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Do Children go to Field? - The State of Outside-the-School Environmental Education in the Case of Downtown Budapest Schools

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Szőcs Levente Álmos [α], Angyal Zsuzsanna [σ] & Varga Attila [ρ]

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I. Introduction

Perhaps it is not an exaggeration to say that education is one of the fastest changing phenomena. However, this cannot be called a problem, as education was always meant to meet current needs. The question arises as to whether the needs of the present age are different from the needs of previous ages, or are there expectations that are essentially the same as the previous expectations, only new content is added? We think the answer is "yes and yes". There are new needs, but at the same time there are long-standing, constantly evolving expectations in education. Understanding the processes of nature and linking them to human activities, examining and understanding the relationship between the natural and artificial environment, and revising the use of our environment has always been a crucial task, one of the factors that organically determines education and its development. How to renew environmental education? We pursue an education where students build their knowledge through independent research and investigation processes through their own experiences. We believe that environmental education is effective when children work in nature, outside the school walls. But what can a metropolitan school do that, due to its location, is hindered from accessing natural environments? What are the main obstacles for such schools and their teachers? In our research, we seek the answer to these questions through the example of Budapest.

According to our preliminary assumption and experiences, field activities are hardly implemented in downtown schools due to their handicaps. Implementation is hampered mainly by the financial background and the low level of methodological and practical support for environmental education teachers.

II. Processing the Literature

In the development of a positive environmentally conscious attitude, both the foreign and the domestic literature emphasized the importance of the proximity of the natural environment and the positives of a self-organizing learning environment based on research and observation. (TASDEMIR, A. - KUS, Z. - KARTALC, T. (2012), SHY-YONG, J. (2007) and ZIMMERMANN, LK (1996), and HUS V. (2009) By exploring the literature related to the topic, it becomes increasingly clear that the perception of scientific education, including environmental education, has shifted towards child-centered education based on independent recognition and discovery, and experimentation. Thus, institutionalized education can be effective if we recognize that education about the environment can only be done well in the environment.

a) The characteristics of Hungarian scientific education

The Hungarian system of scientific education differs somewhat from the practice developed in Western Europe and the United States. A common feature is the still relatively high rate of theoretical and lexical knowledge transfer and the development of practical skills. This approach seems to be changing at the level of educational organization and management over the last decade (National Core Curriculum, 2020), but it is still very difficult to implement in school practice. This is mainly explained by the high average age of science teachers and the small number of young teachers starting their careers. Although methodological trainings at the universities already place great emphasis on practice-oriented, modern methodological directions that focus on the development of skills, older teachers are less open to them.

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In Hungary, the natural sciences are taught in a basically disciplinary form, only in a few places is the science-type education already proven in Western countries characteristic. Students learn environmental knowledge from 3rd to 4th grade of primary education, which, however, deals not only with the natural sciences but also with their social aspects. In 5th to 6th grade the subject called natural sciences is perhaps the most similar to the integrated science subject, but in fact here too the four disciplines (biology, physics, natural geography, chemistry) appear side by side rather than integrated, the connection points between them are missing. In many cases, within a subject, each discipline is also taught by different teachers. From 7th grade, most schools break down science into four different subjects, and in addition, students study not only natural geography but also social geography in geography. The students also graduate with a chosen scientific subject.

b) *The characteristics of the urban geography of Budapest and the concept of the downtown*

Budapest is the largest city in East-Central Europe. It is located at the confluence of two different landscapes, the plains and the Transdanubian Mountains. The Danube has always played an important role in its development, as it connected the city with the remote areas of the continent as a significant waterway. The city's natural endowments differ significantly on the right and left banks of the Danube. The hills and mountains of Buda, located on the right bank, are built of various sedimentary rocks. The wood and stone of the mountains have been an important raw material in urban construction for centuries. Although a significant part of the forests has been cut down and built upon due to the expansion of the city, the green areas of the Buda Hills play a very important role in improving the air quality of the city. Thanks to the medicinal waters of the springs at the foot of the mountains, Budapest is also a world-famous spa town. Pest was built on the left side of the river, on the lower Pest plain.

The term of the downtown was used based on the following. The center, i.e. the city center (in reference to European cities) is always a densely built-up area around the historic city center, which has undergone many functional changes during the city's existence. Most of them are high-value, with historically significant residential and centrally managed buildings, which in many cases are now service locations (financial sector, offices of ICT companies, etc.), as well as places dealing with tourism, or belonging to the R&D sector. Despite the ever-changing functions, the roles of traditional educational centers and school spaces in the city center remains of paramount importance (KOVÁCS Z. 2007). In another sense, the downtown is a socially based definition. It indicates the part of the city where the population lives in the central part of the settlement, in a densely built-up area, with high population density (BERÉNYI B. E. 2010). From both formulations, densely built-up and high population density can be highlighted. Using these two factors, we can distinguish schools that occupy a downtown position in the urban space. The coverage of the city center in our research is not always aligned with the boundaries of the districts. However, we tried to create well-interpreted borders on both the Buda and Pest sides. On the Buda side, the I., II., and certain areas of the XII and XI. district On the Pest side, the entire V., VI., VII., And VIII. districts and certain areas of the IX. And XIII. districts (Fig. 1.).

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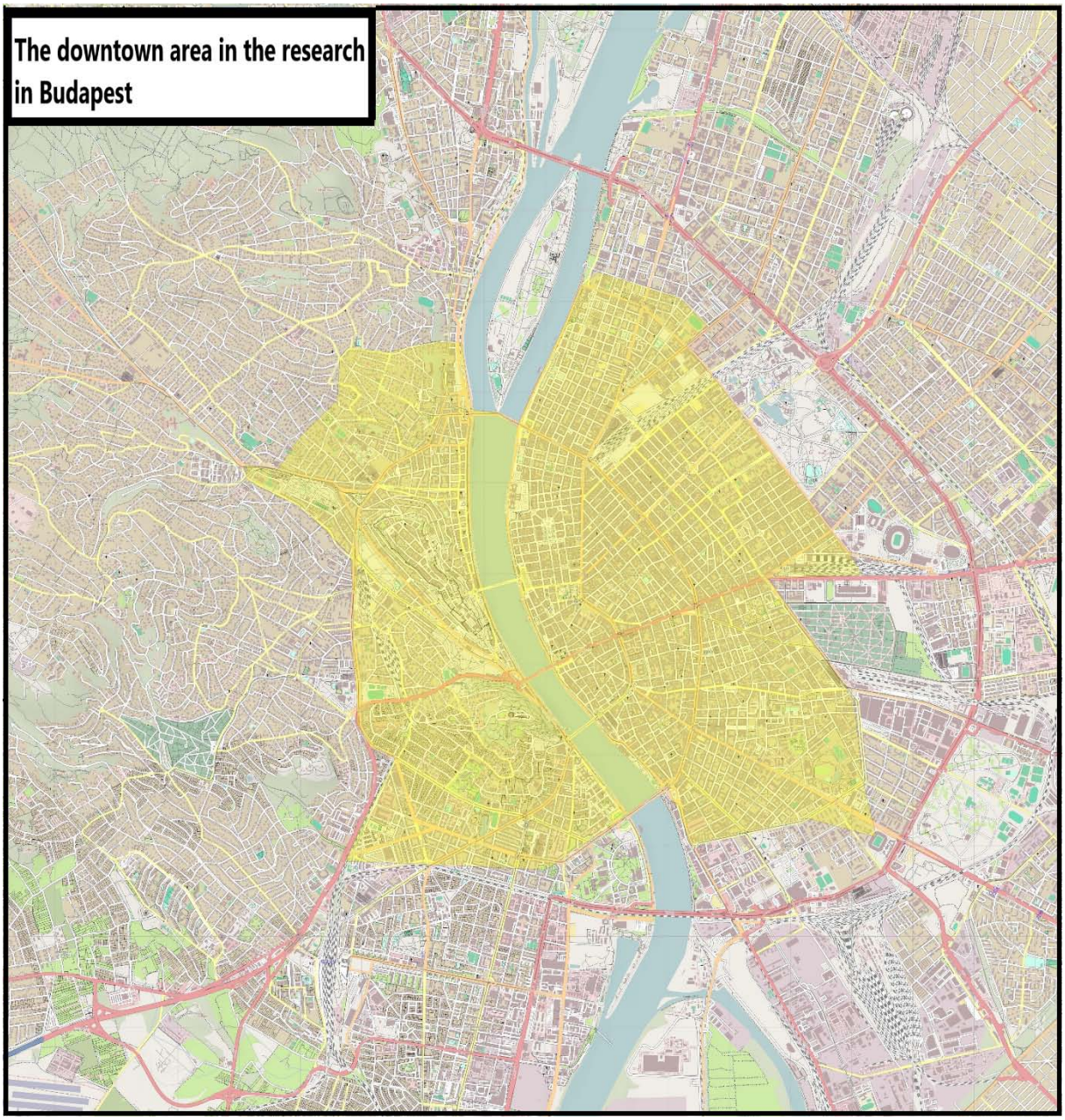

Fig. 1: Downtown districts involved in the research.

III. Methodological Background

a) The schools involved in the study

We believe that schools that are physically far from the natural environment are the most hindered in terms of environmental education. Although the city center is frequented by public transportation, arriving to the natural environment takes a relatively long time. That is why the institutions involved in the research are all downtown schools. The type of educational institution (e.g. state-run, ecclesiastical or foundational) is irrelevant to the study. The survey included both primary and secondary schools, including grammar schools and vocational high schools, but also special institutions for the education of children with learning disabilities.

b) Methodology of data collection

While collecting the data, it was important for us that the responses received were easy to interpret and simple to process. It was important for our study to provide both qualitative and quantitative data, as there are quantifiable responses that can bring useful results (e.g. what percentage of teachers plan a field practice, how many hours they work in the field, etc.). But just as important is the qualitative characterization that enables the development of environmental education (e.g. the most important obstacles, the possibilities of helping teachers, etc.).

A significant portion of the study data was collected by completing an online questionnaire. The

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questionnaire consisted of a total of 14 questions (Appendix 1). Among the questions, questions 1-2-3. applied equally to all respondents. In the third question, we asked whether teachers plan and / or hold field practices. We selected the respondents with the question and then treated the groups separately. Exploring the means of expected support was the task of the second part of the questionnaire. A central element of the research is to find out the factors that make environmental education on the field difficult. We believe that only with the knowledge of these factors and their backgrounds can further thoughtful help be provided. It is essential to highlight the main obstacles, because if we find that the same element proves to be a crucial problem for several schools, it is easier to create a comprehensive developmental strategy. This is why the 12th question asks about the main factor. In addition to the questionnaire survey, in several cases we received accurate information during personal interviews about the main problems that most determine the environmental education of downtown schools in Budapest. During the course of the survey and the subsequent interviews, we consciously separated the schools where environmental education outside the institution does not take place. The opinions and experiences of such institutions on the factors hindering field practice and the possibilities of developing environmental education are especially important. Barriers can be compared to those that limit schools that implement field practices. Finding out similarities, but even key differences, can help to develop both groups.

The results of the research are based on the responses of 60 downtown schools to our questionnaire. The questionnaires were completed by teachers who head the work communities containing scientific subjects at the schools and by teachers who are organically involved in the regular conduct of field activities. During the data collection, we tried to emphasize the factors hindering out-of-school environmental education, as the exploration, description and interpretation of these factors is essential for the meaningful development of environmental education outside the institution.

IV. Result and Assessment

a) Realization of environmental education on the field

After evaluating the results of the survey, it can be said that the vast majority of the 60 schools participating in the research implement environmental education on the field. There are 44 educational locations where these schools engage in some form of environmental education on the field. However, in terms of the number of field practices carried out throughout a school year, we get a very wide spectrum. Of the respondents, 16 are schools where they do not plan and do not hold field classes. This means that more than a quarter of the institutions surveyed do not have field practices. (Figure 2)

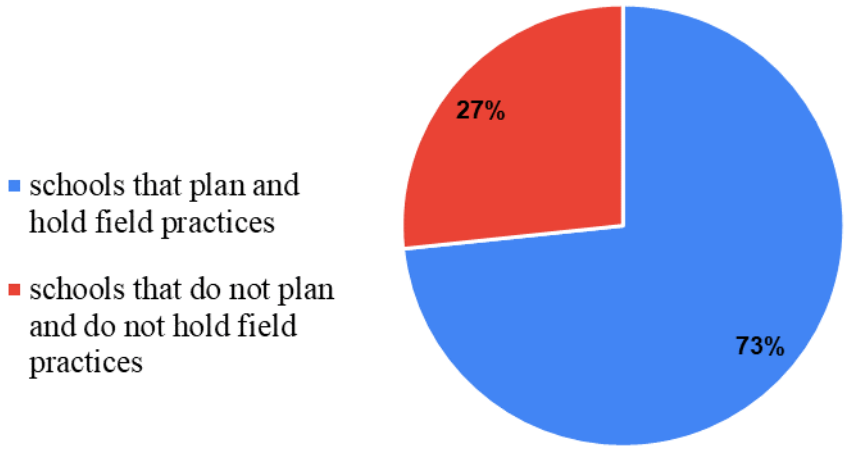

Fig. 2: The rate of implementation of out-of-school environmental education int he examined schools.

From the data, we can see that the circle of educators implementing environmental education on the field can be divided into two distinct groups (Figure 3). One group, to which most teachers belong, only takes its students to an outdoor location for 2-3 lessons a year. The textual answers to the questionnaire and the discussion in the interviews show that these few field lessons do not fit organically into the current curriculum either. In most cases, the institution has set dates in the school year when out-of-school classes can be held. Teachers in the other group, on the other hand, hold field lessons more than ten times. Only two institutions hold 6-10 field sessions. The extremes of the implementation of out-of-school environmental

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education are highly perceptible, as there are either very few field activities or very many. In any case, it should be emphasized that there are nine downtown schools with more than ten lessons per year in external locations.

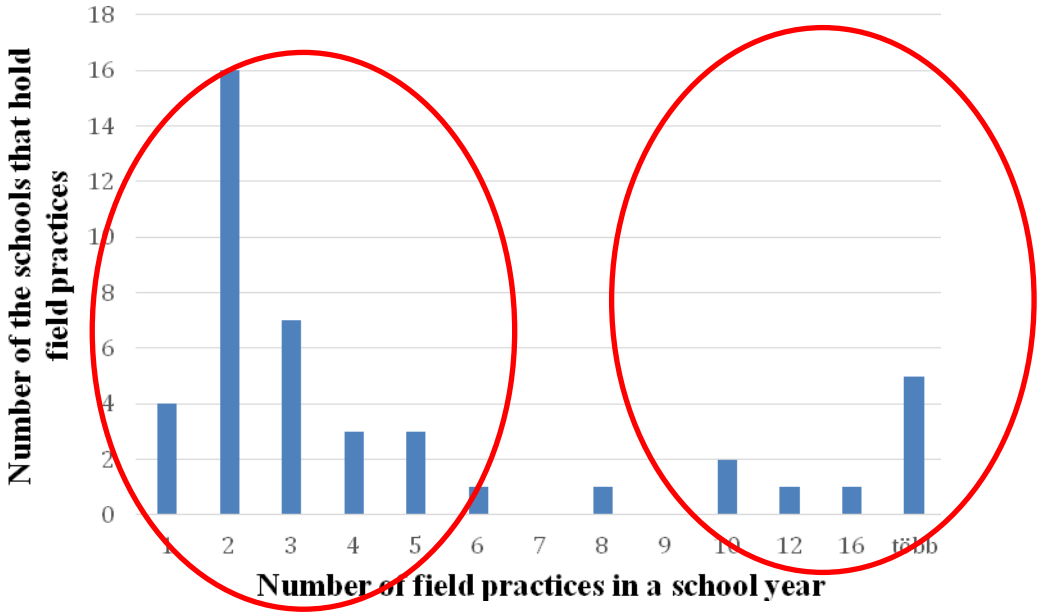

Fig. 3: Number and frequency of lessons held at outdoor sites.

b) The results of teachers regularly holding field practices

It is evident from the survey that the schools that plan and hold field practices (both the teachers who only implement a few occasions and the teachers who plan regular field practices) are hindered by the same circumstances as the schools that do not hold any programs outside the classroom. For the sake of effective development, it is advised to hold such a professional dialogue in which teachers who plan and hold field practices are involved. Therefore, during the survey and the interviews it was of crucial importance that the teachers voice their opinions and the directions of development that they believe to be pivotal. Figure 4 shows the typical answers to obstructing circumstances, and their frequency.

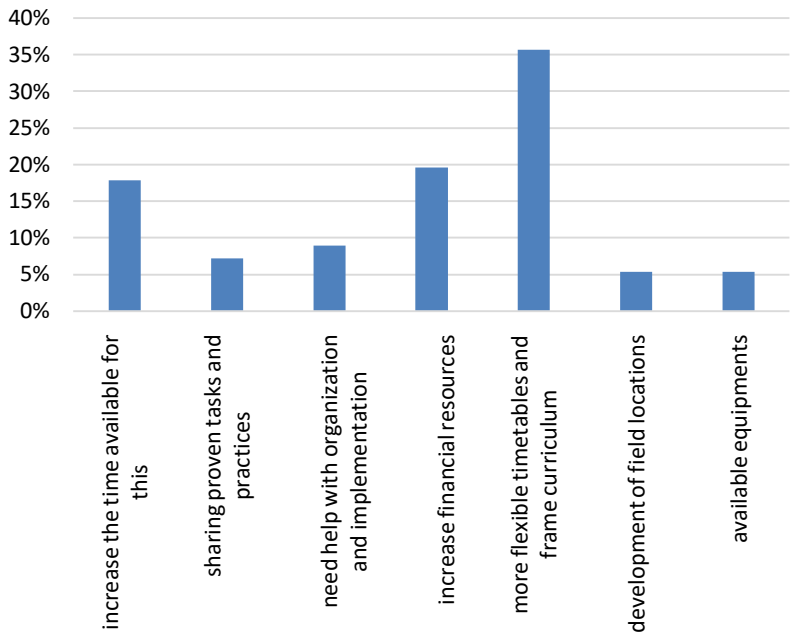

Fig. 4: Typical responses to the developement of out-of-chool environmental education and their frequency.

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The answers show that the overwhelming majority of teachers would change the capacities/allowances of the class schedule and the framework curricula. According to the opinion of the majority of teachers participating in the research, if the curricular demands were to be moderated, and if it was possible to plan the institutional schedule with more flexibility, they would hold field practices more frequently. In many cases, they do not hold regular field practices because the schedule and the rigid adherence to the curriculum does not allow it. Many teachers think that if the demands of the curriculum were changed, there would be actual opportunities for realizing outside-the-school activities. Several teachers believe that with allocating the natural science classes to a single day, environmental education outside the classroom would become possible. With natural science classes on a single day, it would become to choose topics that could be discussed in a multidisciplinary manner during field practice. It must be noted here that not only natural science classes allow environmental education. Environmental education can be successfully implemented during history, foreign languages, literature, grammar, or even physical education classes. We believe it is entirely possible to implement field practices in the case of the humanities as well. According to the received answers, the second most important developmental direction would be the increase of monetary resources for environmental education. However, monetary assistance does not necessarily need to be a major investment. It was mentioned during multiple interviews that it would be a major financial aid if even just the costs of the trip (bus and train tickets) were covered. Several teachers said that just a small financial aid would be enough to increase the frequency outside the school lessons. Evidently, greater financial aid would open new opportunities for development, but the majority of teachers think that only a few tens of thousands of HUF (~50-100 €) per classes per year would increase the frequency of lessons outside the school.

Around 15% of the teachers asked say it would be enough to increase the time-allotment for field practices. In this case the teachers do not demand to change the constraints of the schedule and the curriculum. According to the answers belonging to this group most of the schools would be able to increase the number of field practices if they did not have a rigid system of rules about the dates and planning of outside programs. In 8 from the 44 schools participating in the research and realizing environmental education outside the classroom the dates of the off-school events are determined at the beginning of the school year. Most teachers working in these schools say that there would be actual change in the number of field practices if the time frame for such activities was determined by them. However, the background of stricter institutional and management regulations and the cause of the execution of the rules can only be revealed within the frames of further research.

The improvement of the available equipment covers special demands. Only two teachers believe that the modernization of equipment is necessary for the increase of off-school lessons. They mentioned the improvement of available vehicles of the school (school bus, school kayaks, bicycles), the renovation of measuring tools used during field exercises and the attainment of supplies for research as examples.

One fifth of the answering teachers need such help for the increase of the number of field practices that could be given with decided professional cooperation in a short time. It would be a great help for at least five teachers if there would be support for their work with methodological recommendations and best practices related to specific locations. Around the same number of teachers would need help in organization and realization. It becomes evident from the answers that these teachers need platforms where they receive organizational recommendations for the given destination, and useful tips for successful realization. It must be mentioned that there are such initiatives. Collections describing different pedagogical practices were made, as well as civil databases, but these, on the one hand, will soon become outdated, and, on the other hand, schools often do not receive any information about these initiatives. However, there are teachers who believe that with the conscious development of some outside location off-school activities could be made more frequent. Planning of inner-city educational trails or the establishment and improvement of institutions supporting scientific education (e.g. the renewal of the Tabán educational trail and the reopening of the Planetarium in Népliget) were suggestions.

Looking at the suggestions made for the further development of environmental education out of the school it can be surmised that the majority of teachers holding field practices sees systemic change as the possibility of improvement. The overwhelming majority of teachers believe that making off-school education a frequent part of scientific education in the future can be achieved with drastic changes in the curriculum and educational organization. Only a small number of teachers would need methodological or practical help. However, supporting them is also important.

c) *The results of institutions that do not organize field practices*

In 16 of the institutions participating in the research no off-school environmental education is implemented during the school year. These schools do not differ in either the level or the system of education from the rest. They are scattered in the downtown area, so no findings can be made about location and territoriality. The reasons for the lack of field practices

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should be based on other factors. Figure 5 shows the typical responses and their percentage distribution that were identified by schools participating in the research and not pursuing out-of-school environmental education as important barriers. In this figure, I distinguished in red the percentage distribution of typical responses marked as the most important obstacles.

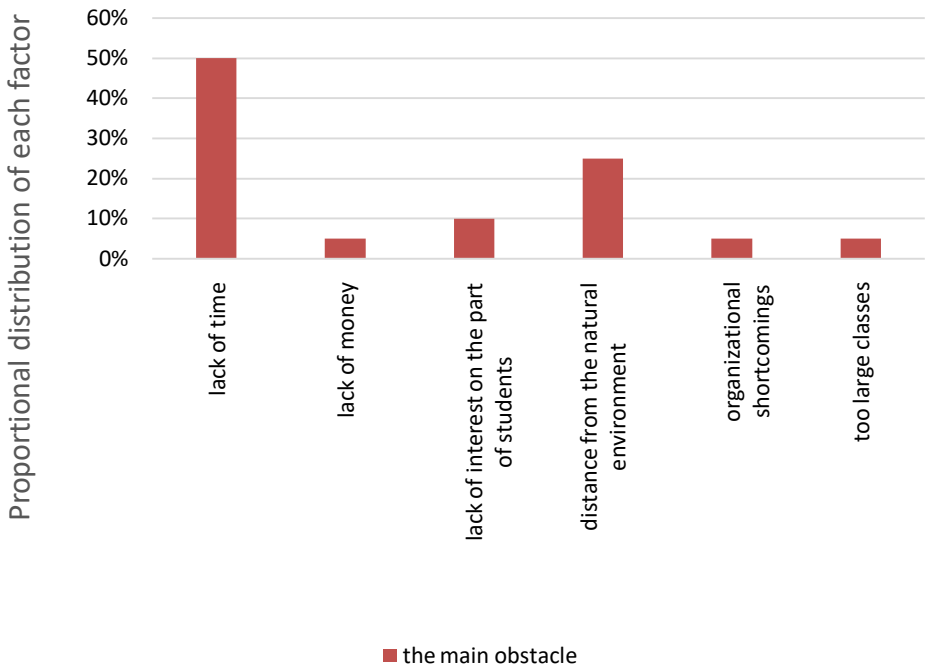

Fig. 5: The distribution of the barriers of planning and implementing field practices in institutions not holding outside-the-school environmental education

The responses to the questionnaire show that out of the 16 institutions where no field lessons are implemented, most identified a lack of time as a major barrier to extracurricular activities. The lack of time manifests itself more drastically in the everyday life of these schools. Several responses show that meeting the requirements of the framework curricula is also a huge problem for science colleagues working at the school. Nearly half of the respondents in this group believe that there is little time to implement "traditional" classroom activities, so they do not plan extracurricular activities in addition. Due to the lack of time, teachers do not even reach the planning phase of the field sessions, so environmental education outside the institution is further hindered by the fact that these teachers are not sufficiently prepared in terms of methodology and organizational skills, as the circumstances that characterize the school did not allow them to design such lessons. The lack of time reinforces two other factors. However, these were identified by only a few teachers as additional barriers. It is likely that changing the timeframes would also reduce the significance of barriers related to methodology and organization. Fifty percent of respondents identified lack of time as the most important barrier. This response is consistent with responses from teachers who hold out-of-school environmental education, namely, that inflexibility in the framework curricula and lesson planning is the most important impediment.

Student disinterest and class size are typical responses that appeared only in this group. In two of the sixteen cases, the teachers do not hold a field practices because the motivation of the students does not allow for active extracurricular endeavors. In our opinion, this can be improved with appropriate methodological recommendations. Some teachers who hold out-of-school environmental education would be helped by a methodological handbook that makes implementation recommendations for the downtown environment and collects best practices that can be linked to specific locations. I think that with the knowledge of the learning paths specific to the class this obstacle could be overcome with the help of such a handbook.

In three cases, teachers identified distance from the natural environment as the main obstacle. In the case of out-of-school environmental education, we have already seen that there are a number of downtown and near-downtown areas available for the organization of lessons. Thus, resources that describe these places can help these teachers.

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d) Barriers occurring in both examined groups

Similarities can be observed between the typical responses given by teachers in the latter group and the responses of teachers who hold the field practices. In both groups, the lack of time and the scarcity of financial resources appear as obstacles. It can be said that the aspects that appeared in both school groups may be obstacles that are characteristic of the entire Hungarian educational system. Although the establishment of accurate data would require further research, it is likely that the constraints of the framework curricula and the inflexibility of the schedule are major obstacles in most schools in Budapest. I believe that these factors also determine field education or lack thereof in most schools in the country. Therefore, the correction of these factors at the national level could improve the quantity of environmental education outside the institution.

e) Developmental suggestions

Typical responses to the development of out-of-school environmental education are in line with the factors identified as the main barriers by schools that do not have field activities. Figure 6 shows the suggestions for the direction of development and their percentage distribution.

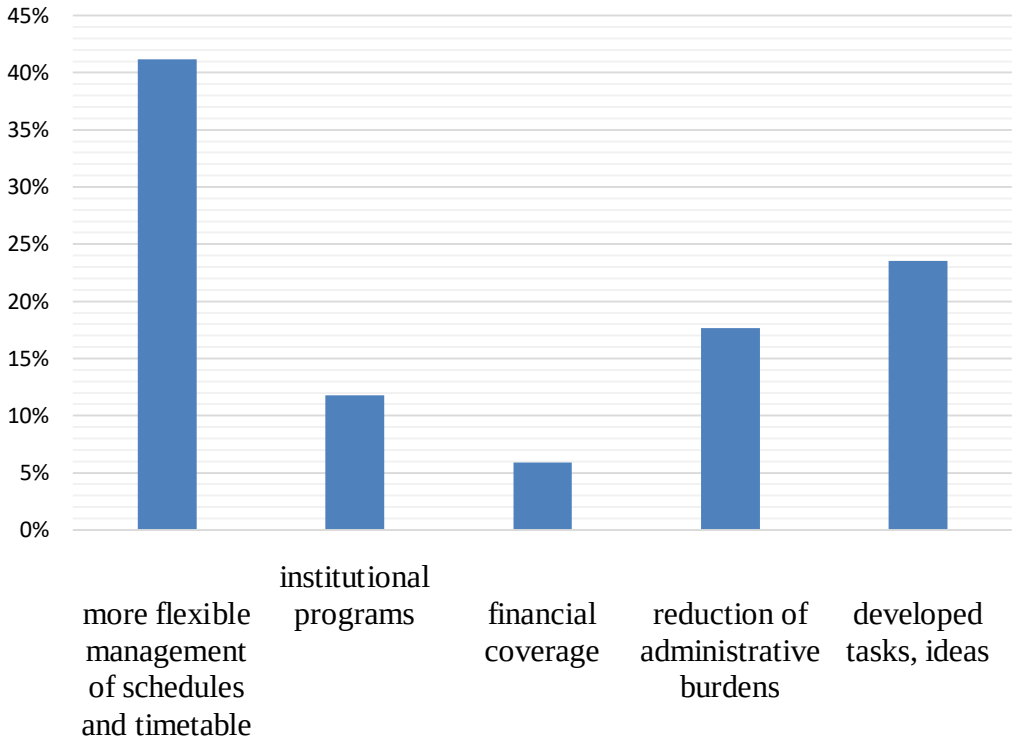

Fig. 6: Typical responses to the question about the development needs of out-of-school environmental education and their proportion for schools that do not conduct field lessons.

More than forty percent of teachers see the potential for improvement in the more flexible handling of schedules and time management. Several teachers gave the answer that by combining certain topics and subjects, it would be possible to hold field practices in which the students go around a certain topic from several points of view. The lack of time to do this unfortunately prevents cooperation with other teachers. At least six teachers also consider it a major concern that due to lack of time, meaningful communication between specialist teachers is not possible. However, the independent organization and holding of field practices could also be facilitated by the fact that an out-of-school occasion would take place through the group work of the teachers, so this experience could be used during independent organization as well.

As a possible avenue of improvement for teachers who do not hold environmental education outside the institution, the time and energy required to prepare for a field session could be reduced by sharing the ideas, tasks, and practices developed. Literature consisting of a list of practical assignments that can be linked to specific locations would certainly be of great help to teachers and schools where out-of-school environmental education does not take place at all. Less emphasis is placed on development proposals in terms of financial implications, institutional programs and reduction of administrative burdens. Interviews revealed that there are already ideas to cover the financial impact in several schools. The ideas that will work can be easily transposed into the learning and teaching environment of other schools. It would only help six teachers if there

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was a change in these areas. It is definitely worth mentioning that in order to improve out-of-school environmental education, it is necessary to improve in these areas as well, but based on the answers received, we can state that most teachers see improvement in the change of scheduling.

V. Conclusion

The main aim of our research was to assess the factors that influence teachers in the downtown schools of large cities in the organization of out-of-school activities, especially those related to environmental education. We conducted our survey in 60 schools in Budapest. Our preliminary assumptions have only been partially confirmed, as we can see that although material conditions and the methodological support of teachers in environmental education have an impact on the implementation of field activities, the greatest problem at the moment is the inflexibility of educational organization. From the results of the research, we consider it important to highlight that the exploration of the individual factors and the search for the development paths related to them provide an opportunity to change the quality of environmental education in Hungary. There are obviously development paths and opportunities that can be realized in the short term through goal-oriented professional dialogue. Improving professional training and expanding the methodological background are tasks that do not encounter any obstacles at the moment. However, further studies are needed to explore and comprehensively analyze the systemic barriers that characterize other schools in Budapest, as well as educational institutions in other cities.

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Appendix 1 - Questionnarie of the Survey

1. How long have you been teaching at the institution?
2. How long have you been teaching science, biology, geography?
3. Do you plan / hold outside-the-school activities while teaching science?

That is, do you plan / hold classes during which students study outside the school area, outside the school environment?

IF YES

4. How often?
5. On which topics?
6. In this case, what types of tasks do the students do?
7. Where do you keep these lessons / lesson fragments? (park / playground next to the school; nearby educational trail; more distant destination using public transport {Hármashatár Mountain, Kis-Sváb Mountain})
8. What age group do the students belong to?
9. What are the learning/teaching factors that make you want to take a lesson or part of a lesson outside the school walls?
10. What could help you to do outside-the-school activities with your students more than once?

IF NOT

11. What are the main influencing factors that prevent you from relying / not relying on outside-the-school activities? (e.g. no natural environments within reach, no curriculum available)
12. Which do you consider to be the main obstacle?
13. On what topics and how could you envisage outside-the-school activities?
14. What could help you to do outside-the-school activities with your students?

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