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Theses of doctoral (Phd) dissertation

The environmental attitude-forming effect of the forest school

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Sopron

2017.

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1. Topicality of the issue

Worries concerning the environment formulated in the second half of the 1900s. Since then, the situation has been worsening continuously—as it is established on every conference related to the matter. The protection of natural values and resources is unimaginable without upholding ethical values.

The rearrangement and loss of values can be attributed to the faults of education as well. The inter- and multidisciplinary aspect of the environmental education may provide a solution to these problems, although its effect will not be experienced by the whole society; however, persistent education can lead to the desired effect. The length of time needed is necessary to that of the forest ranger's educational work, which often brings results only in 50-100 years.

What makes it a topical issue is that it becomes more and more evident—and it is also backed by lots of research (Perényiné, 2010; Kováts-Németh, 2010)—that children distance themselves from the natural environment to a large degree.

The forest infrastructure in Hungary is extremely well-developed, and satisfies every need. Comfortable accommodations, forest schools well-equipped with research and leisure tools wait for the children. However, the support scheme of forest schooling is not adequate in Hungary; therefore, the reduction of the number of groups, as well as the days spent in forest schools is a national trend.

Many documents drafted on national conferences and intergovernmental negotiations, and the Hungarian jurisdiction, which reacts positively to these, emphasize the importance of education to the sustainability, yet we can't say that the problem is solved, and children are fully aware of their environmental responsibility when they leave school. We have to find a theatre of education where the environmentally conscious, responsibly thinking and acting person comes to being through the concurrence of practice and theory. The forest school can be such a theatre if adequate pedagogical elements are applied. It is important to explore the options in this way of organizing learning; thus even public education documents put less and less emphasis on it, or just simply omit it.

2. Aim, task and areas of the research

The main purpose of the dissertation was to prove that the forest school has an environmental attitude-forming effect. Furthermore, to show to what extent the pedagogical activity implemented in forest schools helps the rising generation recognize environmental problems more effectively, and be able to act responsibly to solve them.

In order to do this, I had to see how environmental education, shaping of environmental awareness, and forest schools are presented in our country's education and environmental protection documents. Besides, it was also my task to make acquaintance with the organizations and initiatives that support forest schooling so that I can have a complete picture of the situation in our country, and also that I can compare it to that in other countries.

Besides, I paid special attention to study the Forest Pedagogy project (Kováts-Németh, 2010). The teaching and education model of the Forest Pedagogy provides basis and background for pedagogical and professional work.

After exploring the theoretical background, I conducted a research on the forest schools in our country, tried to assess their number, qualifications and utilization rate. Finally, I selected concrete forest schools, and studied their program, and I also created my own program based on the Forest Pedagogy project, and examined their effect on environmental attitude and knowledge of nature.

3. Hypotheses of the research

1. Activities in forest schools make the environmental attitude of the students more positive.
2. Children participating in forest schools will have a more positive environmental attitude than those of their contemporaries who don't.
3. Implementing the Forest Pedagogy project in forest schools or camps significantly extends the students' knowledge of the forest and the lifestyle of men.
4. The importance of forest schooling is addressed sufficiently neither on the legal nor on the curricular level.
5. Despite the conditions existing in forest schools, forest schooling has declined in the last decade.
6. Before comparing the Slovakian and the Hungarian education, we assumed that more emphasis put on the children's participation in forest schools in Hungary because of its traditions, as well as its professional and infrastructural situation.
7. Despite the extensive forest school network in our country, there is no authentic information about the number of forest schools, their keepers, and implemented programs.

4. Applied methods

Specialist literature and document analysis:

Reviewing studies that present and analyze the environmental studies, and search for the reasons of the problems. Studying more than 100 years of specialist literature, and processing the different views. Reviewing environmental education, as well as the theoretical and practical background, methodology, and theaters of education of the pedagogy of sustainability. Studying the Forest Pedagogy project.

Revealing conventions, protocols, and agreements related to sustainable development, with special to the sections discussing the matter of teaching and education. Detailed analysis of recent documents (Agenda 2030).

Laws, regulations, and documents related to public education: Act LXXIX of 1993 on the public education, Decree 11/1994 (8th June) of the Ministry of Culture and Public Education on the operation of educational and teaching institutions. Government Decrees 63/2000 (26th October) 243/2003 (17th December) 202/2007 (31st July) Decree 11/1994 (4th June) on the publication, introduction and application of the national core curriculum. Act CXC of 2011 on the national public education.

Revealing the content of the Basic Program of National Environmental Protection I-IV related to the shaping of environmental awareness and environmental education.

The identical Slovakian laws and documents have also been studied (translated by Tünde Erdélyi) National Teaching Program – Štátny vzdelávací program 2011, Nature school support – Príspevok na školu v prírode.

Examination: Observation, analysis and evaluation of the program, and the modules completed by the selected four forest schools.

- ***Bábakalács Forest School***, Directorate of Bükk National Park, Felsőtárkány
- ***Forest school of the Forest Authority of Szilvásvár***, Egererdő Zrt., Szilvásvár
- ***Csevice Forest School***, Eszterházy Károly University, Practice Elementary-, Secondary-, and Basic Art School and Pedagogical Institute, Parádfürdő
- ***Parád Camp***, Hírös Agóra Cultural and Youth Center Non-profit Kft., Parádfürdő

Compiling and implementing my own forest school program based on the Forest Pedagogy project. Comparing the change of attitude caused by this with that of the groups participating in the forest schools mentioned above.

Interview: I have carried out an interview with specialists of the Egererdő Zrt. and the Bükk National Park about the role of forest schools, and asked them about their general thoughts about the topic.

Survey through questionnaire: We have measured the environmental attitude, knowledge of nature and nature protection before and after the activities conducted in the forest school, and also after 6 months. Besides, the motivation and environmental attitude of the escorting pedagogues has also been surveyed. As a control, we also examined the environmental attitude and knowledge of children not participating in forest schools.

The main part of the questionnaire was a 5-stage Likert-scale consisting 30 questions. The scale is based on the subscales of the Children's Environmental Attitudes & Social Knowledge Scale (CHEAKS). (Leeming, Dwyer and Bracken, 1995, Varga 1997). 17 questions were related to the actual commitment, whereas 13 were related to the emotional component of the environmental attitude.

The other main part is a knowledge check test consisting 10 questions, which is connected to the forest school program developed by me, but basically it contains general knowledge.

I also asked the escorting pedagogues and the service providers questions, and measured their environmental attitude.

Statistical evaluation, calculations

Evaluation of the 30 statements related to environmental attitude in the survey through questionnaire, and the 10 multiple choice questions.

5. Results of the research, drawing conclusions

The dissertation gives an overview about how men's attitude towards its environment has changed throughout the history. It summarizes documents, protocols, conventions and conferences related to environment and nature protection, and also those advocating public awareness-raising, which were created between 1972 and 2015. All consultations ended with the conclusion that we can't wait any longer, and must take immediate measures if we want to protect our Earth. Yet there has been no substantial progress in practice.

Despite the fact education for environmental awareness is one of the main topics of international conventions and documents, this has not at all been realized to the desired extent. The analysis of the domestic educational policy documents revealed that the individual editions of the Hungarian National Core Curriculum refer to or emphasise the topic of environmental education/education for sustainability to a different degree. Furthermore, the issue of forest schools is unfairly neglected in most of the documents.

The national core curriculums of 1995 and 2012 (the newest) are the ones in which environmental education is detailed to the highest degree. Act LXI of 2003 on the public education marked a progress for environmental education, thus, subsection 3 of section 35 made the preparation of an environmental and health education program obligatory for all institutions. The forest school as a possible theater of development is first mentioned as a concrete competence at the field of education 'Our Earth and environment' in the NCC of 2003. We can also find it in local, regional and global questions: "Introducing the essential goals of nature and environment protection based on my own experience (e.g. educational walk, educational excursion, forest school). The Government Decree Nr. 202/2007 modified the Government Decree Nr.243/2003 on the publication, introduction and application of the National Core Curriculum, by introducing key competencies. If we review the skills to be developed as defined by the key competencies, as well as the attitudes to be adopted, we will find those serving environmental education in each one of them. The NCC of 2012 discusses environmental education, and education for sustainability at several points. The document pays attention to the comprehensive questions concerning the whole world, emphasizing the common responsibility for sustainability. Environmental awareness and sustainability are presented as separate areas for development.

The National Environmental Programme advocates the development of the environmentally conscious attitude for school children, parents, as well as local communities in an increasingly emphatic and diverse way.

The forest school, whose role in teaching and education has significantly changed in the course of time, came into being around the turn of the 1800s and 1900s as institution.

While studying the history of the forest school it became clear that the first forest schools were established with the purpose of maintaining health and of healing. However, the teaching of ethical and healthy way of life among children was an important mission for them as well. As a consequence of the changing of the theater of education they were the first to react to the pedagogical innovations when the theatre of teaching changed, and making acquaintance with and protecting the natural environment become more and more emphasized, too. The picture has completely changed by today, thus, their primary purpose is having experiences in nature and transferring knowledge. The development of behavioral standards is mostly confined to nature only. However, social norms, local identity and behavioural culture should also get a more significant role as well.

The specialist literature about forest schools is extensive. The theoretical and methodological writings and studies have been published in large numbers

since the 1980s. A lot of internationally recognized specialists study and research it even currently in our country.

Specialist approach and emphasize the role of the forest school in school teaching and education from different perspectives, but they all agree that this is the most suitable place for environmental education.

Based on Mária Kováts-Németh's investigation carried out in 2008 there has been 209 forest schools in Hungary. Péter Szandi-Varga referred to 104 qualified forest schools in 2015, and didn't mention the others. We find this number even currently on the homepage of the National Association of Educational Centers for Environment and Nature Protection (KOKOSZ) as far as forest schools as kindergartens are concerned. However, not all forest schools have qualifications; therefore, their numbers can't be determined based on this factor.

We currently can't find a data base which shows how many forest schools operate in our country.

For my research I selected forest schools operated by four different types of service providers.

- *Bábakalács Forest School*, Directorate of Bükk National Park, Felsőtárkány
- *Forest school of the Forest Authority of Szilvásvár*, Egererdő Zrt., Szilvásvár
- *Csevice Forest School*, Eszterházy Károly University, Practice Elementary-, Secondary-, and Basic Art School and Pedagogical Institute, Parádfürdő
- *Parád Camp*, Hírös Agóra Cultural and Youth Center Non-profit Kft., Parádfürdő

To find out how effective the schools are I examined the location of the selected four forest schools, and the programs they offer. I carried out a survey through questionnaire to measure the change of environmental attitude, involving forest school groups that visited them.

Furthermore, I have compiled a forest school program for 5 days—based on the theoretical concept and moduls of the Forest Pedagogy project—, which I could implement in 3 locations:

- Parád Camp, Parádfürdő (5 days of forest school)
- Csevice forest school, Parádfürdő (5 days of summer camp)
- Natural Science Camp, Eger (5 days of daycare summer camp)

I also examined the environmental attitude and the knowledge of the children participating in the camps. The survey was carried out between 2014 and 2016. I examined 213 students aged between 10 and 13 years, who represent 10 groups (mostly classes).

All four forest schools are located in ideal forest environment, which provides opportunity to get acquainted with the most complex ecosystem, and to develop the environmental attitudes related to this. The programs of the examined forest schools is professionally and pedagogically colourful, with individually preferred topics and message. The infrastructural background and the equipment is exceptionally good in each one of them, owing to various funding grants.

The conducted examinations verified the positive effect of the forest school on the environmental attitude and the extension of knowledge. The implementation of the Forest Pedagogy project also brought the expected results, as it showed to be more effective in shaping environmental attitude and extending knowledge than other forest school programs.

6. Evaluation of the hypotheses

Evaluating the hypotheses we can state that all seven of them has been verified.

Our first hypothesis was that *“Activities in forest schools make the environmental attitude of the students more positive.”* During the evaluation of the examinations it could be verified that there we saw an increase in all forest school groups except for one, that is the children had a more positive environmental attitude when they left than when they arrived.

The second hypothesis that stated *“Children participating in forest schools will have a more positive environmental attitude than those of their contemporaries who don’t.”* has also been verified as the environmental attitude of the participating class appeared to be at a higher level after the forest school than that of the control group. The attitude remained constant even after 6 months, what is more, it also developed further.

Our third hypothesis formulated that *“Implementing the Forest Pedagogy project in forest schools or camps significantly extends the students’ knowledge of the forest and the lifestyle of men.”* The answers given to the knowledge check questions were very uneven in case of every group, they mostly showed increase, but also stagnation, and even significant decrease on several places. However, the Forest Pedagogy project implemented in the forest school and the summer camp showed an increase of knowledge in case of every question.

In Slovakia, where the forest school does not have such a history, theoretical and practical background like in Hungary, children have to attend them during their primary school years, which is also significantly subsidized by the state. In light of the above it can be stated that we can consider our fourth hypothesis—*“The importance of forest schooling is addressed sufficiently neither on the legal nor on the curricular level.”*— confirmed as well.

I examined the number of groups participating in 5 qualified forest schools in 2010/11 and between 2014 and 2017, depending on the number of days spent there. During the first period, there was an increase in the number of groups, but in the second it became clear that the number of classes visiting forest schools showed a declining trend, or they spend less time in the forest school. Consequently, the hypothesis that stated *“Despite the conditions existing in forest schools, forest schooling has declined in the last decade.”* has been confirmed.

The other reason why the number of the groups visiting forest schools decreases is that tendering are narrowed down, and even discontinued. The Forest School Program lasting between 2002 and 2008 had the opportunity to develop the financial background of forest schools so that pedagogues could apply for a subsidy for the participation in forest schools every year; however it could't be carried out even during the program. In Slovakia, the obligatory participation in forest schools is subsidized by the state.

The KEOP 3.3.0 tender gave domestic forest schools the opportunity to improve their infrastructure. All the four forest school examined by us grasped this opportunity, and I can tell that as a consequence they became very well-equipped, and they also managed to build in a renewable energy source in every case. Numerous forest schools of the country won this tender, and are similarly well-equipped to receive forest school groups; however, we can count on the reduction of the number of participants until no central subsidy is provided by the state. The contrasting tendency of the examination carried out during the two periods can also be explained with the available tendering opportunities, or with the lack of them. Therefore, this reason and its consequence also support the sixth hypothesis: *“Before comparing the Slovakian and the Hungarian education, we assumed that more emphasis put on the children's participation in forest schools in Hungary because of its traditions, as well as its professional and infrastructural situation.”*

For my research I tried to investigate the situation of the forest schools in our country as thoroughly as possible; however, I can't give an account of the number of forest schools currently operating in Hungary. The forest schools of the forest authorities and national parks are relatively well-documented, but there is no aggregated information about the institutions operated by the other keepers. The situation is similar in case of the qualified forest schools as well because of the aforementioned records by forest authorities, which have more precise information about those qualified by them; however, there is no authentic information about the qualification which is conducted by KOKOSZ and is available to every service provider. Therefore, I can state that the seventh hypothesis, according to which *“Despite the extensive forest school network in*

our country there is no authentic information about the number of forest schools, their keepers, and implemented programs.” has also been confirmed.

7. Theses

1. Domestic educational documents don't put enough emphasis on shaping environmental awareness, and the forest school as a theater of education receives extremely little support and attention in particular. It is mentioned as an option, but it isn't emphasized or referred to as obligatory anywhere.

2. In our country, forest schools have a history of nearly 120 years. The theoretical and practical experts are internationally acknowledged. The specialist literature is extremely rich and wide-ranging. Whereas none of the conditions is in place, yet it is obligatory for elementary school children to participate twice in a forest school. What's more, the Forest Pedagogy project created by Mária Kováts-Németh is used in most places.

3. Slovakian laws make participation in a forest school on two occasions during the schoolyears obligatory. A significant financial contribution is also provided; therefore, it is actually affordable to all children. Such an initiative was the Forest School Program 2002-2008 in our country, with the aim that elementary school children participate once in a forest school. Unfortunately, the program was discontinued, and since then, there has been no progress neither in rendering them obligatory nor regarding the regular grant aid.

4. Most of the forest schools currently operating in our country have an imposing infrastructure and equipment, they use eco-friendly energies, and have the tools for numerous examinations and games. They could achieve this by grant aid (Environment and Energy Operative Program (KEOP)). Whereas forest school groups have very little opportunity to apply for aids that contribute to the expenses.

5. Activities in forest schools make change the environmental attitude of the students. Both the emotional and the actual commitment component will be more positive following the participation in a forest school.

6. The knowledge enhancement activity applied in forest schools will be the most effective if it is carried out by people who are both professionally and pedagogically authentic.

7. The teaching concept of the Forest Pedagogy project can be implemented effectively both in forest schools and in summer camps. The knowledge of the

children participating in the project about nature study and nature protection consistently in all cases, while the other forest school groups (which were not organized according to the Forest Pedagogy project) experienced little increase, or even decrease in case of several questions.

8. Taking the teaching of the Forest Pedagogy project as a basis, the summer camp can be realized both in an artificial and in a more natural setting. The Natural Science Camp carried out mostly in Eger and other settlements was a great example of this. It is obvious that nothing can substitute for the time spent in the forest, yet the intellectual and emotional message can be conveyed in this setting as well.

9. Currently, there is no data base in Hungary that keeps a record of forest schools. The situation is better in case of qualified forest schools, but the data bases maintained by the qualifying organizations aren't perfect as well.

10. Domestic forest schools (including the qualified ones) are not supervised professionally as to whether they actually implement a (qualified) forest school program.

8. Recommendations

Our investigations and the results cast light on numerous defects regarding education policy. Because of these I'd have some recommendations on the issue of forest schools. As my investigations has clearly proven that forest schools have a positive effect on the environmental attitude and the knowledge of nature protection and nature study, I recommend that forest schools be subsidized on all levels of the educational system.

The public education act should formulate provisions for the environmental education as a whole. The current act (Act CXC of 2011) is obviously a step back, because Act LXXIX of 1993 on the public education ruled that every school had to prepare its environmental education workplan, but it is not included in the current one. However, even the one of 1993 has to be revised as well since it didn't impose concrete requirements on the workplan; therefore it did not achieve its target in every school.

It is essential that our country has a similar system of state subsidies than in Slovakia, which provides a significant financial aid for children visiting forest schools twice during their school years.

The subsidy would make the participation in a forest school obligatory at least once in the elementary school.

Pedagogues must be professionally prepared when they bring their class to the forest school, and the same can be expected of the service providers of

the forest schools, who receive them. The effectiveness of forest schools with regard to the shaping of environmental attitudes and the acquisition of knowledge about nature would increase if more and more environmental educator made acquaintance with the Forest Pedagogy project elaborated by Mária Kováts-Németh, and applied that.

It would also increase effectiveness if forest schools continuously carried out measurements and investigations on to what extent a participation in a forest school changes the children's environmental attitude and knowledge about the environment. In light of these, modules could continuously be improved to achieve the desired effect.

It would be necessary at any rate that the case of forest school is supported by the state by aiding the groups dedicated to this purpose. In this way, keeping records of every domestic forest school, and the supervision as to whether they actually carry out a forest school program could be ensured. Furthermore, it would be important so that even forest schools of smaller associations could have themselves qualified, i.e. they don't have any difficulties because of the qualification fee.

9. Publications on the subject matter of the dissertation

Book chapters:

G. Leskó 2015. Az erdei iskolák a környezeti nevelés helyszínei (Forest schools are the scenes of environmental education). In: Mika J.-Pajtókné T. I. (editor) (2015): Environmental education and shaping of awareness, Studies from the Workshops of the Eszterházy Károly College, Líceum publishing company, Eger

Scientific articles (in foreign language):

G. Leskó – I. Katona – E. Szitta (2014): Pedagogical Methods for teaching Nature-Researcher Students. Sustainable Regional Development: Landscape, Social, Economic and Educational Challenges Conference. Conference Proceedings Eger,
http://sustainable.ektf.hu/documents/SUS_cikkek/LG_KI_SzE_Eger_2014.pdf

I. Katona – I. Kárász. – **G. Leskó** – A. Kosáros – Gy. Lakatos (2008): Role of media in students' life and their environmental education. A survey of students aged 13 to 17. In.: Journal of Teacher Education for Sustainability, vol. 10, p. 79-90.

G. Leskó – I. Katona – I. Kárász – Gy. Lakatos (2007): Application of the environmental educational packages in the education for sustainability in the secondary and elementary schools. The 1st International Conference Environment – Natural Sciences – Food Industry in European Context (ENSFI) In: Conference Guide. Baia Mare, p. 81-88

G. Leskó – I. Katona – I. Kárász – Gy. Lakatos (2007): The Role and Efficiency of the Environmental Study Packs in the Education for Sustainability. In: Acta Pericemonologica (rerum ambientum) Debrecina. Tomus 2, p. 136-149

I. Katona – **G. Leskó** – I. Kárász (2007): Environmental Learning Packages in Hungary. In: Acta Pericemonologica (rerum ambientum) Debrecina. Tomus 2, p. 268-271.

Scientific articles (in Hungarian):

Kováts-Németh M. – **Leskó G.** (2017): A tapasztalás elsődleges terepe a valóság, a természetes környezet (The primary area of experience is the reality, the natural environment). Fókusz – Vajdasági Ismeretterjesztő és

Tudománynépszerűsítő Elektronikus Folyóirat (Educational and Science-Promoting Electronic Periodical of Vojvodina). November, 2017, ISSN 2334-6248

<http://www.fokusz.info/index.php?cid=1687304874&aid=1771840019>

G. Leskó (2011): A Földrajz és Környezettudományi Tehetséggondozó tábor szerepe a környezeti attitűd formálásában (The role of the Geographic and Environmental Science Talent Support Camp in shaping the environmental attitude). In: Acta Academiae Paedagogicae Agriensis, Sectio Pericemonologica XXXVIII. Tomus 6 (under press)

G. Leskó (2010): Heves megyei minősített erdei iskolák szolgáltatásainak kihasználtsága (The extent of the utilisation of services offered by qualified forest schools in Heves megye). In: Acta Academiae Paedagogicae Agriensis, Sectio Pericemonologica XXXVII. Tomus 5, p. 21-28.

Leskó G. – Katona I. – Pajtókné Tari I. – Kárász I. (2008): The electronic tools used by nature study teachers. In: Acta Academiae Paedagogicae Agriensis, Sectio Pericemonologica XXXV. Tomus 3, p. 3-9.

Leskó G. – Katona I. – Kárász I. – Lakatos Gy. (2007): A környezeti oktatócsomagok szerepe és hatékonysága a fenntarthatóságra oktatásban (The role and effectiveness of environmental education packages in the education for sustainability). In: Acta Academiae Paedagogicae Agriensis, Sectio Pericemonologica XXXIV. Tomus 2, p. 19-29.

I. Katona – **G. Leskó** – I. Kárász (2008): A média szerepe a környezeti nevelésben egri diákok körében végzett felmérés alapján (The role of the media in environmental education based on a survey among students). In: Konferencia Kötet (Conference Volume). IV. Kárpát-medencei Környezettudományi Konferencia, Debrecen, 2008. március 28-29 (Carpathian Basin Conference for Environmental Sciences, Debrecen, 29-29.th March 2008).