions in Serbia, both urban and rural, to determine their opinion on realization of *nature schools* in the Republic of Serbia. The purpose of the research is to show if teachers agree on key questions regarding the organisation and realisation of *teaching in nature* and how much their views about that kind of teaching are similar or different.

It was assumed that the teachers of different gender and place of employment gained different experiences related to *nature schools* and have, therefore, developed different attitudes towards this kind of schools. The starting hypothesis was that teachers agree with the importance of realisation of *nature schools* and that it is necessary to carefully plan and organise this kind of teaching. The hypothesis included in the research stated that there are statistically significant differences in the attitudes of the respondents.

### Data collection

In this study, the field survey method was used. The design of the questionnaire was based on the original study. The research was conducted during the school years 2017/2018 and 2018/2019. The sample was random. After the survey was completed, there were 130 correctly completed questionnaires. The respondents were of different gender and work experience, were not employed in the same schools nor lived in the same place and were class teachers. The research was conducted on the territory of the whole Republic of Serbia in both urban and rural environments. The participants voluntarily agreed to participate in the study.

### Research instruments

A three-part questionnaire was used in data collection. The research was conducted through personal survey and every respondent was given the question-

naire. The first part collected mostly demographical data. In addition to gender and years of work experience, respondents were asked to write which school they work at and where they are located. In the second part of the survey, respondents were asked to declare whether they were organizing a *nature school* for pupils from the first to fourth grades of primary school. If yes, the place and accommodation facility of the *nature school* should be given, how many days it takes and the month when it is organized.

The third part (15 items) was a 5-item Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) that measured attitudes toward this kind of teaching. The content of the questionnaire is original; it is not based on any available research of this type.

### Data analysis

The obtained data are analysed using statistical program SPSS, version 23. The most common statistical analyses that have been applied in this research include: an initial descriptive statistical analysis followed by the t-test analysis for independent samples and the one-way analysis of variance, ANOVA. To determine how significant the difference is among individual groups, the post-hoc Scheffe test was used as one of the most rigorous and most commonly applied tests. The t-test of independent samples was applied to compare the arithmetic means of two groups of respondents: male and female, teachers working at primary and secondary schools, teachers working at the city and village schools. The application of the one-way analysis of variance, ANOVA, was used to investigate if there is a statistically significant relationship between dependent variables (items related to the attitudes of the respondents) and independent variables (social characteristics of the respondents).

## RESULTS

The respondents were mainly teachers with 16 to 25 (36.9%), and over 26 years of work experience (33.8%) (Table 1). There were fewer respondents with 6 to 15 years of work experience (20.8%) and the fewest respondents included those with less than 5 years of work experience (8.5%). All respondents work in primary schools (100.0%). Based on the work environment, the results were as follows: 76.2% of them work in city schools, while 23.8% work in rural schools. Based on gender, most of the respondents were women (89.2%). This was expected as there are, generally, more female teachers than male. Only 10.8% of men participated in the research.

**Table 1.** Respondents by gender, location (urban and rural) and years of work experience

Gender	Frequency	Percentage (%)
Male	14	10.8
Female	116	89.2
Total	130	100.0
By location	Frequency	Percentage (%)
Urban	99	76.2
Rural	31	23.8
Total	130	100.0
By years of work experience	Frequency	Percentage (%)
less than 5 years	11	8.5
6-15 years	27	20.8
16-25 years	48	36.9
more than 26 years	44	33.8
Total	130	100.0

Research results show that most class teachers do not organize a *nature school* in the first grade (60.8%). Those who take the pupils, usually choose Divčibare for this type of educational work (19.6%). Sokobanja was in the second place with 11.8%. Other places include: Gučevo, Bukulja, Tara and others. Most teachers did not answer the question regarding the accommodation facilities, so we will not mention them in this research. Regarding the duration of the nature school, the results show that the pupils mostly stayed for 8 days (37.2%), in May (39.2%).

In the second grade of primary school, the percentage of teachers organizing the nature school is significantly higher than the previous one - 53.8%. Nature schools are mostly located in the mountains (Divčibare and Tara - 14.3% each, Zlatibor - 11.4% and others). In the second grade, pupils most often spend 8 days in the nature school (27.1%) or 7 (10.0%), again in

May (39.1%). April is the second with a share of 21.7%. The percentage of pupils going to the nature school is very similar in the third grade - 53.1%. The largest number of schools chooses Tara (18.8%) and Sokobanja (17.4%). Other destinations include Divčibare, Zlatibor and Kopaonik. They most often stay for 8 days (36.2%), also in May (36.2%).

In the fourth grade, nature schools are organized more often. From the total number of respondents, as many as 64.6% organize this type of teaching. The most popular destinations are the mountains Tara (20.2%) and Kopaonik (11.9%). The nature school usually lasts 7 days (33.3%) in May (34.5%).

Table 2 shows us the mean values of teachers' responses to the statements from the third part of the survey. Before analysing the results by gender and other variables, it should be emphasized that the statement that there should be a permanent professional staff in nature schools that will oversee extracurricular activities is rated highest 4.30. A nature school requires a very good organization by the teachers. Unless more professional people are involved in this type of teaching, it is very difficult for one teacher to implement all the requirements that influence the school's success in nature. The lowest assessed is the statement that there is little learning in nature schools and that nature schools realize only the entertainment and recreation program at the expense of the implementation of compulsory teaching activities. This clearly indicates that teachers consider that they devote a large part of their time in a nature school to teaching activities appropriate to the circumstances.

The results of the research by gender are interesting. A much higher proportion of female respondents must be considered here, but certainly the data are comparable. Female class teachers are dissatisfied with the facilities used for the realization of a nature school, but unlike male class teachers, they believe that in Serbia there is a large selection of locations for the construction of school facilities in nature. Lack of appropriate professional literature is seen by female teachers as a bigger problem both in the organization and in the realization of the nature school. Both male and female teachers had a uniform opinion about the statement that class teachers were not sufficiently trained, but it can certainly be concluded that they themselves are not sure whether they are fully prepared to perform this type of fieldwork (the average grade of this statement is 2.5). With most statements, the answers by teachers of both genders are uniform, so that, apart from the above, there is no greater difference in attitudes regarding the organization and realization of a nature school.

**Table 2.** Mean values of the respondents' answers by gender and by the settlement where the home school is located

Statement	Gender	Mean values	Place of employment	Mean values
Nature school should have a purely fun and recreational character.	M	2.71	Urban school	2.84
	F	2.80	Rural school	2.65
Nature school is exclusively an educational institution.	M	3.14	Urban school	2.93
	F	2.96	Rural school	3.13
The success of working in a nature school depends to a large extent on normative-legal solutions.	M	3.07	Urban school	3.00
	F	3.05	Rural school	3.23
There are major problems with the organization of the nature school.	M	3.36	Urban school	3.16
	F	3.18	Rural school	3.32
The facilities used to realize the nature school are mostly intended for tourism and do not meet some other standards.	M	3.64	Urban school	3.19
	F	3.08	Rural school	3.00
Improvisation is always present when preparing for the stay and upbringing and educational work of children in a nature school.	M	3.21	Urban school	3.27
	F	3.32	Rural school	3.42
There is a large selection of locations for building facilities for nature schools in Serbia.	M	3.86	Urban school	4.12
	F	4.17	Rural school	4.19
There should be a permanent professional staff in the nature school who will oversee extracurricular activities.	M	4.14	Urban school	4.24
	F	4.28	Rural school	4.32
The organization of work in a nature school requires the extra effort of the teacher.	M	4.36	Urban school	4.26
	F	4.20	Rural school	4.06
The material and technical conditions for the work of the nature school are appropriate.	M	3.57	Urban school	3.29
	F	3.20	Rural school	3.06
The curriculum of a nature school must deviate significantly from the curriculum in a regular school.	M	2.71	Urban school	2.74
	F	2.77	Rural school	2.84
Class teachers are not sufficiently trained for extensive and complex work related to nature schools.	M	2.57	Urban school	2.42
	F	2.53	Rural school	2.87
A major problem in the organization and implementation of the nature school is the lack of adequate literature.	M	3.29	Urban school	2.72
	F	2.65	Rural school	2.71
There is little learning in a nature school. To the detriment of the implementation of compulsory teaching activities, it only implements a program of entertainment and recreation.	M	2.79	Urban school	2.18
	F	2.11	Rural school	2.19
The nature school significantly burden the pupils' family budget.	M	3.29	Urban school	3.44
	F	3.50	Rural school	3.58

If we look at the results in relation to the place of the home school – urban/rural, same attitudes can be observed for most of the statements. However, it must be pointed out that teachers working in rural areas agreed more with the statement that there are major problems regarding the organization of a nature school. This clearly indicates that the requirements of organizing a nature school, starting with the school itself, agencies, and other actors, are far more accessible to teachers working in urban settings.

Table 3 shows the mean values of the respondents' answers depending on whether they are organizing a nature school. The answers are shown by grade.

Teachers who do not realize the nature school were more adamant according to most statements. Namely, they are more in agreement with the statement that

the success of a nature school depends to a large extent on normative-legal solutions. This may be one of the reasons why they do not carry out such teaching, because the experience would show that this kind of teaching requires the flexibility of teachers and all other actors at every stage of achieving the goals and objectives of nature schools. In support of this is the attitude of teachers who do not take pupils to nature schools that there are major problems in organizing them. Those who realize it, however, do not consider that there are major problems with the organization. Teachers who do not conduct nature schools have stronger views about the following:

- Children's accommodation facilities are mostly intended for tourism and do not meet other standards,

**Table 3.** Mean values of the respondents' answers, depending on whether they take pupils to a nature school, by grade.

Statement		1 <sup>st</sup> grade	2 <sup>nd</sup> grade	3 <sup>rd</sup> grade	4 <sup>th</sup> grade
Nature school should have a purely fun and recreational character.	Yes	2.86	2.79	2.71	2.76
	No	2.75	2.80	2.88	2.85
Nature school is exclusively an educational institution.	Yes	3.13	3.04	2.98	2.98
	No	2.87	2.90	2.97	2.98
The success of working in a nature school depends to a large extent on normative-legal solutions.	Yes	3.02	2.97	2.94	3.06
	No	3.08	3.15	3.18	3.04
There are major problems with the organization of the nature school.	Yes	2.55	2.81	2.87	2.90
	No	3.62	3.65	3.57	3.74
The facilities used to realize the nature school are mostly intended for tourism and do not meet some other standards.	Yes	2.72	3.00	2.90	2.96
	No	3.41	3.31	3.43	3.48
Improvisation is always present when preparing for the stay and upbringing and educational work of children in a nature school.	Yes	3.29	3.21	3.19	3.21
	No	3.32	3.42	3.44	3.48
There is a large selection of locations for building facilities for nature schools in Serbia.	Yes	4.06	4.09	4.06	4.15
	No	4.19	4.20	4.23	4.11
There should be a permanent professional staff in the nature school that will oversee extracurricular activities.	Yes	4.20	4.10	4.19	4.24
	No	4.30	4.45	4.34	4.30
The organization of work in a nature school requires the extra effort of the teacher.	Yes	4.16	4.10	4.16	4.27
	No	4.25	4.35	4.28	4.10
The material and technical conditions for the work of the nature school are appropriate.	Yes	3.61	3.40	3.45	3.33
	No	3.00	3.05	3.00	3.06
The curriculum of a nature school must deviate significantly from the curriculum in a regular school.	Yes	2.67	2.59	2.59	2.62
	No	2.82	2.97	2.95	3.02
Class teachers are not sufficiently trained for extensive and complex work related to nature schools.	Yes	2.16	2.27	2.19	2.34
	No	2.77	2.83	2.92	2.87
A major problem in the organization and implementation of the nature school is the lack of adequate literature.	Yes	2.47	2.57	2.56	2.63
	No	2.87	2.88	2.88	2.87
There is little learning in nature school. To the expense of the implementation of compulsory teaching activities, it only implements a program of entertainment and recreation.	Yes	1.94	2.00	2.01	2.01
	No	2.34	2.40	2.38	2.50
The nature school significantly burden the pupils' family budget.	Yes	3.23	3.31	3.26	3.30
	No	3.63	3.67	3.72	3.80

- Improvisation is always present,
- There should be permanent staff in schools,
- Organization requires greater effort of teachers,
- Material and technical conditions are not fully adequate,
- Program content must deviate significantly from the regular curriculum,
- Teachers are not trained adequately,
- There is a lack of adequate literature,
- Nature schools burden the pupils' family budget.

The t-test of independent samples was applied to compare the arithmetic means of two population groups. In this paper, only the results showing statistical relevance at the level of significance  $p < 0.05$  are presented.

A statistically significant difference between the respondents' answers by gender and by place of employment was not observed in any of the given statements (at the significance level  $p < 0.05$ ). This clearly indicates that the hypotheses made about the differences between teachers' responses by gender and different places of work (urban and rural) are not confirmed.

However, if we compare the responses between teachers who have experience in taking pupils to nature schools and those who do not practice this kind of teaching, there are some differences.

The answer for the first grade shows a statistically significant difference only in the statement that the nature school is exclusively an educational institution (Table 4). Teachers who do not conduct teaching in nature have a much more flexible attitude to this statement, while

teachers who have experience believe that it must largely satisfy this criterion. In the 2<sup>nd</sup> grade, a statistically significant difference (at the significance level  $p < 0.05$ ) occurs in two statements. One of them is that there should be permanent staff in nature schools. It has already been noted that this statement is highly rated. Teachers who do not conduct this type of teaching rated it with 4.50,

ferences between dependent variables (items related to respondents' attitudes) and independent variables (respondents' social characteristics). Table 5 presents the results of the ANOVA analysis based on different lengths of class teachers' working experience.

Despite some disagreements, the hypothesis that there is a statistically significant difference in the re-

**Table 4.** The results of the t-test for participants who organize or do not organize nature schools, by grades\*

Statement	Nature school	F	p
1 <sup>st</sup> grade			
Nature school is exclusively an educational institution.	Yes	7.401	.007*
	No		
2 <sup>nd</sup> grade			
There should be a permanent professional staff in the nature school that will oversee extracurricular activities.	Yes	6.885	.010*
	No		
There is little learning in nature school. To the expense of the implementation of compulsory teaching activities, it only implements a program of entertainment and recreation.	Yes	6.696	.011*
	No		
3 <sup>rd</sup> grade			
The curriculum of a nature school must deviate significantly from the curriculum in a regular school.	Yes	4.806	.030*
	No		

\* Table 4 does not show the results for the 4th grade, because there is no statistical relevance at the level of significance  $p < 0.05$ .

\*\*  $p < 0.05$ .

considering that they cannot be the only ones who will participate in the realization of certain contents of nature schools. The second statement is about learning at a nature school. Teachers do not think that there is little to learn in nature, but there is certainly a noticeable difference between their responses because those who organize nature school have expressed a much greater degree of disagreement with the statement.

Out of fifteen statements, only one with a statistically significant difference was observed in the 3<sup>rd</sup> grade (Table 4). Teachers who do not have experience in taking pupils to a nature school find that program content must diverge from the curriculum in regular teaching. Teachers with experience seem to be quite good at conducting the intended teaching content in nature schools and have expressed greater disagreement with the statement.

The use of one-factor analysis of variance, ANOVA, was used to examine statistically significant dif-

ferences between dependent variables (items related to respondents' attitudes) and independent variables (respondents' social characteristics). Table 5 presents the results of the ANOVA analysis based on different lengths of class teachers' working experience.

ferences between dependent variables (items related to respondents' attitudes) and independent variables (respondents' social characteristics). Table 5 presents the results of the ANOVA analysis based on different lengths of class teachers' working experience. Despite some disagreements, the hypothesis that there is a statistically significant difference in the responses of teachers with and without experience in taking pupils to nature school has not been confirmed. The analysis of variance ANOVA shows that there is no statistically significant difference among respondents with different length of work experience. Fifteen statements were tested and only three statistically significant differences were established. Therefore, this hypothesis has not been confirmed. The high level of agreement with the statements suggests that teachers with different lengths of work experience have approximately the same views on the organization and delivery of teaching in nature. Table 5 presents the results showing the statistical relevance at the level of significance  $p < 0.05$ .

Teachers with more work experience (over 16 years) expressed greater disagreement with the statement that they were not sufficiently trained for nature schools, that there was no adequate literature, as well as there was little learning in nature school.

**Table 5.** The results of the analysis of variance, ANOVA, for the respondents with different length of work experience

Item	F	p
Classroom teachers are not sufficiently trained for extensive and complex work related to nature schools.	4.507	.005*
A major problem in the organization and implementation of the nature school is the lack of adequate literature.	3.638	.015*
There is little learning in nature school. To the expense of the implementation of compulsory teaching activities, it only implements a program of entertainment and recreation.	3.285	.023*

Note. \* $p < 0.05$ .

## DISCUSSION

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Teaching content that is closely related to the natural and social environment is still not sufficiently organized in dedicated facilities and moved from the traditional classroom, which still occupies a central place in the processing of content that is in the function of getting to know the world around us. There is a clear need for a greater functional integration of the teaching content, its presentation and acquisition in some other facilities in the natural environment. A considerable number of teaching contents from the 1<sup>st</sup> to the 4<sup>th</sup> grade of primary school can be processed in an acceptable and high-quality way even outside the classroom, although this type of teaching requires much more preparation and engagement of teachers. Some teachers may not be able to use other teaching facilities at some point in time, but their unwillingness and inertia to organize the teaching more actively and move it to other teaching facilities is also present.

There were 130 correctly completed surveys. In fact, there were far more respondents, but a lot of answers were not included in this analysis because it was observed that they identified teaching in nature with, for example, one-day excursions. The work was primarily based on nature schools lasting minimum seven days,

in facilities that are partially or fully adapted for this type of work for pupils from the 1<sup>st</sup> to the 4<sup>th</sup> grade of primary school.

The analysis shows that teaching in nature is not sufficiently implemented in all grades in the first cycle of primary education. In the first grade, less than 40.0% of teachers take pupils to nature school, in the second grade, this share increases to 53.8%, in the third it is 53.1% and in the fourth it is the highest - as much as 64.6%.

In the Republic of Serbia, teaching in nature is most often carried out in the following facilities: Mitrovac on Tara, Stanišinci on Goč, Bukulja in Arandjelovac, Rudnik on mountain Rudnik, "Stevan Filipović" on Divčibare and others. All these facilities belong to the Centre for Children's Summer Resorts of Belgrade and are used for teaching in nature, as well as for camps that are organized during summer and winter holidays. In addition to thematically equipped classrooms, entertainment rooms, sports fields, swimming pools, ski slopes, all facilities also have infirmary and twenty-four-hour health care. Educational excursions, hikes, evening programs are organized in all these resorts (<http://www.cdibgd.rs/nastava-u-prirodi.html>).

## CONCLUSION

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Whatever it has been called, teaching in nature, outdoor school, nature school, outdoor classrooms, the goal has always been the same. The goal has been modified over time to accommodate the needs of the society, the education system, and, above all, the needs of children. They were founded primarily to improve the health of children, but today their importance is immeasurable and far beyond the original foundations. In addition to health, nature teaching has great pedagogical and social importance.

The paper presents the current position of this type of teaching in the Republic of Serbia. The data clearly indicate that it is not sufficiently implemented for some reason and that greater attention must be paid to this issue.

The hypotheses that there were statistically significant differences between respondents of different gender, place of employment, and length of work experience were not confirmed. Some differences are noticeable between the attitudes of teachers who realize or do not realize the nature school. The problem of organizing a nature school, in addition to extensive preparation of the school, teachers, pupils and their

parents, is the very procedure for choosing the location where it will take place.

This way, very clear attitudes of the class teachers were formed regarding the organization and realization of this type of work, as well as defining the problems that teachers face when planning nature school.

One of the following research articles will refer to the attitudes of the subject teachers on the organization of teaching in nature on the territory of the Republic of Serbia. Also, the views of teachers on terminological understandings of the nature school will be examined, how much the contents of different school subjects are conducted outside the classroom, and what are the objects that are most suitable for teaching outside the classroom. Implementation of the subject in the curricula of the teacher education faculties that would cover the issues of teaching in nature and students' excursions would greatly contribute to the further development of such educational systems.

In the era of mobile phones, computers and various electronic games, staying in the open air, fresh air and movement is of utmost importance to pupils.

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