Cross-Border Citizen Scientists

A Model for Science Education in Border Areas

Virpi Kaisto, Olga Brednikova and Henri Malkki
Cross-Border Citizen Scientists

A Model for Science Education in Border Areas

Virpi Kaisto, Olga Brednikova and Henri Malkki

Lappeenranta University of Technology, Centre for Independent Research

LUT Scientific and Expertise Publications, Report 22

Lappeenranta University of Technology, Finland
Cross-Border Citizen Scientists -project

Project Partners: Lappeenranta University of Technology, Centre for Independent Social Research (St. Petersburg), Finnish-Russian School of Eastern Finland, Pervomayskoe Comprehensive School (Vyborg Region) and Leningrad Region Museum Agency (Historic and Ethnographic Reserve Museum Yalkala, Ilichevo)

Photographs: Virpi Kaisto and Valentina Karabanova, photograph on p. 69 (the seminar participants in front of Vyborg castle) by Denis Egorov

Illustrations: Virpi Kaisto, photograph on p. 33 by John Manning

Published by:

Lappeenranta University of Technology / South Karelian Institute

© Lappeenranta University of Technology

ISBN 978-952-265-582-0
ISBN 978-952-265-583-7 (PDF)
ISSN-L 2243-3384
ISSN 2243-3384

Lappeenranta 2014
Acknowledgements

The authors would like to thank all the people that took part in the realization of the Cross-Border Citizen Scientists -project. The four years spent in planning and implementing the project has been rich with experiences, discoveries, and mutual learning. An enthusiastic group has been working in the project with the desire to educate young people and connect people across the Finnish-Russian border. Thank you Laura Olkkonen, Valentina Karabanova, Tuuli Utunen, Natalia Goroshkova, Nadezda Dobryanskaya, Natalia Tuovila, Maria Karpova, Mihail Allenov, Mikhail Nikolaev and Petri Kyyrää. Without you there would not have been a project. Thank you for all the memorable moments that we shared during the preparation and implementation of the project. Second, we would like to thank the students that took part in the project. Salla Lemponen, Maija Lemponen, Marika Martikainen, Tanja Nurmiliba, Heli Rossi, Juliana Saareks, Polina Mamaeva, Aleksandra Melnichenko, Valeria Raikon, Natalja Melnik, Angelina Karpova, Andrei Nikitenko, Nikita Temerev and Andrei Zarubin, you showed strong motivation and commitment to the project and made the work of the teachers and scientists rewarding. We wish you all the best in your future paths; remember to believe in yourselves and your skills.

We would also like to thank all the talented scholars that we had the pleasure of working with. Thank you for the inspiring lectures Kristiina Korjonen-Kuusipuro, Maria Tysiachniouk, Kati Parpe, Ekaterina Melnikova, Laura Olkkonen, Riitta Kosonen, Yana Krupets and Joni Virkkunen. Thank you for the educative lessons Maaret Paakkunainen, Natalia Goroshkova, Mikhail Nikolaev, Jukka Luoto, Mikko Kohvakka, Valentina Karabanova, Nikolai Simankov, Irina Vik, Elena Ruskovaara and Nadezda Dobryanskaya. You have all left a mark in the young scientists’ lives.

Virpi Kaisto, Olga Brednikova and Henri Malkki
# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Johannanto</td>
<td>3</td>
</tr>
<tr>
<td>Введение</td>
<td>5</td>
</tr>
<tr>
<td>2. Project Themes</td>
<td>7</td>
</tr>
<tr>
<td>The Environment Theme</td>
<td>11</td>
</tr>
<tr>
<td>The History Theme</td>
<td>17</td>
</tr>
<tr>
<td>The Business Theme</td>
<td>25</td>
</tr>
<tr>
<td>The Mental Borders Theme</td>
<td>35</td>
</tr>
<tr>
<td>3. Project management</td>
<td>41</td>
</tr>
<tr>
<td>4. Discussion</td>
<td>63</td>
</tr>
<tr>
<td>5. Photographs</td>
<td>65</td>
</tr>
</tbody>
</table>
1. Introduction

Border areas are places where nations and cultures meet. Borders are said to be both dividing and uniting lines, depending on how one perceives them; dividing different state systems, nations, cultures, but at the same time creating possibilities for people and cultures to meet and mingle. From a regional development perspective borders are increasingly being considered possibilities rather than obstacles for development. No matter how one perceives borders, it remains a fact that they keep challenging local, regional and national actors. Even a closed border requires cross-border cooperation, among other things, to take care of nature that does not stop at a man-made border.

This manual represents a model for attracting young people to become involved in cross-border cooperation. It is based on a project called “Cross-Border Citizen Scientists”, which was realized in 2012-2014 in the South-East Finland – North-West Russia border area. The project was financed by the European Union’s South-East Finland – Russia ENPI CBC 2007-2013 program. The aim of the project was to contribute to active cross-border citizenship and people-to-people links. The project gave science education to young people on both sides of the border. This means that a group of twelve comprehensive school students from Finland and Russia was taught how to conduct research and how to study their own cross-border area. The project was based on the idea that by gathering first-hand knowledge and by studying the border area together young people will become aware of the challenges and opportunities offered by the border. The project paid attention to the border not only as a physical artifact, but as a mental construction, and tried to influence the mental images and prejudices that young people have towards the neighboring country and its inhabitants.

The Cross-Border Citizen Scientists -project took its inspiration from the concept of ‘citizen science’. Science is often considered an art of closed circles, that of the scientists, about which people outside academia have little understanding. The idea of ‘citizen science’ is to attract ordinary citizens to take part in scientific studies. In its simplest form ‘citizen science’ is about making observations and collecting data for scientists, but citizen scientists can also be invited to take part in thinking and analyzing processes. In the Cross-Border Citizen Scientists project the students learned what science is and what it takes to perform small studies and research projects. The young scientists did not take part in large external scientific research projects, but had their own small research assignments and studied their own living space with scientific methods.

The project included four themes; environment, history, business, and mental borders. Each theme was studied for a term and had an identical structure. First, the students attended themed lectures. These lectures were given by Finnish and Russian scholars from a social science perspective. Second, the students had an in-depth study period with specialists, during which they learned about the subject in question and carried out small research projects. After the in-depth study period the Finnish and the Russian students gathered together for a joint seminar, during which they presented the results of their studies, had discussions, completed further assignments, and visited institutions.
and companies related to the theme. At the end of each theme the students passed on the knowledge gained during the term to other students in their schools in peer teaching sessions.

In this manual, we introduce the Cross-Border Citizen Scientists -project with the purpose that any group of teachers and scientists in any other border area would be able to implement a similar project. The manual first introduces the contents of the project, giving descriptions of all the actions; their aims and practical applications. In this section, the reader will find descriptions of the research tasks undertaken by the students. In the second part of the manual, we discuss the project management. We describe how the project was managed and share our experiences of what functioned well with the students and what could have been done in another way.

We wanted to keep this manual compact and easy to read; it is thus not an analysis or an evaluation the Cross-Border Citizen Scientists -project, but a practical guide that explains how the project was planned and implemented. How a project is carried out depends naturally of where it takes places, where the funding comes from, who takes part in the project group, and what is the educational level of the participating students, just to mention a few factors. Therefore, this manual does not go into every detail in its descriptions, but rather offers a model for a cross-border science education project, and hopes to inspire and spawn many more similar projects around different border areas.

teeman liittyvissä laitoksissa ja yrityksissä. Jokaisen teeman lopuksi oppilaat jakoivat lukukauden aikana kerättyä tietoa oman koulunsa oppilaille vertaisopetustunneilla.


Me halusimme pitää tämän käsikirjan tiiviinä ja helppolukuisena. Siksi käsikirja ei ole ”Cross-Border Citizen Scientists” projektiin analyysi tai arviointi, vaan käytännönläheinen opas, joka selittää, miten projekti suunniteltiin ja toteutettiin. Se, miten tietty projekti viedään läpi, riippuu luonnollisesti siitä, missä se toteutetaan, miten se rahoitetaan, ketä projektiyhmään kuuluu ja mikä projektiin osaa ottavien oppilaiden koulutustaso on (vain muutamia tekijöitä luetellaksemme). Siksi tämä käsikirja ei mene hyvin yksityiskohtaiseen kuvaukseen, vaan ennen kaikkea tarjoaa mallin rajat ylittävän tiedekasvatusprojektin toteuttamiseen, ja toivoo, että inspiroi ja saa alulle monta samanlaista projektia eri raja-alueilla.

Käsikirja on englanninkielinen. Lisätietoja projektista saa suomen ja venäjän kielillä suoraan projektipartnereiltä. Yhteystiedot löytyvät takakannesta.
Введение

Приграничье – это место, где встречаются народы и культуры. Говорят, что границы могут разъединять и объединять, в зависимости от того, как воспринимать их; с одной стороны, они разделяют государственные системы, нации и культуры, с другой - создают возможности для встречи и общения людей и культур. С точки зрения регионального развития, границы все чаще рассматриваются в качестве возможности, а не препятствия. Независимо от того, как границы воспринимаются, важно, что они активизируют локальные, региональные и национальные власти, ведь даже закрытая граница требует трансграничного сотрудничества. Например, природа, которая не знает границ, требует совместной заботы.

Данная брошюра нацелена на привлечение молодежи к приграничному сотрудничеству. Она основана на проекте "Трансгранинные гражданские ученые ", который был реализован в 2012-2014 гг. в приграничных регионах Юго-Востока Финляндии и Северо-Запада России и финансируется программой ENPI CBC 2007-2013. Цель проекта заключалась в формировании трансграничной гражданственности в объединении людей. В рамках проекта молодежь по обе стороны границы получила возможность получить представление о том, что такое наука.

Двенадцать школьников из Финляндии и России учились, как проводить научные исследования приграничных территорий, где они живут. Основная идея проекта состояла в том, что, изучая приграничный регион вместе со своими соседями, молодежь лучше узнает о проблемах и возможностях границы. В рамках данного проекта граница рассматривалась не только как физический артефакт, но и как ментальный конструкт, чтобы, в итоге, изменить стереотипы и предрассудки молодежи в отношении соседней страны и ее жителей.

«Трансграничные гражданские ученые» – это проект, который родился из концепции «гражданская наука». Зачастую, наука рассматривается как эгалитарная активность закрытых кругов, которая не доступна понимаю обыкновенных. В рамках этой концепции в научную деятельность вовлекаются обыватели. Иначе говоря, обычные граждане могут не только проводить наблюдения и собирать данные вместе с учеными, но и участвовать в интерпретации и анализе этих данных. В проекте «Трансгранинные гражданские ученые» школьники узнали, что такое наука и как она делается, смогли сами провести собственные небольшие исследования. Молодые ученые не принимали участие во внешних больших научно-исследовательских проектах, перед ними стояли небольшие исследовательские цели и задачи, и они могли исследовать места и территории, где живут.

Проект включал в себя четыре темы: окружающая среда, история, бизнес и исследования границ. На каждую тему отводилось полгода, и исследования выполнялись в одинаковой логике. Сначала студенты получали теоретическую подготовку и слушали лекции экспертов. В качестве экспертов в каждой теме выступали финские и российские исследователи, которые освещали темы с точки зрения социальных наук. Затем школьники более глубоко изучали предмет со специалистами в исследуемой тематике и реализовывали свои небольшие
исследовательские проекты. После проведения исследований, финские и российские школьники собрались вместе на совместные семинары, в ходе которых они представляли результаты своих исследований. В рамках совместных семинаров также проводились общие дискуссии, школьники посещали организации и компании, работающие в исследуемой тематике. В конце каждого полугода участники проекта представляли результаты своих исследований более широкой аудитории - своим одноклассникам и другим ученикам школы.

В данной брошюре мы представляем проект таким образом, чтобы любая общность преподавателей и ученической группы приграничной зоны смогла бы реализовать подобный проект. Сначала в брошюре представлено содержимое проекта, описываются все проектные активности, их цели и даются практические рекомендации. В этом разделе читатель найдет описание всех исследовательских задач, в решение которых были вовлечены участники проекта. Во второй части обсуждается менеджмент проекта. В отличие от "книжных знаний", здесь мы попытались отразить наш практический опыт и отрефлексировать уроки, которые мы получили в ходе реализации проекта. Мы хотим поделиться нашим опытом - что в работе со школьниками получилось хорошо, а что можно было бы изменить, сделать иначе.

Мы решили сделать брошюру компактной и удобной для чтения. Таким образом, перед вами - не аналитический обзор проекта, но практический гид, который объяснит, как проект планировался и воплощался в жизнь. Реализация любого проекта зависит от того, где он осуществляется, откуда идет финансирование, кто принимает участие в проекте и тд. Поэтому мы не вдавались в детали, но, скорее, предложили модель транграничного научного образования молодежи. Мы надеемся, что эта модель вдохновит на создание множества подобных проектов в различных приграничных территориях.

Брошюра написана на английском языке. Дополнительную информацию о проекте на русском и финском языках можно получить у партнеров проекта. Координаты можно найти на последней странице обложки.
2. Project Themes

The Cross-Border Citizen Scientists project lasted for four school terms, each with a separate theme. These themes were environment, history, business and mental borders. The themes were chosen, on the one hand, based on current challenges in the Finnish-Russian border area and, on the other hand, on the expertise of the group of scientists and teachers that took part in the preparation of the project. The chosen themes were also on the agenda of the cross-border cooperation program, where the group sought project funding. Six students from the School of Eastern Finland in Lappeenranta (Finland) and six students from Pervomayskoe Comprehensive School in Pervomayskoe (Vyborg Region, Russia) were selected for the project and received training in all the themes.

Each theme of the project had an identical structure. First, Finnish and Russian scholars, so called ‘theme experts’, gave lectures in both schools. The aim of the lectures was to introduce the students to the studied theme. The approach was not that of an ordinary introduction, but a human / sociological approach giving the students different perspectives on the studied subjects. In the environmental theme, for example, instead of the state of the physical environment in the Finnish-Russian border area, the students learned about the relationship between human beings and the environment, and about forests and forest management in Finland and Russia.

Second, the students had an in-depth study period with ‘specialists’, scholars who gave the students lessons and small research assignments. The specialists did not travel to the neighboring country, but separate specialists worked in the Finnish and Russian schools. The lessons and research assignments in Finland and Russia differed in all the themes, except for the last theme. In Mental Borders theme, the Finnish and Russian students had joint research projects, which they discussed during joint meetings (Skype and the joint seminar at the end of the theme). The in-depth study periods included approximately ten hours of lessons and were realized in the form of workshop meetings, each lasting for two to four hours.

At the end of each theme, the students had a joint seminar either in Finland or Russia. The seminar included scientific sessions and visits to organizations and companies related to the theme. During the scientific sessions the students presented the results of their research projects, and the coordinators gave the students different assignments. In the historical theme, for example, the students planned their own museum exhibitions and discussed how the past is represented by museums. After the joint seminars, the students shared their experiences and knowledge in peer teaching sessions in their own schools.
Do Finnish fish speak Russian?
The Environment Theme

- Lectures about the relationship between humans and the environment, and about forests and forest management.
- In-depth study period dealing with hydrology, human impact on water systems and the environment, climate and soil.
- Joint seminar in Pervomayskoe, Karelian Isthmus (Russia), including scientific sessions and visits to the Main Experimental Base of the State Hydrological Institute in Illichevo and Poultry Plant Roskar in Pervomayskoe.
- Outcomes: PowerPoint presentations of the research assignments.

The Environment Theme aimed at teaching the students that an ecosystem does not recognize human made borders, and it is important for people to take care of the environment on both sides of the national border. The aim of the research projects undertaken by the students was to show how the actions of human beings affect the environment. In this theme, the students were also encouraged to discuss values and habits related to the environment in Finland and Russia.

Theme expert lectures

The Environment Theme began with lectures that experts from Finland and Russia gave in both the Finnish and Russian schools. The lectures were attended by the twelve students involved in the project and their classmates.

The first lecture was given by Researcher Kristiina Korjonen-Kuusipuro from Lappeenranta University of Technology (Finland). This lecture dealt with the relationship between humans and the environment.

Kristiina familiarized the students with the concepts of nature and the environment, and related how the relationship between human beings and the environment diverges in different cultures and societies. Kristiina explained the students that the way we view and understand the environment depends of our cultural and societal background, and our personal experiences. Kristiina also stated that management of environmental questions can be challenging in border regions, where people with different backgrounds and values meet. Despite possible differences in environmental perceptions in Finland and Russia, we have to be able to think of our environment as a common environment.

The second lecture was given by Researcher Maria Tysiachniouk from the Centre for Independent Social Research, St. Petersburg.
(Russia). She talked about forests and forest management in Russia and Finland.

Maria described to the students the pristine (primeval) forests, their vegetation and importance for the global ecosystem. She asked the students to write down problems that they have discovered in forests. The students made a drawing of a tree and wrote down problems concerning trees. Maria discussed these problems with the students. She also pondered with them on whether some of the things mentioned by the students were problems in the first place (e.g. mosquitoes).

In the second part of her lecture, Maria explained about certification of forests. She described what certification means, what the most common certificate systems are and how certification differs in Finland and Russia. At the end of the lecture, the students were able to play different forest owners; local residents, conservationists and businessmen. The groups had to share their ideas of how to manage forests in a sustainable way from the perspective of their own interest group.

In-depth study period

In Finland the in-depth study period dealt with human impact on water systems and the environment. It was given to the Finnish students by Researcher Maaret Paakkunainen from Lappeenranta University of Technology.

The in-depth study period included three workshop days at the university’s chemistry laboratory. The idea was to study snow samples and to see how samples collected from different parts of the city differed from each other.

During the first workshop day, the students liquefied and filtered the snow samples that they had collected. They also learned how to measure water hardness. During the second meeting the students learned about calibration (comparison between measurements) and prepared calibration solutions. Maaret taught the students how to use different kinds of pipettes, and the students practiced using pipettes by measuring and weighing liquid.

During the last meeting the students compared the calibration liquids with the liquefied snow samples and discussed what the differences that they found in the samples implied. The liquids were analyzed with Methrohm’s Ion chromatography, which is an apparatus used for hydro chemical analyzes. The students discovered that the snow sample collected from their school yard in the city center differed from the other samples by its high chloride and nitrate concentration. They concluded that this was most probably the result of the use of road salt. The sample collected from a field, on the other hand, had a high concentration of sulfate, as a result of the use of fertilizer. The results showed that the actions of human beings have an impact on the environment.

In Russia, the in-depth study period consisted of two parts. The first part was given by Researcher Mikhail Nikolayev from the Agrophysical Research Institute. He conducted with the Russian students four workshops about climate and soil in the Karelian Isthmus.

Mikhail’s first lesson was dedicated to atmosphere, weather, and changes in weather. He explained to the students how weather conditions can be monitored; how weather stations work and what kind of devices can be used to measure different weather phenomena.

Mikhail’s second lesson was about climate. He told the students how climate is defined and
classified, and what kinds of climate types there are. Mikhail also showed the students what different statistics indicate about climate, and explained how climate affects living conditions on the earth. He discussed with the students what kinds of problems the climate change is causing and how the North-Atlantic Oscillation influences regional climates. At the end of the second lesson Mikhail told the students about climate in the Karelian Isthmus and gave the students an assignment to make observations about weather conditions in their home village. The students were to observe temperature, pressure, cloudiness, wind and rainy days each day for one month.

During the third meeting Mikhail took the students on a field trip. The first aim of the trip was to study soil; how soil forms and what the composition and features of soil are. The students performed an immediate analysis of soil acidity. The second aim of the trip was to learn about ecosystems. Mikhail explained how ecosystems work, what they consist of and what sustainable ecosystems are like. He also familiarized the students with the concept of biodiversity and discussed what kind of flora and fauna can be found on the Karelian Isthmus.

The last meeting was dedicated to human influence on the environment in Pervomayskoe and the Karelian Isthmus. Mikhail explained what environmental contamination means and what the main polluters of the environment are. Mikhail related how environmental protection is handled on the Karelian Isthmus. At the end of the day the students carried out a practical observation of vegetation diversity in the school yard.

The second part of the in-depth study period in Russia dealt with hydrology in the Karelian Isthmus. It was given by Researcher Natalia Goroshkova from the State Hydrological Institute (GGI, Russia).

Natalia gave four workshops that included two theory lessons, two excursions and field work. In the theoretical part, Natalia explained what the concept of hydrology means and what is the function of the water processes on earth. She discussed how water accumulates in water bodies, how rivers function, what ground waters are, and what is covered by hydrochemistry studies. She also explained how man-made elements influence the composition of water.

During the practical lessons the students examined water quality with different indicators. For this purpose, a special backpack containing measuring devices and chemicals was purchased. The students familiarized themselves with the equipment, took water samples from the nearby river, and analysed the quality of the water.

The first excursion was made to the Main Experimental Base of the State Hydrological Institute in the village of Illichevo. In the experimental base, riverbed evolution is studied with models made of sand and concrete. In the Riverbed Laboratory, the students learned how rivers function, where they get their water from, how the speed of water flow varies, and what measurement techniques are used to determine the flow rate of rivers.

The second excursion was made to the Gulf of Finland. The students conducted observations by the sea in a location where the waters of all the small rivers and lakes from their home village Pervomayskoe terminate.
Joint seminar

The joint seminar for the Environment Theme took place in Pervomayskoe, Karelian Isthmus. The aim of the seminar was to share knowledge that the Finnish and Russian students had gained during the themed lectures and in-depth study periods. The seminar included so called scientific sessions and excursions to locations relevant to the theme.

The first scientific session started with a short introduction to what research is and continued with a drawing exercise. The students were asked to draw a scientist or a researcher and think what qualities are necessary for scientists. The students’ drawings depicted archetypal scientists; men with glasses and beards working in laboratories. Olga, the Russian coordinator, explained to the students that this is the way most people view scientists. She hoped that during the project the students would obtain a more diverse picture of what scientists do and what it is like to be a scientist.

During the second scientific session the students gave presentations of the research projects that they had undertaken during the in-depth study periods. The students had prepared PowerPoint presentations for this purpose. The goal of this session was to practice presentation skills and to learn how scientists present their research results in seminars and conferences.

The joint seminar also included two visits. The first visit was made to the Main Experimental Base of the State Hydrological Institute in the village of Ilichevo, which the Russian students had visited during the in-depth study period. At the time of the visit, the scientists working at the base were modeling river construction in Sochi, which hosted the 2014 Winter Olympic Games and where, therefore, large construction projects were undertaken.

The second visit was made to the Poultry Plant “Roskar”, which is one of the largest producers of egg, egg products, and poultry meat products in Russia. The purpose of the visit was to show how production plants have to meet the latest environmental and production standards (the plant used to be one of the heaviest polluters in the area), but the visit also raised many questions among the students about modern food production.

Peer teaching sessions

After the joint seminar, a peer teaching session was organized in the Finnish school. The students told their classmates what kind of research they had performed at the university’s chemistry laboratory and what kind of research results they had received. They also showed pictures of the joint seminar in Pervomayskoe, and reported on the places that they had visited.

On the Russian side, the peer teaching session took a different form. The students took part in the 8th ecological conference for school children in the Vyborg District. The students told the participants of the conference about the Cross-Border Citizen Scientists -project and what kind of environmental questions they had studied in the project.
The other side of the story
The History Theme

- Lectures about historiography and national history writing, and about the role of the past and memory in everyday life.
- In-depth study period about the history of the Finnish-Russian border area.
- Joint seminar in the city of Vyborg, Karelian Isthmus (Russia), including scientific sessions and a city tour, city orienteering and visits to Park Monrepo, Vyborg Castle and Museum of Lenin.
- Outcomes: Posters of the research assignments.

The History Theme had two objectives. The first one was to teach the students about the history of the South-East Finland - North-West Russia border area. This objective was based on the fact that history lessons in the secondary school only touch on local history very briefly and young people do not often have much knowledge about the history of the border area.

As in many other border areas, the South-East Finland - North-West Russia border area has experienced great changes in the last 300 years. After belonging to the Kingdom of Sweden until the beginning of the 19th century, the territory was conquered by the Russian Empire. In 1809, the territory became a part of The Grand Duchy of Finland (an autonomous part of the Russian Empire), and in 1917 a part of the Independent Republic of Finland. After the Second World War the territory was divided between The Soviet Union and Finland in the Moscow and Paris Peace Treaties (1940 / 1947). After the collapse of the Soviet Union in 1991, the border area has witnessed a rapid increase in number of people crossing the Finnish-Russian border. The border area is changing as the border no longer functions as an obstacle for the movement of people and goods.

The second objective of the History Theme was to give the students a basic understanding of how historical knowledge is produced. History writing has been and still is, at least to some extent, nationally orientated. In schools, history is learned from texts that have been approved by national governments. In border areas, where people from different countries and nationalities meet, different perspectives and interpretations of history can cause confusion and misunderstandings. Therefore, the students learned about the writing of history both during the lectures and in their own research assignments and field work.

Themed lectures by experts

The first themed lecture in the History Theme was given by Researcher Kati Parppei from the
University of Eastern Finland. Her lecture dealt with historiography and the writing of national history.

Kati explained to the students that history has always been written and created by somebody for a specific purpose and therefore no universal truth of historical events exists. She told the students how writing of national histories began in the 19th century when nationalism dominated in Europe and a national identity began to form in different countries. During that time common features were sought in language, arts, literature (e.g. folklore poems), and historical events, and nations became objects with which people could identify themselves.

Kati related that in recent years a “borderland history writing” has emerged. This is a new type of historical literature, where history is viewed as a common history of a certain place and not as two histories of separate nations. This kind of writing about history does not concentrate on wars and battles, but pays attention also to the histories of ordinary people.

The second lecture of the History Theme dealt with the role of the past and memory in our everyday lives. It was given by Researcher Ekaterina Melnikova from Peter the Great Museum of Antropology and Ethnography (Kunstkamera, St. Petersburg).

In the beginning of her lecture Ekaterina asked the students to give examples of how they gained information about history and historical events. The students mentioned history lessons at school, history school books, monuments and museums. Ekaterina added oral communication and emphasized that it is an important means of passing on cultural heritage and family histories. Ekaterina pointed out that in history lessons we often learn the official history narratives, but not the experiences of ordinary people. The writers of modern history are interested in these narratives, because they can give a more complete picture of historical events.

Ekaterina gave the students examples of how history is present in our everyday lives. She used Russian Karelia as an example and showed how monuments and museum exhibitions remind us of the war history of Karelia. Previously, the monuments and exhibitions pictured only the “Russian side of the story”, but lately new joint monuments for soldiers and new museum exhibitions including both the Russian and Finnish perspectives have been organized.

Ekaterina reminded the students that we actually study history not in order to learn about the past, but to learn about the present. What is remembered of the historical events and what is left out, denotes aspects of our society just as much as about our history.

**In-depth study period**

The aim of the in-depth study period in Finland was to study the history of the Finnish-Russian border with the help of old maps. The lessons were given by Museum Amanuensis Jukka Luoto from the South Karelia Museum.

The Finnish students travelled to the South Karelia museum on three separate occasions to learn about the history of the Finnish-Russian border. During the lessons, old maps of Europe, Scandinavia, and Finland were used as study and research material. The idea was to study where the Finnish (former Swedish) – Russian border was located during different time periods.

The first gathering at the museum was dedicated to maps dating back to the 16th
century and earlier. Jukka asked the students to draw the Swedish-Russian border lines from 1323, 1721, and 1743 on a modern map. For the students this exercise was very illustrative. They noted that they had not realized earlier how close to their home these historical borders were located.

The second lesson was about the 19th century. In the 19th century, Finland was an autonomous part of the Russian Empire. Parts of south-east Finland had already been part of Russian Empire since 1721 and 1743. Jukka showed the students maps of their home city Lappeenranta from the 19th century. Lappeenranta was founded by the Swedes in 1649, and ceded by Sweden to Russia in 1743. The maps from the 19th century showed the fortress of Lappeenranta and sections of the old part of the city. The students were surprised by how many buildings and constructions from the 19th century can still be found in the city.

The third lesson at the museum was dedicated to the 20th century. Finland became an independent state in 1917. Jukka explained to the students that south-east Finland and the Karelian Isthmus experienced radical events in the Second World War. The territory was occupied, evacuated, and resettled five times between the start of the Winter War in 1939 and the end of the Continuation War in 1944.

The modern day boundary between Finland and Russia dates back to the Moscow (1940) and Paris (1947) Peace Treaties. Jukka showed on maps how the war history of the 20th century is present in our times in the form of defense structures. Today the defense lines from the First World War and the Second World War often serve as destinations for tourists and history enthusiasts.

After the lessons at the Museum, the students prepared posters of the 18th, 19th and 20th century events in the Finnish (Swedish) - Russian border area. The students worked in pairs and each pair made a poster of their own century. The posters included maps and texts about the main events of the century.

In Russia, the history of the Finnish-Russian border area was explored with the help of field trips and case studies. The field trips were organized and studies supervised by a teacher, Valentina Karabanova, from Pervomayskoe school. Valentina’s aim was to concretize history for the students, and to show how the local history of the Karelian Isthmus is connected to major events of world history.

The first field trip was made to the Cross Stone, which is a border stone of the Nöteborg border between the Swedish Kingdom and the Great Novgorod from 1323. During the trip the students learned that the Treaty of Nöteborg was concluded at the Fortress of Oreshek after 30 years of war between Sweden and Novgorod. The Treaty stood until Great Novgorod lost its independency and was subjugated to the Grand Duchy of Moscow in 1478.

The second field trip was made to Kamysheiskoe swamp seven kilometers away from Pervomayskoe village. In 1944, during the Second World War a Soviet aircraft IL-2 crashed on the swamp and to this day the remnants of the plane lie in the swamp. Valentina told the students that the aircraft had been taking part in an air strike, when the enemy's battery had shot it down. The aircraft had been piloted by a junior lieutenant and a sniper, who was only 19 years old at the time of the crash. Local residents found one of the pilot’s bodies near the aircraft five years after the crash in 1949, but to this day nobody knows which one of the pilots it was.
Interview exercise

The in-depth study period of the History Theme included an interview exercise. In Finland this exercise was given by Researcher Mikko Kohvakka from Lappeenranta University of Technology and in Russia by Researcher Olga Brednikova from the Centre for Independent Social Research.

The aim of the interview exercise was to introduce the students to the method of interviewing. Mikko and Olga gave advice for the students of how to make good interviews. They said that a successful interview is well-prepared and well managed. Interaction between the interviewer and interviewee is natural and the participants trust each other. They also pointed out that in an interview questions and answers are of equal importance.

After the theoretical part, the students conducted interviews with people that had been living on the Karelian Isthmus just before or after the Second World War.

The Finnish students conducted interviews with Finnish people who had been living on the Karelian Isthmus before the territory was ceded to the Soviet Union in 1944. Most of the students had either a grandmother or a grandfather whom they could interview. One of the students did not have any relatives that she could interview. Therefore, she had an interview with a member of Kivennapa-organization, which is one of the many local heritage organizations that Finnish people founded after the Second World War to foster contacts, culture, and historical knowledge of their old home villages in their new places of residence.

The Russian students interviewed elderly inhabitants of their village, who had moved from different parts of the Soviet Union to the Karelian Isthmus directly after the end of the Second World War. Government officials encouraged families to move to the Karelian Isthmus, and for many families this was a way to gain a better living. Some of the immigrants were only teenagers when they moved to Pervomayskoe.

The interviews of the Finnish and Russian students included questions about what life was like in the Karelian Isthmus in the 1930s and 1940s, how people experienced the evacuation and relocation, and how they adapted to their new homes and lives after the war.

After conducting the interviews, the students discussed with Mikko and Olga what their interviews had been like. The discussions continued between the Finnish and Russian students, teachers, and coordinators during the joint seminar.

The students discovered that all the interviewees had good childhood memories of living in the Karelian Isthmus. For some of the Finnish interviewees their war time experiences and the loss of Karelia had been traumatic and they never returned to their old homes. Some, on the contrary, visited their old homes regularly. The Russian interviewees sometimes had such visitors from Finland and these meetings were friendly.

The students liked the interview exercise very much. The people they interviewed had first-hand experience of the historical events that they had been studying. The students themselves could also relate to the experiences of the interviewees. In this way, the task was a means of bringing a human perspective to the study of war history. The coordinators pointed out that the students had actually gained knowledge that people with traumatic experiences hardly tell without being interviewed.
The third field trip took place in the home village of the students. Valentina took the students to the "castle hill" in Pervomayskoe, where the ruins of the Fortress Kivinebb lie. The fortress was founded over 550 years ago in 1452 by the Swedish Kingdom. During the period of the Finnish autonomy the castle hill housed a school. The school was established in 1874 and its foundation can still be found in the south-eastern part of the hill.

The last field trip started with a visit to Yalkala museum, which is a small museum dedicated to the history and ethnography of the Karelian Isthmus. The students had a guided excursion in the museum. The excursion was held by the Director of the Museum, Nikolai Simankov, who told the students about the Second World War in the Karelian Isthmus and showed photographs, artifacts, documents and maps of the war events.

After the museum excursion, the students visited the Mannerheim line, which is a defense line that Finland built against the Soviet Union directly after gaining independence in the 1920s and 1930s. Senior researcher Irina Vik from Yalkala museum headed the excursion. She told the students that the line was used by the Finnish Army during the Winter War in 1939 to 1940. The line was named after the Commander in Chief of the Finnish Army, Carl Gustaf Emil Mannerheim. During the trip the students had an opportunity to go inside the concrete bunkers, a few of which have remained and serve as remnants of the line.

After the field trips, the students examined the places that they had visited further, and made PowerPoint presentations of their case studies. Some students worked individually and some in pairs. The presentations were later converted into posters, which were exhibited together with the posters of the Finnish students.

**Joint seminar**

The joint seminar of the History Theme took place in the city of Vyborg in Russia. Vyborg was chosen as the location for the seminar because of its multinational history. The city was founded in 1403 by the Kingdom of Sweden and it has since belonged to the Russian Empire, Finland, the Soviet Union and finally present-day Russia.

The program of the seminar included scientific sessions, visits to museums, city orienteering and a joint evening program. The first day started with student presentations. The Finnish students presented the posters that they had made of the 18th, 19th and 20th century events in the Finnish-Russian border area. The Russian students presented their case studies of the Cross Stone, the Fortress of Kivinebb, the war-time aircraft IL-2, and the Mannerheim line. One of the students showed a video that she had made of the interview with Lidia Ivanovna Kokouлина, an immigrant, who moved to the Karelian Isthmus in 1947.

In order to familiarize the students with Vyborg, the coordinators organized a guided walking tour in the city center and a bus tour around the city. The students also had a guided tour in Monrepos, which is a park established in the second half of the 18th century and which features, for example, in a Finnish nostalgic song about Vyborg.

The students also visited two historical museums. The first one was Vyborg castle, which was established in 1293 as a fortification against Novgorod. The other one was the Museum of Lenin. Lenin hid in the house of the museum for two weeks in the autumn of 1917 before heading to St. Petersburg to lead the revolutionary actions. The aim of all the visits was to show the students how the history of different time
periods is present in Vyborg and how these periods are intertwined with each other.

When visiting the museums, the coordinators asked the students to look at the museum exhibitions not only as sources of knowledge, but as exhibitions that somebody has planned and compiled. The students were asked to pay attention to what periods of history are represented in the museums and how the periods are represented; what museum pieces are on display and what kind of information is available for the visitors. The students then worked in mixed groups and planned advertisements for their own imaginary museum exhibitions of Vyborg.

In addition to the visits, the students familiarized themselves with the history of Vyborg in an orienteering assignment. The Finnish teacher, Tuuli Utunen had prepared the task for the students by choosing pictures of buildings from different time periods. The students were to find these buildings in the city and to answer questions about the building and the history of the city. To encourage interaction between the Finnish and Russian students, the students were divided into three mixed groups. The Finnish-Russian groups walked around the city looking for the objects and competed with other groups as to who finishes first. In the end, all the teams were given awards. Judging on the feedback, the students liked the orienteering best of all the activities of the joint seminar.

In order to find out how the students view the history of the Finnish-Russian border area, the coordinators gave the students special assignments. First, the students had to list all the historical events and figures that they knew about the neighboring country (Russian students of Finland and Finnish students of Russia). Second, the students had to write about the city of Vyborg; what it means for them and how they experienced the city. All the students noted that they could feel the long history of Vyborg while walking in it. The boys had especially enjoyed the visit to the castle and all that they had learned of the medieval history of the city.

**Peer teaching sessions**

The peer teaching sessions completed the History Theme in the schools. In Finland, the students related their classmates how they had studied the old maps at the museum and travelled to Vyborg to the joint seminar. The students presented their posters and the posters were hung up in the school for all the school children, teachers, and parents to see.

In Russia, three peer teaching sessions were organized and over sixty students learned about the project activities. First Andrei and Nikita presented their case studies and told about the joint seminar to one student group. Then Aleksandra gave two lessons in which she talked about the History Theme and about the interviews that she had conducted with the elderly inhabitants of the village. The students also hung up the posters prepared by the Finnish students in the school.

Besides the peer teaching sessions at the schools, the research results of the History Theme were presented in two exhibitions. The posters of the Finnish students were translated into Russian language and the PowerPoint presentations of the Russian students were made into posters. An exhibition was organized in the Leningrad Region Museum Agency and in Yalkala Museum. The exhibitions were open to all. In Yalkala the exhibition was organized at the same time as an international history conference. The exhibition received good feedback and was discussed among the participants of the conference.
My business, your business?
The Business Theme

- Lectures about markets and the history of markets, corporate responsibility, and the Finnish-Russian economic relations.

- In-depth study period in the form of an entrepreneurship workshop.

- Joint seminar in the city of Lappeenranta (Finland) focusing on cross-border markets. Visits to small and large enterprises involved in cross-border markets.

- Outcomes: Business plans, company portfolios and presentations.

The Business Theme aimed at giving the students basic knowledge about markets and trade, and about business responsibility and entrepreneurship. In particular, the theme introduced the students to Finnish-Russian trade relations and business and entrepreneurship in the Finnish-Russian border area. The students visited companies involved in cross-border business and tried their entrepreneurial skills by developing imaginary companies.

Theme expert lectures

The first lecturer of the Business Theme was Researcher Laura Olkkonen from Lappeenranta University of Technology (Finland). Her lecture dealt with corporate responsibility.

Laura began her lecture by explaining that corporate responsibility is a broad concept meaning a company’s responsibility for its societal effects. These effects can be, among other things, the rights of local people, employees or customers, environmental protection, financial sustainability and human rights. By being responsible (or irresponsible), companies can have significant effects on their surroundings. Laura told the students that people can affect companies by being responsible customers, who pay attention to what products they buy and consume.

Laura categorized companies according to their “degree of responsibility”. At one end of the spectrum there are companies that do charity to compensate their negative effects, and at the other end there are social businesses that try to find solutions to social or ecological problems and use the largest part of their profit to advance these social goals.

Laura’s lecture included a practical part, in which she asked the students to think of companies that they know, and give examples of ways that these companies are or are not responsible.

The second lecture of the Business Theme dealt with markets and the history of markets. It was given by Docent Yana Krupets from the
Department of Sociology in Higher School of Economics (St. Petersburg, Russia).

Yana first went over the different meanings of the concept of ‘market’ and discussed how the market has changed from the Middle Ages to the present day. She explained to the students that economy, as an independent sphere of activity, was created in the 18th century in connection with the industrial revolution. At that time the mass market was born in the fields of production, finance and consumption.

Next Yana talked about the postindustrial society, which is characterized by the global market. This means that people from different countries are dependent on production from outside their own economy. The global economy often creates global inequalities, where, for example, some people function mainly as producers of goods and others as consumers.

At the end of her lecture, Yana discussed how modern societies and economies are built around consumerism. Yana concluded that it actually takes a lot of determination and self-discipline to consume less.

In addition to the more broad topics about business and markets, the Business Theme included a third lecture that dealt specifically with Finnish-Russian economic relations. This lecture was given by Professor Riitta Kosonen from Aalto University (Finland).

Riitta began her lectures by illustrating the differences between Finnish and Russian national economies. She used the terms ‘giant’ and ‘dwarf’ to describe the size difference between the countries; Russia has a territory 50 times larger and a population 26 times larger than Finland. In terms of Gross Domestic Product the Russian economy is larger than the Finnish economy, but GDP per capita is over 3.5 times higher in Finland than in Russia.

Riitta told the students that Finland and Russia have long traditions in trading. During the Soviet time the trade between the countries was regulated by the states and only a small number of enterprises were allowed to take part in it. Today Russia is Finland’s most important trading partner and Finland Russia’s 14th most important trading partner.

Based on her studies, Riitta showed the students what the Russian market looks like from the Finnish perspective, and vice versa. The Finnish entrepreneurs consider the Russian market appealing, because of the growing economy and the success that Finnish companies have had in the market. What they see as weaknesses in Russia are the poor infrastructure, security risks, and the dependency of the economy on oil. The Russian entrepreneurs, on the other hand, consider the Finnish market stable and safe, but at the same time small, heavily taxed and bringing low profits.

Riitta’s lecture material included several illustrative pictures, charts and figures. With this material it was possible for the students to obtain a good idea of the history and present-day situation of Finnish-Russian trade.

In-depth study period

In the Business Theme the in-depth study period took the form of an entrepreneurship workshop. In the workshop, the students learned about entrepreneurship and business, and created their own imaginary companies.

In Finland, the entrepreneurship workshop was led by Researcher Elena Ruskovaara from
Lappeenranta University of Technology. Elena’s goal for the workshop was that the students would recognize and develop their personal strengths, gain interaction and group working skills, and experience what it would like to be an entrepreneur.

Each of Elena’s four workshop meetings included a theoretical part. As an introduction to what entrepreneurship could be like, Elena asked the students to read two articles with stories of two different Finnish enterprises. The idea of the articles was to show that there are different ways of doing business and that entrepreneurship often starts from personal enthusiasm and innovation.

To introduce the students to business planning, Elena showed the students three short videos. The first video was about planning a business. The second video was about making and updating a business plan. The last video was about marketing. After each video Elena made sure that the students understood the message of the video and that they would apply the tips given to their own business plans.

To give the students an idea of what it would be like to run a business, Elena asked them to play a board game called “The Shoe Business”. The game teaches basic concepts of entrepreneurship and business economics. By playing the game the students learned that being an entrepreneur is not a simple task. Besides taking care of the business internally (managing the production, finances and personnel), a business is affected by external forces such as economic booms and recessions.

Elena also introduced the students to cost accounting and such basic concepts as direct and indirect costs. She illustrated how it is possible to determine whether a company is making profit or loss by reducing variable and fixed costs from the sales revenue. Elena explained that when pricing products or services one should, besides making calculations, benchmark competitors.

The practical aim of the entrepreneurship workshop in Finland was for the students to develop their own imaginary companies. The outcomes of the exercise were business plans and company presentations.

The development of the companies began with brainstorming. Elena gave the students no limitations as to what kind of companies they could establish. The only precondition was that the business had to have a relationship with the Finnish-Russian border.

Two groups were formed and both groups held a meeting, where they (based on their personal strengths) decided who would be the director of the company, who would be responsible for marketing and who for budgeting and finances. Then the students worked on their business ideas and defined what kind of products / services their company would offer, what would be the advantages of these products, who would be the customers and what would be the image of the company.

During the next workshop meeting the students discussed how the services and products of their companies would be produced, sold and marketed. They discussed the pricing of the products and services, and the physical, economical and mental resources of their companies. They decided what kind of machines, premises and employees with different skills they need. Then they named their companies and decided upon logos and slogans for their businesses.

The next meeting was dedicated to completing the marketing and presentation materials. The students made both general
presentations of their companies and special marketing presentations for customers.

In the final meeting of the workshop, the students introduced their companies. The first group had planned with a cottage village that offered accommodation for Russian tourists. The name of the company was "Lessinen", which was a combination of the students' last names. The other group established a beauty parlor, which offered ecological beauty treatments and homemade organic cosmetics, also primarily for Russian customers.

In Russia, the entrepreneurship workshop was led by Senior Researcher Nadezda Dobryanskaya from Yalkala museum. Nadezda's workshop included five meetings and it was dedicated to tourism and travel business.

Nadezda's lessons included both theoretical information and practical work. In the first lesson Nadezda went through basic concepts of travel business, such as inbound, outbound, domestic, international, group and individual tourism. She also talked about travel business in the Leningrad oblast and Vyborg District, focusing on culture and history related tourism.

In the second lesson, Nadezda explained to the students what resources, demand and product mean in the travel business. Then she showed what kind of different actors there are in the field of tourism industry. Nadezda pointed out that management and marketing in the tourism business is very important, since many countries, regions and cities are competing for the same tourists and many travel agencies are offering same destinations and services.

In the third lesson, Nadezda discussed the so called ‘nostalgic tourism’. Nostalgic tourism is a form of tourism, in which the person travelling has an emotional connection with the place that he or she travels to. In the Karelian Isthmus these visits are made by Finnish people who themselves or whose relatives used to live in the Karelian Isthmus before the Second World War. The students were to find material in the local newspapers about nostalgic tourism.

The practical aim of the entrepreneurship workshop in Russia was for the students to establish an imaginary travel agency. The outcomes of the exercise were company portfolios.

To begin with, the students discussed the aims, objectives and mission of the company, and appointed a director, a marketing manager, a tour manager and an accountant. They voted for the name of the travel agency, and as a result the agency was named “Sampo-tur” according to the “money mill” in the Finnish national epic Kalevala. The students were also given the task of designing a logotype for the company. They presented their designs and discussed which one to choose for the company.

After the basic structure of the company was clear, the students started to work on a tourist product for the company. It was a tour in the Vyborg region. First Nadezda introduced the students with competitive analysis and asked the students to ascertain information about competing tourist products and agencies in Saint Petersburg and the Leningrad oblast. The information that the students found in the internet was collected into a table. The table enabled the students to compare prices, levels of service and additional services offered by the competing travel agencies.

Next, Nadezda showed the students how to conduct a SWOT analysis. She explained that the analysis studies a company's strengths, weaknesses, opportunities and threats. With
the help of the SWOT analysis, Nadezda and the students discussed market segmentation and positioning of “Sampo-tur” in the travel market of Leningrad oblast.

After the SWOT analysis, the students made calculations to see whether their business would be profitable or not. Nadezda advised the students to include in the calculations at least the annual salaries of the workers, office rent, prices and maintenance costs of different technical devices and marketing costs. The students also made calculations as to the price of the tour. They listed and confirmed all expenses and priced the tour for the customers.

The entrepreneurship workshop ended with a visit to Yalkala museum in the village of Ilichevo and to “Ilichevo” holiday village. In Yalkala senior researcher Valentina Pavlovna Abakumenko from the museum led the students along the “Kalevala path”, which is part of the museum excursion in Yalkala. She told the students that indoor and outdoor excursions are an important part of any tour. She explained how to choose the excursion depending upon who the participants of the excursion are, what the weather conditions are like, how much time there is for the excursion etc., and how to keep up the interest of the listeners and organize excursions in interactive way.

The forest path took the students to “Ilichevo” holiday village, where the director met the group and told about their business; how it works, what the greatest challenges of the holiday village business are, and what their future plans look like. The visit was educating for the students as they could observe how the travel business works in a real life situation. In conclusion, the third theme certificates were given to the students, proving their basic knowledge in the tourism business.
Market Research Exercise

In the Business Theme the students carried out a small market research study. The purpose of the study was to learn about the method of questionnaire survey and to collect information about cross-border travelling in the Finnish-Russian border area.

First the students learned how to make questionnaires. They were guided by the coordinators and by market study specialists. In Russia Researcher Yana Krupets shared her experience with the students. Yana’s own areas of interest include sociological study of markets and money, and quantitative research methods. In Finland, the students received tips from Olli Kuivalainen, who works as a professor of international marketing in Lappeenranta University of Technology.

The specialists told the students there are several facts that a researcher has to be aware of when making questionnaires. The researcher has to decide how many questions to include in a questionnaire (questionnaires should be compact), which questions to choose, how to keep the questions objective (respondent’s answers should not be steered by the researcher) and whether to use open questions or questions with answer choices. Kuivalainen also reminded the students that studying markets with a questionnaire is just a part of a complete market analysis, which includes, among other things, analysis of existing competition.

Guided by the tips, the students prepared their questionnaires. The aim of the study was to find out how much people living in the Finnish-Russian border area travel across the border and what is the potential in the travel market. The results of the survey were to help the students to discover what kind of companies and services are needed in the border area.

After final touches were made to the questionnaires, the students were given two weeks to collect answers in their schools and cities. Each student interviewed eight to ten respondents.

During the next meeting the coordinators showed the students how to analyze the answers. They demonstrated how to check and number the questionnaires, how to encode the questions and answers choices, and how to type the coded answers into a spreadsheet. The coordinators used a simple excel spreadsheet, in which the students typed the codes. Each student also performed a simple analysis and made illustrating diagrams of the results.

The results of the market analysis showed that people in the Finnish-Russian border area have a lot of experience of travelling to the neighboring country.

On the Finnish side, there were all together 40 respondents. Most of the respondents had been to Russia as tourists or on a school trip (23% of the respondents were under 20 years of age). The most frequently visited cities were Vyborg and St. Petersburg. Culture, sightseeing and shopping were the most popular motives for visiting Finland. The places that the respondents wished to visit were Moscow, St. Petersburg and the Black Sea.

On the Russian side, there were all together 48 respondents. One third of them were 12 to 18 years old. The majority of the respondents (58%) had visited Finland. The most visited places were Helsinki and Lappeenranta. Shopping, cultural tourism and recreation were the most popular motives for visiting Finland. The respondents were attracted by Finland’s nature, culture, and shops. Lack of motivation and financial problems prevented some respondents from travelling to Finland.
**Joint seminar**

The joint seminar for the Business Theme took place in the city of Lappeenranta in Finland. Lappeenranta was chosen as the location for the seminar, because the field of trade and services has been rapidly growing in the city during the last ten years as a result of the cross-border traffic and tourism. The seminar included scientific sessions and visits to companies that operate in the Finnish-Russian border area.

The companies that the students visited included both small and medium sized enterprises and one large multinational company. Before the visits the students were given questions that they had to think about and pose to the hosts during the visits. The questions of the Finnish students were about entrepreneurship in general and the questions of the Russian students about the relevance of the Finnish-Russian border for the companies.

The first company that the students visited was Disha’s fish, a company specializing in fish products. The company has, over a ten years period, developed from a small company with a fish production plant and one or two shops to a company employing 130 workers. The second company was TAK Oy, which provides market research studies and other information services for companies. The third company was the Finnish-Swedish multinational forest industry enterprise Stora Enso, which employs, worldwide, around 28 000 people. The fourth company that the students visited was Patalaiska cottages, which is a small family-run company with five rental cottages close to the Finnish-Russian border. The owner not only introduced their business, but also told the students a lot about being an entrepreneur. The last company was Wirma (Lappeenranta Business & Innovations), which is a city-owned company that provides services for entrepreneurs and companies, and attracts new businesses to the Lappeenranta region.

After the visits, the students shared their impressions and experiences in a round table discussion. They also answered the questions that they had been given before the visits.

During the other scientific sessions the students presented the virtual companies that they had developed in the entrepreneurship workshops. They also played a recruiting game, in which they had to place themselves in the position of company owners and job seekers; they wrote fictitious résumés and played their parts in fictitious job interviews.

Further, the students had a task of finding solutions in a situation, where two businesses were in competition with one another. In this so called “café exercise” the students had to imagine that they were owners of a café, situated close to the Finnish-Russian border. One morning they wake up to discover that a new identical café has opened across the street from theirs. The students had to think of ways to overcome the situation and to develop their business.

The seminar ended with a round table discussion about the project itself and the effects that it had had on the students and their perceptions of the neighboring country and its inhabitants.

**Peer teaching sessions**

After the joint seminar peer teaching sessions were held in the Finnish and Russian schools. The students shared their experiences in the business theme and introduced their virtual companies to their classmates. At the end of the session the students asked their fellow students to perform the “café exercise”.
Cross the line!
The Mental Borders Theme

- Lectures about border studies, and ethnicity and ethnic stereotypes.
- In-depth study period with joint Finnish-Russian research projects. Studies about cross-border travelling, ethnic stereotypes, and newspaper coverage of border area, and Finland / Russia related articles.
- Joint seminar in the city of Imatra (Finland) and the city of Svetogorsk (Russia). The seminar included scientific sessions and field work related to the Finnish-Russian border and the twin city of Imatra and Svetogorsk.
- Outcomes: Research reports of the joint studies.

The aim of the Mental Borders Theme was to study borders and border areas. Borders were looked at not only as physical lines separating countries, but as human constructions that affect our understanding of the world and ourselves. The theme introduced the students to border studies and the study of ethnicity. The Finnish and Russian students had joint research projects, in which they collaborated across the border.

Theme expert lectures

The first lecturer in the Mental Borders Theme was Researcher Olga Brednikova from the Centre for Independent Social Research, St. Petersburg (Russia). Her lecture was an introduction to border studies.

Olga started her lecture by posing the students questions. She asked what kind of borders there are, how borders between states have come into being, how borders change in our days, what are the specificities of border areas and would a borderless world be possible. After that she discussed the concept of borders. Borders are not only physical lines between states, but a way to think, to categorize and make the world more understandable.

Next, Olga told the students what kinds of different topics border scholars study. She said that border scholars have discussed the possible disappearance of borders due to globalization, but have come to the conclusion that even if physical borders are removed borders still exist in the minds of people. To give a concrete example of how borders affect our everyday lives, Olga told the students about the history of the Finnish-Russian border.

At the end of her lecture Olga gave the students an assignment. She asked them to choose which of the scenarios developed by sociologists suits the Finnish-Russian border area the best. The first scenario was that the closeness of neighbors emphasizes differences and eventually distances
neighbors from each other. The second scenario was that the closeness of neighbors enhances the mingling of cultures and the third one that the closeness and mingling of cultures generates a new culture. The students discussed the scenarios and justified to the other students their choice.

The second lecturer in the Mental Borders Theme was Researcher Joni Virkkunen from the University of Eastern Finland. His lecture dealt with ethnicity and ethnic stereotypes.

Joni started his lecture by defining the concept of ethnicity. He stated that ethnicity and national identity are based on certain characteristics (language, religion, history etc.) that form the idea of who we are and how we differ from others. Nation states are never monoethnic, but inhabited by different ethnic groups.

Joni told the students that all of us have several identities. Having several ethnic identities can be problematic, especially in areas where there are ethnic tensions. Ethnic stereotypes, ideas of what certain nationalities are like, are produced among other things in school books and products of popular culture (music, films, comics etc.).

At the end of his lecture, Joni divided the students into groups and gave them assignments about discrimination and racism.

Some groups had to name groups of people that they know face prejudices, discrimination and racism. Some groups had to ponder what group pressure is and give examples of situations, in which they had gone against group opinion or action. Some groups had to name groups that they belong to or identify themselves with, and list prejudices that people have of these groups.

**In-depth study period**

In the Mental Borders Theme the in-depth study period was dedicated to small scale research projects that the students performed in joint Finnish-Russian groups. The period familiarized the students with border studies and taught them different methods of sociological and geographical inquiry.

The in-depth study period was held by the coordinators of the project, since they both have been conducting research on borders and border areas. In Finland, the period was led by Researcher Virpi Kaisto from Lappeenranta University of Technology and in Russia by Researcher Olga Brednikova from the Centre for Independent Social Research, St. Petersburg.

The students were divided into three groups. Each group had its own research task and method. The first group studied people that travel often to Finland / Russia. Their aim was to find out what it is like to cross the Finnish-Russian border, and to travel in Finland / Russia. They conducted interviews, and transcribed and analyzed the interviews.

The second group studied articles about Finland / Russia and the Finnish-Russian border area in local newspapers. Their task was to discover what is written about the border area and the neighboring country in the newspapers; how much is written and what the articles are like.

The third group studied jokes about Finland / Russia and Finnish and Russian people. The task of the students was to find out what kind of ethnic stereotypes exist in Finland of Russians and in Russia of Finns.

The Finnish-Russian groups did not have a chance to meet during the in-depth study period. Therefore a Skype meeting was organized to discuss research plans, questions
and time tables. (Two more Skype discussions were scheduled, but could not take place because of problems in finding a time that would suit both schools.) During the Skype meeting the first group agreed on the themes and questions that they would include in the interviews. The themes were travel preparations (such as getting a visa), experiences of crossing the border and travelling in Finland / Russia. The second group discussed which newspapers they would include in their study and how they would analyze the articles. The third group agreed on a common scheme for analyzing the jokes.

Further, the students worked separately in Finland and Russia. The students of the first group made two to three interviews each. The Russian students interviewed their acquaintances and the Finnish students interviewed people working in their school and in the shops of the local shopping centre. The method that the students used was a semi-structured interview method. In other words, the questions were same for all the respondents, but the respondents could answer the questions freely as there were no answer choices. After making the interviews the students practiced transcribing the taped interviews. Finally, they analyzed the answers with the help of a matrix, where answers of each respondent were written under the questions.

The students of the second group went over the issues of the newspapers that they had selected for the analysis. The Finnish students chose to analyze Etelä-Saimaa, which is the main newspaper of the province of South Karelia. The Russian students analyzed two newspapers. The first was “Rekvisit”, which is a non-governmental paper distributed in border towns of Leningrad region, and the second “Vesti”, which is the official newspaper of the Government of the Leningrad region. To begin with, the students counted how many articles they found related to Finland / Russia and the Finnish Russian border. After counting the articles they used a thematic approach to group the articles. Finally they took some articles for closer analysis.

The third group searched for jokes on the internet and asked their classmates, friends and relatives if they knew any jokes about Finland or Finns / Russia or Russians. They grouped the jokes thematically, and chose one or two jokes from each thematic group for a closer analysis. In this analysis they identified the main point, characters and events of the jokes, and discussed what kind of characteristics the Finnish / Russian people are described with.

As a result, each group wrote a research report. The report was written in a form of a basic scientific report, consisting of (1) an introduction, (2) description of the analysis and research results, and (3) conclusions. First the students wrote their parts separately in their own mother tongue. The coordinators translated these parts into English. Later during the joint seminar the students discussed the research results together and wrote joint conclusions to the reports. The reports were not long, only approximately four pages, but served the main purpose, which was to practice scientific writing style and form.

With regard the research results, the first group found that the Russian and Finnish respondents answered the questions about travel preparations, crossing the border and travelling in Finland / Russia in a similar way. Preparing the travel documents, such as passports and visas, takes a long time but is profitable if a person travels often to Finland / Russia. In general, the respondents were interested in the neighboring country and had
positive experiences of travelling in it. Most often they travelled to Finland / Russia to visit relatives, to spend free-time and to go shopping. The interviewees had noted that not knowing the language of the neighboring country limits interaction with the local inhabitants.

The second group discovered that there is a substantially larger amount of articles in the Finnish newspaper about Russia and the Finnish-Russian border than in the Russian newspapers about Finland and the border. The reason for this, the students believed, is the large amount of Russian tourists in Finland and the economic dependence of Finnish border towns on tourism from Russia.

Articles found in the newspapers supported this claim. The most popular theme in the Finnish newspaper Etelä-Saimaa (of the articles dealing with Russia and the border) was tourism and visas, and the Russian papers advertised Finnish products and travel to Finland.

The study of the third group showed that there are not many jokes that people tell each other about Finns in Russia or Russians in Finland, but that there are a lot of jokes in the internet. There were more jokes about Russians in Finnish than about Finns in the Russian language. The Finnish jokes portrayed Russians as greedy and stupid, and Russia as a retarded country. The Russian jokes, on the other hand, picture Finns as quiet, slow and stupid. What unites the Russians and Finns is alcohol, hunting and fishing. The group concluded that in the jokes the other country is always presented in a negative way and the home country in a positive light.

**Joint seminar**

The joint seminar of the Mental Borders Theme was organized in the cities of Imatra and Svetogorsk. These cities are located next to each other on the Finnish-Russian border. The aim of the seminar was to study the cities as border cities and so called twin cities. The seminar included field work, scientific sessions and round table discussions.

At the beginning of the seminar, the students were divided into three Finnish-Russian groups. These groups carried out field work and practiced visual methods of analyzing city spaces in Svetogorsk and Imatra. The task of the students was to determine visually what indicates in these cities that (1) they are located on the Finnish-Russian border, (2) their neighbor is Finland / Russia and (3) they are a twin city. The students observed and photographed different texts, signs and symbols. They were also allowed to ask local people what the location at the border means for them.

The results of the field work were analyzed in groups and all the groups presented their results to other groups. The field work transpired to be much easier to carry out in Imatra, where there was much more to observe than in Svetogorsk. The students found the field work interesting and for them this was a new way to look at cities.

To complement the field work, the students learned about Svetogorsk and Imatra from specialists. In Svetogorsk, two local history specialists from the city library told the students about the history of the city. In Imatra the Finnish coordinator gave a presentation of how Imatra and Svetogorsk became border cities, and so called twin cities.


**Cartoon and Drama Exercises**

In the Mental Borders Theme the students practiced popularizing their research results in two non-traditional ways. They drew cartoons and compiled plays based on their research projects and the information gained during the theme.

Drawing cartoons turned out to be a creative and funny exercise. The Finnish students referred in their cartoons to the interviews that they had conducted, to the jokes that they had studied and to life in the border area in general.

Many of the interviewees had stated that one should know Russian to be able to communicate with the local people. Therefore, in Maija’s cartoon there is a Finnish person in Russia trying to ask where the bathroom is, not knowing the Russian language. Julianna and Tanja illustrated the different traffic cultures in Finland and Russia. Heli’s cartoon was about cross-border tourism and about the different ways Finnish and Russian people shop. "The Russians come to Finland to buy shopping trolleys full of groceries and stuff, while the Finns buy much less in Russia. In my cartoon a young girl is buying chocolate and sweets in Russia", Heli explained. Salla’s and Marika’s cartoons were based on the jokes that they had studied. Salla’s picture showed how alcohol seems to unite Finns and Russians. In Marika’s cartoon there was a Russian and an Arab. The joke goes like this: “Why do Russians have Ladas and Arabs camels? Because the Arabs were allowed choose first.”

Of the Russian students, Natasha drew a picture of a border crossing point with a duty free shop. In Polina’s cartoon there was an old man lifting the borderline for a mouse. There is a voice from the Russian border station asks the man what has happened. Polina told that her drawing is based on the interviews that she had made. The interviewees had considered the Finnish border guards to be friendlier than the Russian guards. In Angelina’s cartoon the border guard smiles at two Santa Clauses passing the border. In Aleksandra’s drawing Finnish and Russian border guard dogs cooperate across the border. “Pekka, do you feel a smell?” the Russian border guard dog asks the Finnish dog and says that it is worth checking out a man crossing the border.

The drama exercise was realized during the joint seminar. The students created documentary theatre with three actors from a local theatre group. Documentary theatre is a form of theatre that is based on pre-existing documentary material such as newspapers, reports or interviews. In this case, it was based on the research projects that the students had undertaken during the in-depth study period.

The first group, which had been doing interviews, compiled a play of incidents that had occurred for the interviewees on the Finnish-Russian border. The second group, which had studied newspapers, played a scene, where the students were sitting in a cafeteria reading newspapers. The Finnish students read aloud news about Russia and Russians and the Russian students about Finland and the Finns; news that was not at all complementary to the other nation. At the end the Finnish girls found out that the Russians had understood everything that they said. The third group dramatized one of the jokes that they had analyzed in their study.

The documentary theatre was a great success and it was enjoyed just as much by the viewers as by the actors themselves.
Besides the presentations, the students watched a documentary film, the director of which visited the seminar. He talked about the background of the documentary film, which takes place in Svetogorsk and Imatra. The film features a Finnish paper mill worker with a Russian wife, and a Russian girl who was adopted from a children’s home in Svetogorsk to Imatra. After watching the film the students discussed with the director what they thought about the film, and how, in their minds, Imatra and Svetogorsk had changed since the beginning of 2000s when the film was made.

During the scientific sessions the students also completed their research projects concerning interviews with travelers, newspapers and jokes. They discussed in groups their research results, made joint conclusions and finished writing the research reports. Each group prepared a presentation of their study, which they presented for the other groups.

The students also analyzed the so called “mental maps” that they had collected in their schools during the in-depth study period. Mental mapping is a scientific method for studying a person’s perception of a certain area. The maps were collected in order to analyze the perception of young people of the Finnish-Russian border area. The maps were a blank paper with the Finnish-Russian border drawn in the middle of it, and a small picture in the upper left corner to indicate what territory the map represents. The students were asked to draw and write on the paper their perceptions of the Finnish and Russian sides of the border.

A round table discussion was held to analyze the maps and to discuss the results. The Russian students were surprised as to how negative some of the Finnish students

At the end of the seminar, the students were asked, as at the beginning of the project, to draw pictures of scientists or researchers. The project had obviously changed the idea of what scientists are like in the minds of the students. In contrast to the beginning of the project, the drawings turned out to look like self-portraits. The students had realized that anyone with motivation and basic skills can do research, and being a researcher does not mean being a “mad scientist”.

Peer teaching sessions

At the end of the theme, the students gave presentations to their fellow students of the research projects that they had carried out and about the joint seminar. The students also showed their classmates videos of the plays that they had made in the Finnish-Russian groups during the joint seminar.

At the end of the peer teaching sessions the coordinators gave the students Certificates of Achievement for their work in the project. The coordinators thanked the students for their enthusiasm and motivation in the project and wished them good luck for the future, hoping that at least some of them would become scientists.
3. Project Management

In this part of the manual, we introduce you with the planning, implementation and administration of the Cross-Border Citizen Scientists -project. In addition to describing how we managed the project, we share our lessons-learned; what worked well and what could have been improved or done in another way. Projects can be similar, but by their very nature they are always unique. Therefore, how we have organized and managed our project, should be considered as one possible way of implementing a cross-border science education project, a frame that can be modified to fit each individual case and cross-border area separately.

Project planning

We started to plan the Cross-Border Citizen Scientists -project one and a half years before submitting the application to the funding program. As many things in our life, the idea of the project was developed by change, when we, the future project partners, met in the School of Eastern Finland in Lappeenranta (Finland) in another context and shared our latest plans. Partners from the Finnish university had been studying the concept of ‘citizen science’ and planning a research project around the concept, while the Russian school and museum wished to start cooperation with a Finnish school. A project giving science education to school children was created and it seemed like a perfect idea that combined the aspirations of all the partners.

Quite soon after the initial discussion, we met in Russia in order to talk about the project, its contents and partnerships. In the first meeting, the partners from the Finnish university represented the South-East Finland – Russia ENPI CBC Program 2007-2013 and the possibilities that it offered for financing the project. The other partners shared their views of what the project would be like from their perspective and what their role in the project would be. We reached a common vision of the project and agreed that the Finnish university would act as the lead partner in writing the project application and seeking funding for the project.

The first call for applications arose in the South-East Finland – Russia ENPI CBC Program 2007-2013 in a few of weeks after our meeting, but we decided to wait for the next call to have more time to prepare for the project and write the application. The next call took place after a year, during which we met two times and were in contact by e-mail, Skype and telephone. In the end, the long preparation phase turned into our advantage, because it allowed us to plan the project properly. After six months, we received a positive financing decision from the ENPI cross-border cooperation program.
PROJECT PARTNERS AND THEIR ROLES

- Two scientific institutions from Finland and Russia responsible for the science education.
- Two schools from Finland and Russia with students participating in the project.
- A local history museum providing expertise for the studied themes.

Our final project group consisted of two scientific institutions (Lappeenranta University of Technology from Finland and Centre for Independent Social Research from Saint Petersburg, Russia), two schools (Finnish-Russian School of Eastern Finland from Lappeenranta, Finland and Pervomayskoe Comprehensive School from Vyborg Region, Russia) and a local history museum (Historic and Ethnographic Reserve Museum Yalkala from Ilichevo, Russia). The basic idea was that the scientific institutions would take care of the science education of the students, the schools would have their students participating in the project, and the museum would provide expertise for the studied themes.

From an administrative point of view, we built the partnerships of the project according to the rules of the funding program. We agreed that Lappeenranta University of Technology would act as the lead partner, the Centre for Independent Social Research as the project partner, and The Finnish-Russian School of Eastern Finland, Pervomayskoe School and Yalkala museum as associate partners. According to the funding program, the lead partner would be the contracting party and the beneficiary of the project financing. The project partner would have its own budget and the expenses of the associate partners would be covered by the budgets of the lead partner and the project partner.

In the project application we defined the responsibilities of the partners. The lead partner would take care of the overall management of the project, and together with the project partner it would coordinate the project activities. The project partner would coordinate activities on the Russian side. The schools would form the student groups, fit the project into the schools’ timetables, and take care of student safety and support on the joint trips. The schools would also act as primary links between the project and the homes of the students. The museum would provide expertise for the studied themes and assist the Russian coordinator in organizing actions on the Russian side.

If we think about projects in general, project partners are usually searched for among existing partnerships and networks, as was the case in our project. However, it is possible to find partners also with different means. If you are looking for project partners, you should check the internet pages of the funding program or foundation, where you plan to seek funding. They often have lists of possible partners, and lists of completed and running projects, among which you might find your future partners.
The project scheme included four themes with an identical structure.

Each theme consisted of themed lectures by experts, in-depth study periods, joint seminars and peer teaching sessions.

We selected four themes for the project based on what was topical in the Finnish-Russian border area, what kind of expertise the group of scientists and teachers taking part in the preparation of the project had, and the focus areas of the funding program. These themes were the environment, history, business and mental borders. We decided that each theme would have an identical structure and last for a school term. Each theme would start with themed lectures, introducing the students to the theme from a social science perspective. The lectures would be given by Finnish and Russian researchers. After the lectures, an in-depth study period would take place. During the period the students would have lessons and small research projects. Each period would have different outcome, including posters, PowerPoint presentations, videos and research reports, in order for the students to practice different ways of presenting research results. At the end of each theme the students and the project partners would gather together for a joint seminar in either Finland or Russia, and after the seminar the students would share their knowledge in peer teaching sessions at their schools.

What took us some time in the beginning was to define the different roles that scientists would have in the project. On the one hand, we needed scientists, who would give the students basic knowledge about the studied subject and have them do small research projects. On the other hand, we wanted to have sociologists, historians, geographers, and anthropologists to give the students a different perspective to the studied subject. This perspective would be related to the cross-border aspect of the project. For example, in the environmental theme we wanted the students to learn about nature and the environment in the Finnish-Russian border area and to study the human impact on the environment. However, we also wanted the students to understand how borders shape our understanding of the world and how we should be able to see beyond manmade borders with regards to taking care of nature and the environment. We decided to have two “types” of scientists working with the students; so called ‘specialists’ who would work with the students for a longer period of time (in-depth study period) and so called ‘theme experts’, who would give lectures to the students and their classmates about the theme from a social science and cross-border perspective.
The project application included a narrative and a financial part.

The application was detailed, which made the implementation of the project easy.

The application for the South-East Finland – Russia ENPI CBC 2007-2013-program was extremely detailed. Therefore, we had to plan all the actions of the project carefully when writing the application. This was time consuming, but at the same time it made the implementation of the project easy, because everything had been planned and agreed upon in advance. We will not go through the whole application here, because each financing body has their own application forms and procedures, but we mention a couple of key issues from the application that might help you with framing your project goals and justifications.

In the application, we formulated the overall objective of the project as follows: “To contribute to active cross-border citizenship and people-to-people links in the cross-border area of South-East Finland and North-West Russia.” The specific objective of the project was “science education of young people in the Finnish-Russian border area and engagement of young people in cross-border cooperation and joint problem-solving”.

The target groups of our project were comprehensive school students and teachers, and scientists. As final beneficiaries we named citizens and actors of the border area, educational institutions and scientific community, and mentioned that for the beneficiaries the project would create a new collaboration model for shared problem solving on EU internal and external borders.

The main activities of the project we described as follows: “The Cross-Border Citizen Scientists project collects a Finnish-Russian group of students (comprehensive school level) from one Finnish school and one Russian school to be trained into “citizen scientists”, experts of their own cross-border area. The participants of the group, six Finnish and six Russian students, will explore themes that have high relevance to their own cross-border surroundings (environment, joint history, business and mental borders) with the help of scientific methods of collecting, analyzing and disseminating information. The participants will leave the project with first-hand experiences and knowledge that they will pass on to their schools and local networks.”

We justified the project by stating that the students participating in the project would have a valuable opportunity to work together with students from the neighboring country and find common ways to solve shared problems. Through creating shared spaces and understanding, the Finnish and Russian students can later contribute to lowering mental barriers and prejudices in the border area, and grow up as active citizens who understand how to build sustainable cross-border spaces. We also mentioned that the project would advance the engagement of public in science and the popularization of science.
In addition to the narrative part, the project application included a financial part. The total budget of our project was 256 000 euros. The South-East Finland – Russia ENPI CBC Program covered 80 % of the total direct eligible costs of the project, and the remaining 20 % was covered by the lead partner and the project partner.

In the project budget, we allocated money for (1) human resources, (2) travelling, (3) equipment and supplies, (4) outsourcing and services, and (5) administrative costs. Human resources included salaries for the coordinators, project secretaries, lecturers, and specialists. The coordinators had full-time and the project secretaries part-time contracts. The lecturers and specialists were allocated hourly fees. Travel expenses covered international and domestic travels of the project staff and the lecturers and specialists. Under the heading of equipment and supplies, we allocated money for purchasing lap tops for the Finnish students (Russian students had computers at the school that they could use for the purposes of the project.), and a portable water testing laboratory kit for carrying out field work in the environmental theme in Russia. Besides these larger purchases, we reserved money for buying smaller equipment such as pocket-sized cameras, recorders and basic office supplies.

Outsourcing costs included fees for translators, costs of seminars and printing costs. The translator fees included both written translations of different project materials and interpretation at the themed lectures and joint seminars. The costs of seminars covered transport, accommodation and meals during the joint meetings and seminars. Printing costs included printing of the project brochure and manual. In the outsourcing costs, we also allocated money for project auditing in Finland and Russia. This was required by the funding program. The auditing costs transpired to be much higher than we had planned, and eventually we had to omit one of the interim reports in order for the money allocated for the audits to be sufficient. According to the rules of the financing program the administrative costs of the project could be a maximum 7 % of the total direct eligible costs. At the lead partner university and the partner institute the actual administrative costs were higher, and this increased the actual amount of co-financing by the partners.
Project implementation

We submitted our project application in April 2011, and in October the same year we received a positive financing decision. After this Lappeenranta University of Technology as the lead partner negotiated contract details with the Joint Managing Authority (Contracting Authority) of the South-East Finland-Russia ENPI CBC 2007-2013 Program. The financing agreement (Grant Contract) was signed in January 2012. In February 2012, we received the first pre-payment for the realization of the project.

Before the signing of the financing agreement, the project partners signed a partnership agreement with the lead partner about the realization of the project. By signing this agreement the partners were then committed to the same rules and obligations as the lead partner. In the partnership agreement, the partners also agreed on the ownership of the rights to the project materials and results. We agreed that the lead partner would have the ownership of the project’s results, reports and other documents, but that the partners would have a non-exclusive, royalty-free and perpetual right to use the results, reports, and other documents produced in the project.

As our example shows, application and contracting procedures of projects can be slow. Therefore, it is advisable to plan the project so that there is enough of time to take care of such procedures before the project actions begin. It is also good to preserve time for practical arrangements in the beginning of the project. In our case, it took a considerable amount of time to transfer the first pre-payment to the Russian partner. The lead partner received the pre-payment in February, but due to problems with the bank the pre-payment was transferred to Russia only in April. This meant that the Russian partner was not able to purchase the needed equipment for the environmental theme before the school term was over, and thus the field work intended for May took place during the summer holidays.

PROJECT TEAM

- A project coordinator worked both in Finland and Russia. The Finnish coordinator acted as the project manager.
- A part-time secretary and project assistants worked both in Finland and Russia.
- The project had a steering group with a representative from each partner organization.

Our project team included two project coordinators, two part-time project secretaries and project assistants. We had one coordinator in Finland and one in Russia. The Finnish coordinator acted as the project manager. The coordinators were responsible for planning and arranging the project actions, making practical arrangements such as obtaining visas for the participants, and taking care of project reporting and publicity. In addition to the coordinators, we had a part-time project
secretary both in Finland and Russia, who took care of financial procedures, reporting and bookkeeping. The two school teachers assisted the coordinators in arranging project activities, and, in addition, we had a project assistant working for the project manager for seven months.

We discussed and evaluated the progress of the project in steering group meetings. Each partner organization had a representative in the steering group. We had no external members in the group, because the aim of the group was for the project members to share their experiences with each other and to discuss the project internally. We held the steering group meetings during joint seminars to avoid extra travelling. This, however, was not always a good solution and we would recommend organizing the steering group meetings as separate events. We tried to fit the meetings into the program of the joint seminars, but there was too little time for discussion and people were not able concentrate on the meeting. If it is not possible to organize separate steering group meetings, it is better to have a sufficiently ample time-slot in the seminar program for the meetings.

**SELECTION OF THE STUDENTS**

- Six students from Finland and Russia were selected for the project based on motivation to take part in the project.
- The same students took part in all the four themes of the project.

The selection of the twelve students taking part in the project took different forms in Finland and Russia. In Finland, the students were selected based on so called ‘motivation letters’. The teacher in charge of the project asked the pupils of the 7th class to write why they would like to take part in the project and would they be ready to commit themselves to the project for two years. The motivation letters turned out to be a good way to determine which students would be the most motivated. The students wrote in their letters, among other things, that in the project they would have a chance to learn new things, do research, meet new people, work with different experts, exercise their language skills, travel and think of their future profession. The teacher in charge of the project made the selection of the students based on the letters. Grades did not play a role in the selection of the students, even if all the chosen students were good students. It was more important that the students were motivated and had the perseverance to stay in the project for two years.

In Russia, the teacher in charge of the project chose the students to the project. She runs extra-curricular courses in museum work and local history and therefore had extensive knowledge about the students that took part in her courses. We decided that she would choose the most motivated and capable students for the project. The fact that the students would be able to acquire a foreign passport and a visa also played a part in the selection of the students.

Finally, six students from Finland and six students from Russia were selected for the project. At the time the students were in year 7 (12-13 years old) and had two years left of comprehensive school. As the project lasted for four school terms, the students were in year 9 (14-15 years old) when the
Compulsory education ends after year 9 both in Finland and Russia. After that, in Finland, the students choose whether they go to high school (which lasts for three years), or to vocational school. In Russia, the students choose whether they continue to year 10 and 11 in school or go to vocational school. From this perspective, the timing of the project was good, because it gave the students opportunities to think about their future education and career possibilities.

During the project we discussed whether it would be better to have different students in each theme. This is a choice to consider when planning a project. Having different students in each theme would mean that students would not have to commit themselves to the project for such a long time. It would also make it possible to choose for each theme the most motivated students. After all, for some natural science is interesting, while others take pleasure in the study of history. Having more students involved in the project would also increase the effectiveness of the project from the perspective of funding programs.

This is a comment that we received from the financing body in the agreement phase of the project. We had decided to have twelve students in the project to keep the student groups small and easily managed, and to keep the project budget in control. Having six students in each country allowed us to divide the students into couples or groups of three, or mixed groups of four or six. Despite the request from the funding program, we did not increase the amount of students but kept to the original plan. We had calculated the budget of the project for twelve students, and in the agreement phase it was no longer possible to increase the budget. We also wanted to have a small amount of students in order to keep the interaction between the students and scientists individual. Instead of having more students in the project, we adjusted the themed lectures by experts so that they would be given to all the students of the class.

One more reason why we wanted the same students to attend all the themes of the project, was that we wanted the pupils to study their own cross-border area from a variety of perspectives. Having the same students in all the themes supported this thinking. It also allowed long-term development of the students’ personal skills, and enabled the teachers and coordinators to follow how the project affected the students. As a result, the teachers observed that besides obtaining more information about their cross-border area and about science and research, the students improved their public performance skills, communication skills (including communication in a foreign language), sense of responsibility, analytical skills (thinking and making conclusions) and cooperation skills. The project did not directly influence the achievements of the students in school (such as exam marks), but on lessons the students were more active and skillful debaters than many of their peers.

Gender balance is also something to consider when planning a cross-border science education project. Three of the Russian students that we had in the project group were boys, but all the six Finnish students were girls. Having both genders in both groups would probably have made it easier for the students to bond with each other. As it was, the Finnish and Russian girls found it easier to interact with each other than the Russian boys and the Finnish girls. One of the Finnish specialists also pointed out that having boys in the Finnish group would have brought different perspectives to the studied subjects, for example when the students were making interviews with the evacuees of the Second World War.
In Finland the project was included in the curriculum and organized as an optional course.

In Russia the project was an extracurricular activity.

One teacher was in charge of the project in both the Finnish and Russian school.

The themed lectures by experts were attended by all the students of the class and the in-depth study periods only with the twelve students taking part in the project.

The project was organized in the Finnish and Russian schools in a different way. In Finland, the project was included in the curriculum as an optional course. When, according to the school timetable, students were attending optional courses, the students of the project had an in-depth study period. The project corresponded to two optional courses, and unlike normal optional courses that last for one study module, it lasted for four school terms. Students normally take one to two optional courses each school year. Taking part in the project thus did not hinder the students from attending other optional courses. On some occasions the lessons of the in-depth study period coincided with other school lessons, due to travelling and specialists’ timetables. On these occasions the students were obliged to ask for the home assignments and to take care that they did the assignments that the other students had done during the lessons.

The themed lectures were held during normal school days in the place of other subjects. These lectures were attended by the students participating in the project and their classmates (approximately 30 students).

In Russia, it was not possible to include the project into the school curriculum. Instead, the project was organized as an extracurricular supplementary course. The lessons of the in-depth study period were held on Saturdays, and, as in Finland, the themed lectures were held during normal school days in the place of other school subjects. They were attended by the students participating in the project, their classmates (approximately 30 students) and one additional class (approximately 30 students).

Both in Finland and Russia the directors of the schools were involved in the planning of the project. They gave their blessing for the project and signed the partnership agreement. During the project the school directors and teachers had internal meetings about the progress of the project. The other teachers of the schools were notified about the project before the project actions started. This was important so that they would know if the students, for example, needed to miss lessons because of the project.

At the beginning of the project the teachers in charge of the project also had to ask for permissions from the parents of the students. As the project included travelling, we needed permissions from the parents to apply for visas and to travel with the students without the parents. We also needed permissions from the parents to photograph the students and to put photographs of the students in the project’s internet pages and printed materials.
Based on our experience it is best if the teacher in charge of the project knows the students in advance. This makes it easier for the students to approach the teacher about questions related to the project. The teacher is also more likely to know how the students react in certain situations, what kind of assignments they are capable of fulfilling and how to best motivate the students, etc.

**KICK-OFF MEETINGS**

- Joint kick-off meeting for the project partners was organized in Russia.
- Joint kick-off meeting for the students was organized in Finland.

The launching activities for the project began with a coordinator meeting. The Finnish and Russian coordinators met in order to discuss the first project actions and to plan the kick-off meetings. First, the coordinators organized a one-day kick-off meeting for the project partners. The meeting took place in Saint-Petersburg. In the meeting, the project coordinators related details of the planned project actions and about administrative duties concerning the partners. The second part of the meeting was dedicated to the planning of the first, second, and third themes of the project. Some of the specialists and experts took part in the meeting and planning of the themes.

After the kick-off meeting the coordinators visited the schools and launched the project with the teachers and students. They talked about the project and gave the students project files with notebooks, pencils, memory sticks and project brochures. The coordinators also gave the students their first assignments. They were to write short presentations of themselves, which the coordinators would put on the project’s web pages. They were also to write learning diaries after each project event. The coordinators gave the students instructions on how to fill in the diaries. As well as describing the project events from their perspective, the students were asked to write about their impressions, thoughts, and feelings.

Finally, a kick-off meeting was organized for the students. It took place in Lappeenranta, Finland. This was the first time that the Finnish and Russian students met each other. The first day was spent at Lappeenranta University of Technology. To begin with, the students and project partners introduced themselves with the help of a picture game. After the introductions the students learned about the university and had a tour on its premises. At the end of the first day the group visited the university’s chemistry department, where they were told about chemistry and had a chance to make their own chemical experiments in the form of bouncy balls. The second day of the kick-off meeting took place at the School of Eastern Finland. The Finnish students organized for the Russian students a tour around the school and the Russian students attended an art lesson with the Finnish students. Then the Russian students performed Russian folk dances for the Finnish students and related descriptions of their home village. The kick-off meeting ended with a visit to the local museum.

As a part of the kick-off activities, it would be good to give the students general lessons about science and research. These lessons would include information about the history of science,
different scientific disciplines, research methodologies and methods, and basic theories and concepts (what theories and concepts are and how they are used). During the lessons the students could discuss what it would be like to be a scientist and how one can become a scientist. Another important topic of discussion would be research ethics and social responsibility in research practice.

**ORGANIZATION OF THEMED LECTURES BY EXPERTS AND IN-DEPTH STUDY PERIODS**

- Basic idea of the themed lectures by experts and in-depth study periods came from the project application.
- Experts on each theme gave their lectures both in Finland and Russia.
- In-depth study periods were held separately in Finland and Russia and they included approximately ten hours of lessons, field work, and research.

We had a preliminary plan for what kind of lectures, lessons, and research tasks each theme would include already at the application phase of the project. More detailed plans we made separately for each theme in thematic meetings one to four months before the beginning of each theme. In these meetings, we agreed on who to invite as the theme experts and specialists, if we did not already have scientists for these tasks. We also discussed what we wanted the lecturers to focus on in their presentations, and what kind of lessons and research assignments the in-depth study periods would include.

We chose the experts for the themed lectures based on their field of study and focus area. Most of the lecturers came from the lead partner university and the partner institute. This was a very practical solution, because we knew well the research areas of these scientists, and they knew about the project and its aims. Other lecturers we invited from our partner universities.

We asked the lecturers to relate their subjects to the Finnish-Russian border area (most of the lecturers were familiar with the area through their research), and to make the lectures interactive and suitable for comprehensive school students. Some of the lecturers succeeded in this better than others. The students had the hardest time to concentrate on the traditional lectures, in which the lecturers did most of the talking and the students listened. The most successful lectures were interactive. During these lectures the experts asked questions, gave small assignments, and attracted the students by role plays and discussions.

We decided to have one Finnish and one Russian lecturer in each theme, and to have them lecture both in the Finnish and Russian school. On the one hand, we wanted to give the students different perspectives to the studied subject and, on the other hand, we wanted the students to meet lecturers from different cultures. It was exciting for the students to have people from another country come to the school and give lectures in a foreign language. The lecturers spoke in their
mother language and we had interpreters to translate the lectures into the mother tongue of the students.

The in-depth study periods included ten hours of lessons, field work, and research. In the environmental theme we had two specialists in Russia and therefore the in-depth study period was more extensive, twenty hours in total. The scientists had to plan the in-depth study periods so that the students would in a short period of time get a general idea of the studied subject and have time to carry out a small study. It was challenging for the scientists to keep to the ten hour limit. This was, however, necessary, since it would not have been possible for the schools to organize more time for the project, and it would have been challenging for the students to have more lessons while taking care of their normal schoolwork.

Based on our experience, it is a good idea to have lessons outside the school to motivate the students and give them experiences that differ from normal school days. In our case, in Russia, the in-depth study periods took place in the school, but in all the themes the students made field trips and visited places outside the school. Pervomayskoe School is located in a small village and it was not possible to organize lessons, for example, in a university. The students enjoyed the field trips very much.

In Finland, three out of four of the in-depth study periods took place outside the school. During two themes the students studied at the university, which is located 7 kilometers from the school, and during one theme at the local museum, which is located 3 kilometers from the school. The students travelled to these places either by bus or bike. In their feedback, the students related that they preferred to have the lessons outside their own school. Studying at the university had been especially interesting. They also felt special amongst their classmates for being able to leave the school when all the other students had normal school days.

The scientists gave positive feedback as regards working with the students. Almost all of them noted that it was an educative process for them to adapt their information and materials for comprehensive school students. Participating in the project was for them a lesson in popularizing science. For some of the scientists the task was easier than for others as they had some experience of teaching in a school and they had children of the same age as the students in the project. Thus, when choosing the scientists one should pay attention to both their scientific qualification and their ability to work with children. It would also be good for the scientists and teachers to discuss the contents of the lectures and lessons beforehand, because teachers know what kind of knowledge the students possess and, for example, how deeply any theoretical information the students will be able to absorb.

With regard to the planning of the in-depth study periods, some of the scientists wished that they had been given more detailed objectives for their work. As it was, we gave the specialists a fairly free hand to develop their courses. In the beginning of the project especially some of the specialists felt that they did not understand how their part in the project was connected with the overall aims of the project or with the cross-border aspect. What we realized in the course of the project was that we need to give the specialists better guidelines as to how to build their courses to better suit our objectives, and to better connect the in-depth study periods with what the students have learned in the themed lectures by experts.
We recommend other project actors ask their scientists to start the in-depth study period with a lesson, which gives the students basic information about the studied subject from the perspective of the border area. In the environmental theme, this could be a lesson about nature and the environment, and the environmental state and protection in the border area, including, among other things, information about transboundary water bodies, their state and conservation. In the historical theme, the lesson could be a brief overview of historical events in the border area. In the business theme, it could be information about how business and trade has evolved in the border area, what do the current day markets look like and what kind of cross-border trade there exists, both official and unofficial. In the mental borders theme, the lesson could be more research-based, going over studies that have been conducted about historical relationships and present neighborhood relationships between in the border area, or cross-border cooperation and attitudes among the inhabitants of the border area. Having this kind of basic information enables the students to relate their studies and research results to their cross-border area.

Some of the scientists wished that the in-depth study periods in Finland and Russia could have been identical. This would have increased interaction between the Finnish and Russian specialists, and allowed the students to discuss their research assignments and results with each other. In our project, the in-depth study period was identical only in the last theme. Our experiences from this theme were very positive, even if the students were not able to interact with each other as often as we planned. Having identical in-depth study periods in both countries requires more planning and coordination than having separate courses in each country. Therefore, more time should be reserved for preparation of the in-depth study periods. The specialists and coordinators should meet once or twice before and interact with each other regularly during the study period. It would help a great deal, if the specialists have a common language. This way they could discuss the plans and progress of the studies without translators.

Some of our specialists pondered whether they could give homework for the students. In principle, the Cross-Border Citizen Scientists -project was as any other school course for the students and the specialists had the right to give the students home assignments. In practice, however, the students often neglected or forgot to do their homework, and some of the specialists decided that it is better just to work with the students during the lessons. One reason for the rather relaxed attitude of the students towards homework could have been the fact that they did not receive marks for the project. This is an issue that can be discussed when planning a similar project. We did not want to evaluate the work of the students for several reasons. We wanted to make a difference between the project and normal school courses, and did not want the students to start competing with each other, but to work as a team. Even if the students were not that good with homework, they were always motivated and worked well in the lessons.

It is advisable to plan the lectures and lessons so that they start quite soon after the school term has started and end sometime before the end of term. This way the most busy school weeks can be avoided and the students are more motivated and able to absorb new information. As to the in-depth study periods, we noticed that having regular weekly or twice monthly meetings (on the same day at the same time) was the best arrangement for the students. All in all, it is good to agree on the dates of lectures and lessons well in advance, and to start practical arrangements as soon as possible. We had a preliminary weekly plan for each theme, which we ended up modifying several times. Many of the lecturers had busy schedules and it took some time to find a suitable lecture day
for both the scientist and the school. With a few of the lecturers we had to wait until they had renewed their passports and obtained new visas, before we could arrange their lectures in the school across the border.

**Organization of the Joint Seminars**

- In total four joint seminars were organized in Finland and Russia.
- The joint seminars included a scientific program, different educative activities, visits to companies and institutions, and a social program.
- Practical arrangements included applying for visas, booking meeting rooms, accommodation, meals and transport, and contacting places to visit.

The joint seminars at the end of each theme were probably the favorite part of the project for the students, teachers and coordinators. The seminars were a chance for us to meet each other and to share our knowledge and experiences, and to visit the neighboring border area. Our original plan was to have every other joint seminar in Finland and every other in Russia. However, we ended up having the two first seminars in Russia, the third seminar in Finland and the fourth seminar partly in Russia and Finland.

Each seminar had a tight schedule with a scientific program, different educative activities, visits to companies and institutions, and a social program. We began to organize the joint seminars already in the middle of the in-depth study period by discussing the contents of the seminar and making a draft of the program. When the plan was ready, we began to take care of the practical arrangements.

First of all, we applied for visas for the students. As our students were minors, several additional documents had to be attached to visa applications and several weeks had to be reserved for receiving the visas. Next, we booked meeting rooms, accommodation, meals and transport, and started contacting places that we wanted to visit. We selected the places so that they would support the knowledge that the students had gained during the lectures and in-depth study periods. Most of the companies and institutions that we contacted were pleased to have us as guests and talk about their operations. Some companies, however, had strict visiting policies and some were hard to reach. Therefore it was necessary to start the seminar arrangements well in advance, to have time to modify the program and make new plans if the first ones failed.

One should be aware that there exist different laws on travelling with under aged children and groups of school children in different countries. According to the Russian law, the school children have to be back at home before a certain time in the evening (23 pm) or otherwise the teacher has to accommodate the children in a hotel or hostel for the night. The number of school children that can travel with one adult can also differ, so there might be a need to take other teachers or parents
on the trip as guardians. The Russian children needed separate, officially approved permits, to travel out of the country without their parents. The teacher in charge of the project took care of obtaining these permits for the children. For the Finnish students it was enough to have passports and visas.

**Organization of the Peer Teaching Sessions**

- Most of the peer teaching sessions took place in the schools.
- The teacher in charge of the project organized a lesson when the peer teaching session took place and asked the students to prepare presentations.

The peer teaching sessions were held separately in Finland and Russia at the end of each school term. The teacher and coordinator agreed on a date when the session would take place. The teacher arranged one or two lessons free from other school subjects, and asked the students to prepare presentations about their studies in the project and about the joint seminar. At the beginning of the session the teacher and coordinator told the class what had taken place in the project during the school term, and after that the students gave their presentations.

At the beginning of the project presenting was quite challenging for the students, but by the last theme the students had improved their presentation skills a great deal. It can still be discussed whether giving presentations is the best way to diffuse information to school children. If the students are shy when performing and the class is noisy or restless, it can be that not much knowledge is passed on to other students. In the History Theme the students made posters, which we hung on the school walls after the peer teaching session. Any pupil could stop to study the posters when they passed by and they could come back later if they found the posters interesting. In the peer teaching session on the Business Theme the students made an exercise for their classmates that they had done in the joint seminar about running a business in the border area. These were good ways of complementing the presentations and made the peer teaching more interesting and effective.
Project administration

Project administration includes several aspects, but we have selected the most important from our point of view for closer analysis. In the following we discuss communication, reporting and evaluation, and project publicity. In our project, the lead partner acted as the project manager and carried the main responsibility for project administration, but all the partners had their own roles and responsibilities.

In cross-border projects with several partners, people with different backgrounds, cultures and languages meet, and it is natural that there will be many discussions and disagreements over how the project should be run. Therefore, it is important that the project partners communicate with each other and have a common language for doing this. We found it helpful to collect written feedback from the project partners. It enabled the partners to express their points of view, and the lead partner to compile the project reports.

COMMUNICATION BETWEEN THE PARTNERS

- The most important means of communication were by e-mail, Skype and telephone.
- The lead partner was responsible for informing the project partners about upcoming events, reporting procedures etc.
- Physical distances and means of communication should be taken into consideration when planning a cross-border project.

Communication can be challenging in a cross-border project, where project partners are located far away from each other. Remote collaboration requires effective coordination and up-to-date informing. We did not have many opportunities for personal meetings, and therefore we mostly communicated by e-mail, Skype and telephone. The fact that we had a common language for communication (Russian) made this easier. As mentioned above, it would be good for the project partners to meet more often, at least before and after each theme, to plan the upcoming events and to discuss the progress of the project. The project coordinators, on the other hand, could have a regular once a week Skype session, on a particular day.

In our project all the partners communicated with each other, but most of the informing was done by the lead partner. The lead partner informed the project partners about upcoming events, reporting procedures etc. The lead partner also shared important project documents, such as the funding and partner agreements, in Google Docs -service, where the documents were available for the partners throughout the project.

When planning a cross-border science education project, distances and means of communication should be taken into consideration. In our project the Finnish university and the Finnish school were
located close to each other in the same city, which made it easy for the coordinator and the students to see each other and to communicate face-to-face when needed. In Russia, the distance between the school and the scientific institute where the coordinator worked, was over 60 kilometers (minimum one hour by minibus). It was much more complicated for the coordinator to see the students and to make practical arrangements, and more assistance was needed from the teacher in charge of the project. Travelling between Pervomayskoe and Lappeenranta was also somewhat complicated, because there were no direct public transport connections. We used the university’s car or a charter bus to travel the 140 kilometers distance. With the border crossing it took us approximately three hours one way. Physical distance or inconvenient connections are, however, not an obstacle for cooperation. On the contrary, they can be an attraction for some people. In our project, many of the expert lecturers had never been to a small Russian village, and for them visiting Pervomayskoe was a unique experience.

COMMUNICATION BETWEEN THE STUDENTS

- The students lacked a common language for communication.
- Several different methods were used to further interaction between the students, including translators, mixed groups, and special assignments.

One of the main difficulties in a cross-border project is the lack of a common language for the students. In our project, both the Finnish and Russian students had studied English for several years. However, they had little or no experience of speaking English and they were often too shy to use it. The Finnish students also knew the Russian language, but they did not have enough linguistic competence in it. The Russian students had not studied the Finnish language at all.

Since a common language for the students was missing, we used the help of professional translators. As often as possible, however, we tried to encourage communication and interaction between the students themselves without intermediaries and to help them overcome language barriers and shyness. This proved to be more challenging than we expected and we were forced to use several methods to intensify communication and interaction between the students.

First, we tried to increase the students’ interest in the Finnish and Russian languages. During one of the first meetings we asked the students to make a Finnish-Russian phrasebook for the project. The students listed the words and phrases that in their opinion were the most important for communicating in the project. To motivate the students further, it would have been possible to arrange a competition as to who knew the most words and phrases in the language of the neighboring country or who had learned the most phrases from the composed phrasebook.

Second, we created mixed Finnish-Russian groups, in which the students performed joint assignments and interacted with each other in the learning processes. For example, in the Mental Borders theme the students conducted joint research. They developed together the methodology
for the study, discussed the results and prepared the research reports. Initially the students tried to communicate in English, but later they were helped by adults (the coordinators and teachers). Other examples of where we used joint Finnish-Russian teams were the city orienteering and the development of the new museum concepts in Vyborg.

In the course of the project, we intentionally created situations where the Finnish and Russian students were left alone without the possibility of getting help from adults in communicating in a foreign language. In these situations the students had to interact by themselves. They tried to understand each other with the help of the linguistic resources that they had, as well as with the means of nonverbal communication, such as sign language, drawings etc. An example of such a situation is when the students visited each other’s schools for the first time. We asked them to give a tour for the visiting students; to show where everything is located and to explain how the school functions.

We also discovered that a good way to help the students overcome shyness and to add body language in their communication is to attract them to joint theatrical performances. We invited professional actors to work with the students. They helped the students to make small plays in mixed groups based on the studies that the students had carried out in the Mental Borders Theme. It was very inspiring for the students to make the theatrical sketches. They enjoyed preparing the performances and performing for the public. As a consequence, they became more liberated and more communicative with each other.

It would be desirable for students in a cross-border educational project to have more opportunities to meet and interact. In our project, the students met each other only during the kick-off seminar and the three joint seminars. It would have required more financial resources and flexibility from the schools to arrange more meetings for the students. If meetings are easily arranged, it would be of benefit for the students to meet each other at least in the beginning, middle and end of each theme, especially if the students have joint research projects.

On the other hand, it is possible to use the internet to support the interaction between the students. The internet gives opportunities also for informal communication between the students, without the control and presence of adults. At the beginning of the project, the coordinators could propose for the students to become acquainted with each other over the internet; to tell about themselves, their families and hobbies to each other. When the students meet each other for the first time, their task would be, instead of introducing themselves, to introduce the student that they have been writing with over the internet. The coordinators could also give the students joint assignments that they have to solve in the internet, or themes for discussion to have on online discussion sites. In our project, we did not utilise the internet for these purposes, but for other projects it offers great opportunities for mutual communication and learning.
The project partners had Russian as a common language. Translators were needed for the themed lectures by experts and joint seminars. It is very important to have good translators in cross-border projects.

The role of translators in a cross-border educational project is extremely important. If the project staff, teachers, scientists or students do not have a common language, or if their language skills are insufficient, it will be very hard to carry out a project without translators. In our case the project partners had Russian as a common language. The Finnish coordinator and teacher both speak fluent Russian, and, for example, the steering group meetings could be held in Russian.

We needed translators for the themed lectures and the joint seminars. In Russia we used researchers from the project partner institute as translators. They translated from Russian to English and vice versa. We chose to use the researchers instead of official translators, because we knew that their English language skills are very good and that they know the required vocabulary and terminology. One of the researchers translated almost all the themed lectures in the Russian school. The Finnish theme experts were asked to give their lectures in English, and it was agreed that they would send their materials to the researcher before the lecture took place. This way the researcher had time to prepare the translations. This arrangement worked very well and the researcher did a very good job of translating the lectures.

In Finland, we had a professional translator with Russian and Finnish as working languages. Russian was her mother language. She translated all the lectures in Finland and all the joint seminars in Finland and Russia, except for the first one. In the first joint seminar, we had another professional translator, whose working languages were Russian and English. Even if the Finnish students knew English quite well, we noticed quite soon that it was hard for them to understand the translations and try to express themselves in English. Therefore we decided that for the next joint seminar we would have a translator, whose working languages are Russian and Finnish. This way all the students could use their mother language and obtain the information in their mother language, and we would be assured that the students do not miss any information because of language problems.

It is thus very important to have good translators in cross-border projects. Our example shows that translators should have such a language combination that students from both countries can use their mother language. Translators should also know the specific vocabulary and terminology used in the project. It is beneficial if the translators receive lecture materials beforehand, so that they have time to prepare for the lectures. The coordinators should also ask the lecturers to leave time for the translation in their presentations. In an ideal situation, in lectures the translator translates from a foreign language to their mother tongue.
Reporting and Collecting Feedback

Seven reports were sent to the funding program during the implementation of the project.

The lead partner collected feedback from the partners for the reports and for an internal evaluation of the project.

Feedback was collected from the students with questionnaires and learning diaries.

In our project, the lead partner was responsible for communication between the Joint Monitoring Authority of the South-East Finland – Russia ENPI CBC Program and the project. It was the lead partner’s responsibility to report to the Joint Monitoring Authority concerning project actions and expenditure.

In the ENPI Program there were two types of reports – interim (final) and implementation reports. The interim report consisted of a narrative and financial part and it assessed project activities, outcomes, produced materials, cooperation and visibility. The implementation report was a new type of a report that assessed the relevance of the project from the point of view of the funding program. We had to evaluate, among other things, whether the actions of our project were still relevant, how well our project activities had been implemented, what was the probability that we will realize our action plan and what the direct impacts of the project were on the overall objectives’ level. We submitted two interim and two implementation reports during the project. At the end of the project we submitted a final report and the last implementation report. The interim reports and the final report had to be audited by a verified auditor.

The reporting in the South-East Finland – Russia ENPI CBC Program was extensive and this might not be the case in other financing programs. It is good, however, to plan the reporting activities and schedule well in advance, because reporting can be time-consuming. In our case, the Russian partner had to prepare a report and have an audit first, and only after that could the lead partner report on the whole project. The whole procedure took about two months.

The lead partner collected feedback from the partners at the end of each theme in order to include their viewpoints in the reports. The feedback was collected using questionnaires, in which the project partners wrote about their part in the project and gave suggestions for how the following themes should be implemented. The questionnaires were thus used both for external and internal evaluation of the project. We recommend collecting written feedback from partners, because the feedback that we received included some criticism and many suggestions that did not come up in the oral or e-mail communication.

We also collected feedback from the students during each joint seminar. We asked the students how they had experienced the previous theme, what their best and worst experiences were, whether they had learned new things, and had the project affected them personally (in terms of acquiring new skills etc.). Besides collecting feedback with questionnaires, we asked the students to fill in learning diaries after each project event. We asked the students to write about the event and about the impressions, thoughts, and feelings that the event evoked in them. The questionnaires were a
A better way of receiving information from the students than the diaries. First of all, there was a special time slot in the seminar program for filling in the questionnaires. The students sat and wrote down their thoughts. The diaries the students were supposed to fill in during their free-time, but they did not seem to find the time for this. Second, the diary format was demanding for the students. The diary entries that we received included descriptions of events, but no personal reflections on the events. As a result, we received only a few diary entries from some of the students.

PROJECT PUBLICITY

- A project brochure was printed in the beginning of the project.
- The project had web pages and Facebook Pages. These were regularly updated with descriptions and photographs of project actions.
- The partners wrote about the project in newspapers and invited journalists to the joint seminars.

Even though sharing information about the project was an obligation as regards the financing of the program, it was also one of our priorities in the project. We wanted the project and its actions to be visible to people so that we could inspire other similar projects.

In the beginning of the project we printed a brochure, which the project partners distributed in their networks. Later we updated the brochure with pictures from the project and ordered another print run.

We also had articles written about the project in local and regional media. A number of the articles were written by the project team members and a number were written and published by journalists. Our project interested the media especially in Russia. The Russian partners were active in attracting the media and we had journalists writing about us and producing a TV-coverage of us a few times. In Finland it was much harder to attract the media. In the end only the initial bulletin and two articles written by team members were published in the Finnish newspapers. In addition to this the Finnish students appeared once in a regional TV news program in a story about European cooperation programs.

The main channel that we used for project publicity was the internet. We produced web pages for the project on the domain of the lead partner. On the web pages we regularly posted updates about the project actions. These were short texts and photographs, which we organized on the pages thematically. On the web pages we also had a description of the project, information about the project group and scientists who worked in the project, our contact information, research presentations of the students and scientists, and news. We also had Facebook-pages, where we
posted photographs of the latest events as quickly as possible. It was the project manager’s responsibility to update the web pages and the Facebook-pages.

We also took part in publicity work organized by the funding program. Our project was selected as one of the three Flagship projects of the South-East Finland – Russia ENPI CBC Program, and we took part in the European Cooperation Day activities organized by the Joint Monitoring Authority of the Program. The project manager presented the project on a media cruise and in a publicity event that was organized at a local border crossing point. The publication of this manual and the organizing of the final seminars in Finland and Russia were the concluding publicity measures of the project.
4. Discussion

This manual completes the Cross-Border Citizen Scientists -project, which we worked on for almost two and a half years. During that time science education has been increasingly discussed by the European Union and national governments, including Finland and Russia. Teaching children and young people basic scientific skills and attracting them to work in the field of science are seen as ways of supporting the growth of the information society and, eventually, economic competitiveness.

For young people, science education projects can be eye-opening and provide possibilities for gaining new skills, learning things outside the school curriculum, obtaining information about working life, and learning about science. The students that participated in the Cross-Border Citizen Scientists -project noted that they not only gained new information, but that the project affected their personal growth; they became more certain about what they could do and what they believed in.

When approached from a cross-border perspective, science education offers new ways of understanding cross-border areas as common spaces, where a cross-border dialogue is a necessity for creating safe and attractive living spaces. The students that participated in our project related that the project influenced their mental images of the neighboring country and its inhabitants. Negative images were weakened and positive images strengthened. Studying the cross-border area and learning about the “the other side of the story” can thus lower mental barriers in border areas and support cross-border interaction.

With our project we aimed to attract young people to cross-border cooperation and joint problem-solving. On a more general level, we also wished to stimulate active cross-border citizenship and to increase people-to-people linkages in the Finnish-Russian border area.

This project was for all of us our first experience in the field of cross-border science education. Therefore many things could have been improved in the implementation of the project, for example connecting the themes more closely with each other and with current global phenomena. Realizing the project for a second time would undoubtedly be much easier for all the project partners and the scientists.

However, for us the project was a very positive experience and we believe that we achieved the goals that we set for ourselves. We enjoyed working with the students and networking across the Finnish-Russian border. For the schools the project offered a new way of accomplishing cross-border cooperation, and developing cross-curricular education and discovery learning. The scientists were able to practice popularizing science and working with school children, while using the opportunity to build connections across the border. For sociologists the project was a unique chance to observe
how young people can connect across borders and how conceptions of the border, the neighboring country, and its citizens can change in the minds of young people.

The idea of this manual was to share the Cross-Border Citizen Scientists-model and to allow it to be adapted by any school, university or other organization. We are willing to share more of our experiences if you plan to realize a similar project in your border area.

In the near future our work in the field of science education will continue. Our next step is to develop the study materials of this project into ready-to-use science education materials for teachers. These materials will be available in the internet and they will be directed at studying borders and border areas. The materials will enable teachers to give science education lessons at schools, and to encourage more active cross-border citizenship in different border areas.
Getting ready for the project

1. Finnish and Russian students at the kick-off meeting
2. Russian students performing for the Finnish students
3. Students making super balls at the university
4. Project planning at the Radio Astronomical Observatory
5. Project group at the kick-off meeting
The Environment Theme

1. Students writing down problems existing in forests
2. Lecture about the human-environment relationship
3. Russian students analysing the quality of the water
4. Russian students studying soil and vegetation
5. Finnish students learning about water analyses
Joint seminar for the Environment Theme

1. Students observing the modeling of river construction
2. Peer teaching at the Finnish school
3. Aleksandra presenting her scientist
4. Valentina serving tea in the school museum
5. Visiting the Poultry Plant “Roskar” in Pervomayskoe
The History Theme

1. Finnish students learning about the history of the border
2. Lecture about historiography at the Russian school
3. Finnish students with the Russian lecturer and translator
4. Russian students visiting the Mannerheim line
5. Russian students and the remnants of the Soviet aircraft
The joint seminar for the History Theme

1. Russian students conducting an interview
2. Students planning a poster for their museum exhibition
3. City orienteering in Vyborg in the company of a journalist
4. Presenting posters about the history of the border area
5. Visiting the Vyborg castle
The Business Theme

1. Lecture about the Finnish-Russian economic relations
2. Russian students at the entrepreneurship workshop
3. Students considering whether companies are responsible
4. Finnish students at the entrepreneurship workshop
5. Company advertisement made by the Finnish students
The joint seminar for the Business Theme

1. Working on the market research questionnaire
2. Playing the recruiting game
3. Visiting Disha’s fish close to the Finnish-Russian border
4. Having fun at the bowling alley
5. Visiting the multinational forest enterprise Stora Enso
The Mental Borders Theme

1. Russian students having a meeting with specialist Olga
2. Finnish students presenting their cartoons
3. Lecture about ethnicity and ethnic stereotypes
4. Conducting an interview about cross-border travelling
5. Cartoon about Finnish and Russian border guard dogs
The joint seminar for the Mental Borders Theme

1. The group analysing ethnic jokes presenting their study
2. Newspaper group engrossed in documentary theatre
3. Students with the actors from the local theatre group
4. In Svetogorsk in front of the twin city monument
5. Students carrying out visual analysis of city space
Behind the scenes

1. Our trusted interpreter Natalia at work
2. Finnish students giving an interview for the Vyborg TV
3. Russian student Andrei being interviewed to the TV
4. Presenting the project on European Cooperation Day
5. Drawing a mental map of the Finnish-Russian border area
This manual represents a model for giving science education to young people living in border areas. It is based on a project called “Cross-Border Citizen Scientists”, which was realized in 2012-2014 in the South-East Finland – Russia ENPI CBC 2007-2013 program. The project collected a Finnish-Russian group of students (comprehensive school level) to be trained into “citizen scientists”. The students learned how to conduct research and how to study their own cross-border area. This manual introduces the Cross-Border Citizen Scientists project with the purpose that any group of teachers and scientists in any other border area would be able to implement a similar project.

Further information:
Lappeenranta University of Technology / South Karelian Institute
www.lut.fi/eki
etela-karjala-instituutti@lut.fi

Centre for Independent Social Research, St. Petersburg
www.cisr.ru
centre@cisr.ru