
West-Hungarian University
Faculty of Forestry

Theses of the PhD dissertation

**Role and effectiveness of the teacher training course
„Forests as our environment” in the environmentally
minded education**

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Sopron
2008

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1. Defining the subject

The forest covered area of Hungary is about 1.9 Million ha, out of this is 1 million hectare state owned, the rest is in private or community ownership.

Forests are an element of our environment, important habitat and ecological and economic factor. The most important product of the forests from the economic point of view is wood, a renewable raw material. Forests contribute to human wellbeing through their products and services.

Forests are managed by using their values. Multifunctional forest management has to take into account the requirements of the ecosystems, forest utilization, nature protection and recreation. An accordance has to be achieved between the requirements and needs of the society. Sustainable forest management is an important goal for both international and national forest policy.

Starting at the 1990s research has been started to acquire information about the knowledge, opinion and thinking of people about forestry. The research showed misconceptions about forestry in the society. Because of this the proper communication and presentation of the principles of the sustainable forest management and the values of forests became an urgent an important issue.

An appropriate PR activity towards the society is needed to present the activities of forest management and to help to understand the inner relations within forestry. Foresters recognized teachers as ideal partners among the possible channels of communication with the society. It is impossible to imagine forest without foresters and schools without teachers.

The primary field for socialization of children is their family. The family transmits values and norms towards the child and the child is curious and acceptant because of its age. By entering kindergarten and school the child becomes a part of the process of public education on different levels. Teachers as mediators of values help children to form their proper attitude and approach and broaden their knowledge. In order to be able to provide an environmentally conscious education teachers need special knowledge which is continuously updated through professional education.

The Institute of Forest Assests Management of the West-Hungarian University recognized the possibility in the professional education of teachers and with the intention of transferring and providing information

elaborated a 60 hours teachers training program in 2001 titled “Forests as our environment” which was accredited by the Hungarian Ministry of Education under the number OM 1223/25/2001.

2. Objectives

The aim of the research was to position the teachers training program “Forests as our environment” in the system of environmentally conscious education.

The research had to draw the attention with historical research and with the investigation of the training course to the past and future in our country.

It had to present the beginnings of environmental education, the communication between teachers and foresters, the first steps in teachers training and its need and to the changes and to legal connections.

Additional objective was to analyze the preliminary knowledge of teachers regarding forestry and forest management, the knowledge acquired and the changes which took place as a result of the teachers training course “Forests as our environment”.

The last objective was to present the results and effectiveness of the training course, and to analyze the usability of the acquired information in the practice.

3. Hypotheses

- Foresters and teachers recognize the need of communication and cooperation regarding environmental education in schools at an early stage. Foresters make an effort in strengthening the mediating function of teachers
- Teachers have a need and expectation for professional training and renewal of information
- The knowledge of teachers about forestry and forest management is incomplete and not always correct

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- Teachers need broadening their methodological, theoretical and practical knowledge in order to be able to perform an education aimed at environmentally consciousness and sustainability.
 - The teacher-training course “Forests as our environment” mediating knowledge about forest management can form the attitude of teachers by opening new dimensions. The knowledge acquired during the course can be used in the praxis and in the everyday life
 - Forest managers make an effort to improve their PR activities and the acceptance of their activity by the society

4. Research methodology

The dissertation is based on a primary and secondary research.

The secondary part of the research is aimed at presenting the values of the past and investigating the past efforts in environmental education and searching for possible solutions.

In the secondary part the author presents the events from the middle of 19th century to the middle of the 20th century by studying authentic sources, archives, special journals with the method of analytical information source processing belonging to the deductive research methodology. The research explores the historical roots. With the descriptive analysis of domestic publications and documents it reviews the past and the present of the Hungarian forest management and the changes in kindergarten and school education with specific respect to the environmental education from the middle of the 20th century until 1989. The research also includes the study and descriptive analysis of official documents concerning environmental education between the end of the 20th and the beginning of 21st century – laws, decrees and points of common interest.

The primary research is aimed at the analysis of the teachers training course “Forests as our environment”, at its results, effectiveness. The research started with data gathering with questioning participants of six courses held on five locations between 2001 and 2006, altogether 136 persons. At the beginning of the course the questions were about the preliminary knowledge of forest, forest management, forestry schools and expectations about the course. At the end their broadening of knowledge and the effectiveness of the course was investigated.

As research method for the primary research the author used the method of questionnaires. An accredited semi-structured questionnaire was used at the opening and closing of the training. The semi-structured questionnaire contained closed or selectable or scaled questions as well as open questions, where the respondent could elaborate her/his opinion. 136 out of the 136 questionnaires could be evaluated.

The research continued in 2007 with a repeated questioning of the participant aimed at the achievements of the training and the practical applicability of the acquired knowledge.

The survey was done with a new, semi-structured questionnaire. 75% (102) of the sent out (136) questionnaires were returned, and all of the returned could be evaluated.

The closed, the choice and the scaled questions were analyzed using quantitative statistical methods, while the open questions were investigated qualitatively.

5. Results

5.1 Results of the historical (secondary) research

The author supported the importance of forestry policy and the changes of forestry and forest management with a historical retrospection. It was shown, that teachers in Hungary at the end of the 19th and in the first half of the 20th century realized environmental education in the subjects, in nurseries, in school-gardens, during excursions and on the “Day of Birds and Trees”. The enthusiasm and vocation of the teachers towards their work was presented through nice examples. It was shown, that the relation and communication between foresters and teachers also started in these times.

The author proved that teachers and kindergarten-teachers recognized the necessity of self-education and training courses, and they used as many of these opportunities as possible.

There was an effective collaboration between the different ministries (ministry of religion and education, ministry of agriculture) to provide the legal framework to support environmental education, and the work concerning nature protection, knowledge on nature and a positive attitude towards nature.

After the second world war environmental education in schools was carried out within the subjects, and in the form of excursions, special camps and courses. The “Day of birds and trees” as a proven means for transferring knowledge was forgotten for a while, until the end of the 1980s. It officially appeared in 1996 as one of the important days of environmental protection.

The result of the broadening of the methods of environmental learning-education within and outside of the school from the mid 1980s is the appearance of the forestry school from the year 1985 with forms and content compatible with the requirements of the new ages. The forestry school with its characteristics and with the teacher-forester communication is a considerable addition to the possibilities of environmental education.

School gardens, practice-gardens as very practical forms of education ceased to exist approaching the end of the 20th century both in schools in cities and villages. The changes in environmental education in kindergartens and schools were this time also based on legal regulations.

The author presented the legal regulations concerning environmental education appearing at the end of the 20th century and in the beginning of the 21st century, the connections between education and environmental protection and followed the process of transforming the National Forestry Program into a government decree.

5.2 Results on the investigations of the teacher training course “Forests as our environment” (primary research)

The results of the investigations showed that the training found its audience among mid-aged teachers teaching children between ages 3-6 and 6-14, coming mainly from small towns and villages.

Questions regarding forestry and forest management

The preliminary knowledge of teachers concerning forestry and forest management was often deficient and in forming their opinion there were misconceptions.

The participants were familiar from the list of main tree species only with the well known species (oak 15.2%, conifers 14.6% and beach 14.7) the different sorts of oak and conifers were only known to colleagues with

specialization in biology, environmental protection. Black locust, which represents 20% of the forested area of Hungary was not mentioned.

The author showed that as a result of the theoretical and practical training the knowledge of participants concerning tree species got considerably broader. Among the answers Pedunculate and Sessile oak (28.7%), Black pine, Scots pine and Douglas fir (18.4%) ginkgo (11.7%) and other species appeared, which were typical for the given location like Black walnut (24.3%) or Wild cherry.

It was shown, that although a very similar opinion was represented about the main function of the forests among those, who had a forester acquaintance and who had not some evident differences could also be observed. Those respondents having a forester acquaintance considered private forests to have more economic importance, and hence they considered the role of private forests in the natural balance less important. The information concerning this topic was the most accurate at respondents who had relation to acquaintances with forestry education. In this respect people with forest owners as acquaintances, friends or relatives showed also good results.

The author showed, that the system of relationships influences and forms the opinion and knowledge of people in forestry and environmental issues.

It was also determined, that the opinion about foresters and their professional knowledge and their acceptance is good. The trust towards foresters increased and at the end of the training it was 96%.

Furthermore the author pointed out, that 80% of the teachers had no information about the change of forested area in Hungary or in Europe. There were false assumptions about the relation of the growing stock and cut which led to negative opinions (forested area is decreasing both in Europe and in Hungary, the cut is greater than allowed). As the result of the training these opinions were also positively restructured.

A very important form of the environmentally conscious behavior is the willingness to pay for the wood product produced naturally in an environmentally friendly process. When asking about the term “environmentally friendly, naturally produced wood” more than half of the respondents rejected the question with the answer “I don’t know the term” (“forest with sustainable management”). The answers given to the given possibilities showed of course diversity, but only 4% excluded the possibility of paying. After clarifying the term the opinions changed considerably, most of the teachers understood the problem and showed willingness to pay additional money for the wood produced under sustainable conditions.

Besides the opinion about environmentally friendly produced wood the willingness to pay for the freely available forestry and recreational services was also investigated. The willingness to pay was analyzed in the two main ownership forms, in the state forests and in the private forests.

It was found, that most of the participants felt that for these services the society has to pay in both state and private forests, the differentiation by ownership forms was contradictory.

Furthermore it can be stated, that the respondents did not perceive the legal and financial difference between state and private forest without explanation even 15 years after the political and economic change in the society. The lack of differentiation with respect to owners can also be seen in the opinion about services and the financial compensation for these services.

The author showed that if there is a lack of information in the more evident quantitative parameters like change of forested area, proportion of wood cut and there is now information transfer about these facts it is even more difficult to change the false perception of willingness to pay in the society.

The cross-relations between information obtaining possibilities, facts about forestry and the opinion about them were also analyzed in the investigation of the questionnaires.

As a result it can be stated, that the opinion based on the relation “death of the trees – devastation of forests” the respondents are uninformed concerning important facts and their false assumptions are rather pessimistic in relation to reality. The correct opinion of those about “death of the trees” was not based on knowledge about sustainable and planned forest management, but rather on the knowledge of natural processes.

In the relation of the questions on “death of the trees” and the frequency of forest visits it could be proved, that the direct experience positively influences the opinion about the processes going on there.

Based on the results the author showed that the frequency of forest visits and the direct experience connected with this influences the opinion on the forests and helps to understand the natural processes in the forests.

The author pointed out the most important property of the this complex relationship namely it is useless to describe the positive result of forest management and to get direct experience in the forest, the information needed to form a proper image of forest management will not be a part

of the consciousness of the society without a directed transfer of information.

The author proved based on the analysis of the closed question that the training helped to improve the perception process, helped to see the system behind the complex reality and to understand the logic of forest management and formed the approach. Deficiencies were filled, and the misconceptions were corrected with good results. The great and unambiguously positive change in the knowledge, opinion and views of the participants proved the success and efficiency of the training.

Forestry schools – questions concerning environmental education

Based on results of the analysis of the questions concerning forestry schools and environmental education the author pointed out, that two third of the teachers did not have a relation to the forest schools. Though the schools were known to the participants and they were aware about the possibilities related to these only a few were actually using them. Those, who had already some kind of a contact with the schools were making use of the programs offered by the schools.

The participants stressed the importance of teachers, foresters, forestry schools, excursions and special trainings in improving the efficiency of environmentally conscious education. As a result of the training the original number of ideas has significantly increased.

Asking about expectations towards the training more than two third of the respondents expected knowledge needed for the everyday work. Many of the were expecting ideas changing the attitude and the improvement of the teacher-forester communication. There was also an expectation for getting away from the everyday work and rest but this only in a small number of cases.

Based on the ideas expressed at the end of the course the author determined that though 70% of the teachers was expecting knowledge usable in everyday work at the first place the training had an effect of forming the teachers opinion besides providing information. This gave a value to the participant which can be used both in work and education and their personal way of life.

At the end of the training most of the participants stated that they could use the acquired knowledge in their education work, in their family, on excursions and in organizing forestry school programs.

The impact of the training, use of the knowledge

Results of the investigation showed that the easiest way to reach teachers in organizing such a training course is through the information channels of their workplace.

The author showed that as an effect of the training the forest visiting habits of the participants changed. It was also shown, that the frequency of forest visits is also influenced by the distance from the forest.

The attitude of the respondents to the forests also changed in a positive way. The knowledge of the teachers concerning forest has improved, their views on forests became more complex.

The training provided for most of the participants the ability to see and understand the multifunctional uses of forests. The research proved, that as a result of the training the teachers go more often to the forest in connection with their work. Most of the teachers try to mediate the knowledge acquired during the training to their environment.

It has been proven that the knowledge of the training can be used, and teachers are using the experience-based programs in their practice. In their everyday work they use the experiences of the excursions, the forest-related games, the new theoretical and practical knowledge and the ideas of the handicraft works in first row.

The teachers would all recommend this training to their colleagues, which can be considered as a great success of the training. This fact was also supported by the returned second questionnaires where the respondents showed a high level of satisfaction with the training, and they were also emotionally positively affected.

According to all investigations the training has a definite place in the system of environmentally conscious education based on its results and attitude-forming capabilities. The training is justified by its effectiveness and the usability of knowledge provided.

The training "Forests as our environment" can be considered as an important means for creating an environmentally conscious education and forming a proper attitude towards forests. This process is characterized by a strong teacher-forester communication and collaboration

6. Theses

1. I proved, that the past ambitions for environmental education and the past forms of this education – “Day of birds and trees”, excursions, school gardens – were successful, where the communication between teachers and foresters provided an authentic flow of information
2. I showed, that the need for further environmental education arose already at the beginning of the 20th century, and was manifested in legal regulations. With the training “Forests as our environment” the possibilities of teachers for further education is improved and the system of professional education is also strengthened.
3. It could be shown, that the knowledge of the society is on a low level about multifunctional forestry, as the second biggest land use form. The misconceptions in different generations hinder the production of the renewable raw material wood and products made out of it, the increasing use of wood products and the realization of incomes which are inevitable for forest owners and managers.
4. Connecting to the European tendencies the National Forest Strategies and Forestry programs were also elaborated in Hungary which harmonize the needs of the society, the forests and the forest managers. These strategies show, that the conflict-situation can be resolved by applying a new approach in the man-forest relation. Related to this I put the communication of forests, forest managers and society into a system and based on this the program of the training course “Forests as our environment” meant mainly for teachers was created using the collaboration of teachers and foresters.
5. I identified a series of actions leading to the change of attitude by analyzing the textbooks prepared for the National Study Plan. These can be characterized by exaggerated anxiousness about the nature, a false presentation of the foresters and forest management and can lead to a negative opinion about forestry among students. The incorrect statements in the textbooks have to be corrected by an expert group. Beyond this the attitude of the teachers can be formed by a proper and authentic presentation of the forests and forestry and these training can be linked into the system of the professional education of teachers.
6. I proved, that an intensive relation to authentic specialists supplemented by personal experience can change the negative

attitude which is due to the information coming from the media. Forests as the locations of the training courses and connection with foresters can facilitate this change. The questionnaires used as a means of control proved, that 95% of the attendants changed their attitude towards forests. The training course also gave a good example for restoring the teacher-forester communication.

7. I showed, that the training course “Forests as our environment” effectively handles the information gap and distortion in respect of forest management, the method of intensive consultations in a special environment completed with personal experience helped to change attitude on a long run and gives the opportunity for communication with foresters.
8. Based on the repeated questionnaires I could determine that the training program achieved the desired change in knowledge and in attitudes of the attendants, who were handled as colleagues. The feedback showed, that the course improved the methodological knowledge. Besides experiencing their own creativity the course also contributed to the knowledge of organizing and leading handicraft courses.

7. Recommendations

Presenting the history of environmental education can be interesting and useful for teachers. In order to broaden knowledge and change attitude a series of presentations have to be held in the topic. On the presentations the teacher gets to know his or her work and values with respect to environmental education in schools. The results and practical examples encourage the teachers to think over they daily work and to acquire more information. The presentations can direct the teachers to build connections with foresters, or if this process has already started to improve it.

In schools the possibility and forms of learning based on own experience has to be improved. Schools often have financing problems and because of this they cannot acquire the trendy modern educational equipment. In my opinion the effective environmental education does not depend on such equipment. The traditional ways of education have to be improved which are based on own experience in the nature and do not need financial resources. Children need more excursions and more forms of education outside the school. In our world of computers it is easy to click

on something and print out the information, but the inclusion of this information into the knowledge base of the child is not guaranteed. Own experience, ideal locations and well educated and enthusiastic teachers contribute to the authenticity of the information.

In order to achieve the above mentioned goals I recommend that schools and kindergartens should improve their connection to the local forest companies and their forest schools in order to promote effective and environmentally conscious education. They should organize excursions, planting and taking care of trees according to school years and seasons and celebrate the “Day of Birds and Trees” together with foresters.

The number of calls for proposals for organizing forestry schools and kindergartens should be increased. With increasing financing possibilities and with solving the problems of financing more and more schools could make use of these services.

Based on the success of the training course “Forests as our environment” it should be extended to other regions of the country. The training could be financed using sources from proposals.

The training course “Forest as our environment” organized between 2001 and 2006 had attendants from the middle aged teachers. Proper information about forests and forest management is also in the interest of the younger generation. The transfer of information should also be aimed at students of teacher-training colleges.

Starting in 1996 in connection with the special field man and nature and considering environmental education as a complex issue Kovátsné dr.habil Mária Német, leader of the Department of Pedagogy started this knowledge transfer on the Faculty Apáczai Csere János of the West-Hungarian University based on a forest pedagogy program elaborated by her. The education should also be aimed at the students of the Benedek Elek Pedagogic Faculty of the West-Hungarian University. The training “Forests as our environment” could be incorporated into the curriculum of the Pedagogic Faculty with the participation of specialists of the Faculty of Forestry, the Benedek Elek Pedagogic Faculty, the Forestry Museum and the Kisalföld Forest Company.

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