



• **ArctiChildren InNet** •

# Empowering School eHealth Model in the Barents Region

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Inna Ryzhkova • Minttu Merivirta (editors)

# ArctiChildren InNet

Empowering School eHealth Model in the Barents Region

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## Foreword

*”What can I do when my pupils play with their mobile phones during class? How can I make them stop and concentrate on the subject in hand?” The answer can be easy: Stop trying to make them quit and instead start utilizing these new equipment and online channels in your teaching. Maybe your pupils learn better if they can use the ways they are familiar with since they were born. And even better, as they are learning they can also teach you.*

The internet provides innovative and all the time more versatile opportunities for youth such as its potential for learning, enhancing social relations, searching information as well as delivering health interventions. The internet with its different eHealth applications are increasingly being used in social and health care. A distinct advantage of the internet is reaching communities in providing eHealth services, including hard-to-reach populations, e.g. youths in rural settings. Also, the traditional sources of health information are no longer satisfying the needs of the youth. For example to book an appointment for a health specialists can be too old fashioned and too slow to them. Instead, they are searching for information on the internet.

Multimodal approaches and eLearning seems to be the evitable future of learning in general. ArctiChildren InNet project (2012–2015) looks for answers and new ways to deal with health issues among schoolchildren by means of

eLearning. The project aims to develop a cross-border online health promotion for the pupils of secondary schools in cooperation with the universities and pilot schools in the Barents region.

ArctiChildren InNet project has been a journey of “shared learning” as schoolchildren, teachers, university students, social and health care practitioners and their educators in four countries have learned how to develop new eHealth approaches and strengthen the learning and health connection through multimodalities and ICT applications at schools. This three year interesting journey was financed by Kolarctic ENPI CBC programme and coordinated by the Lapland University of Applied Sciences.

**In this publication we proudly present the experiences and results gained during the ArctiChildren InNet “Empowering School eHealth Model in the Barents Region” project.**

ArctiChildren InNet project has been very practical in a manner that the pupils

of pilot schools have been participating in different workshops. On the other hand, the project has also given a chance to many university students to gain knowledge in their area of expertise by being involved in planning and organizing these workshops. Cooperation between university students, university teachers and other project staff as well as the pupils of the pilot schools has produced a fertile ground for everyone to learn and get the best results and the most recent knowledge.

In the Introduction chapter we take a look at the long history behind the project and we contemplate the phases and actions that led into where we are right now. Theoretical Background chapter aims at giving the reader comprehensive knowledge of the main theories and ideas behind the implementations of the project. In the Theory Meets Practice chapter we present the various ways that these theories are taken into practice with, mainly by involving the pupils of our pilot schools. Practical Experiences is a platform for all of our active university students to present their work within the project. We also share some experiences on how our project staff worked together with the pupils in order to develop ways to enhance practices in eHealth and

eLearning. The Conclusion chapter takes a look at the future of eHealth and eLearning; which are the next steps in the development and what should be our role as experts of these issues to make the future even brighter.

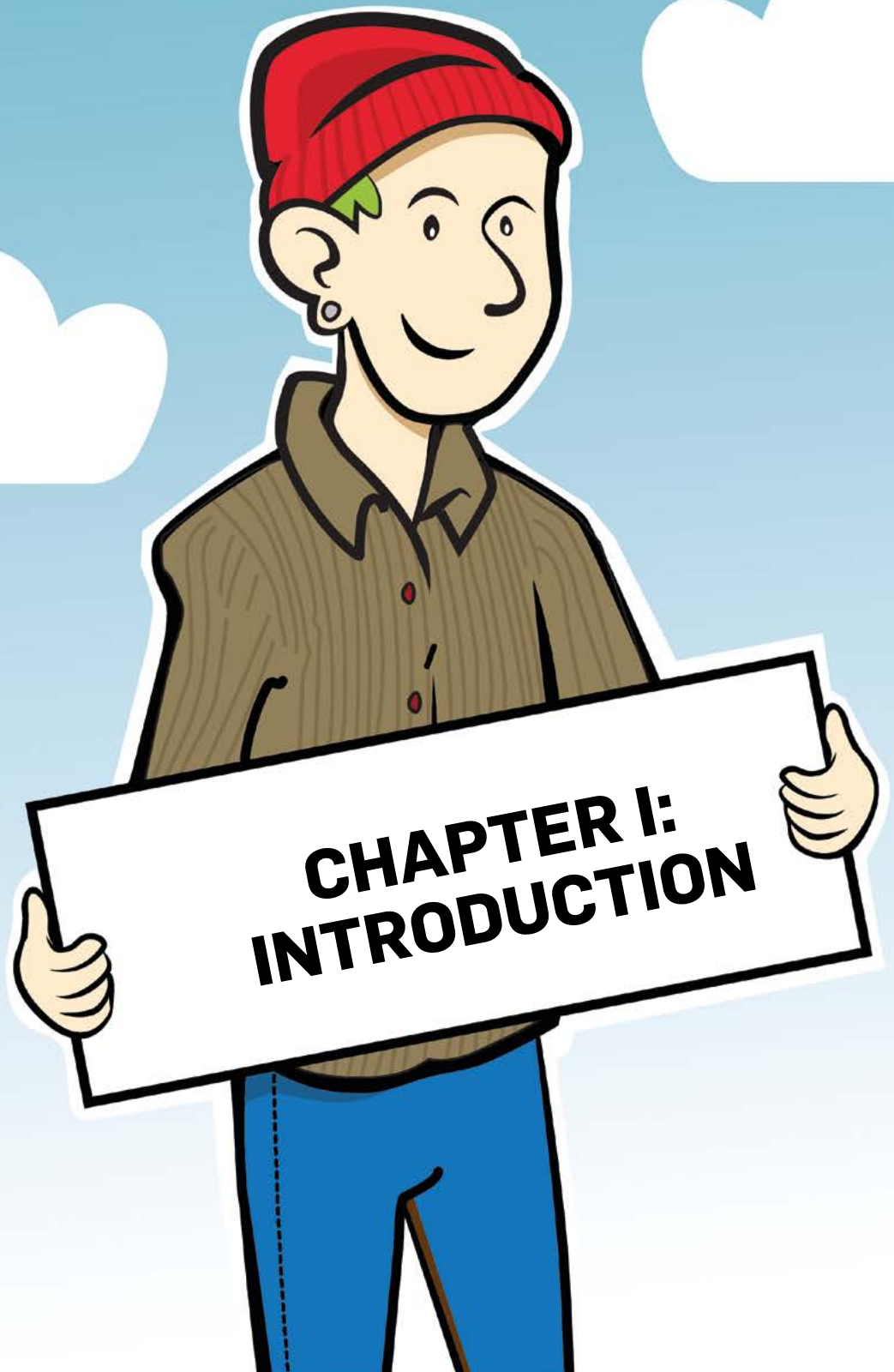
This publication gives valuable information for the experts who work with schoolchildren and deal with the health issues in every day (working) life. Also experts of universities and other organizations who are dealing with eHealth and eLearning issues get useful perspectives for their work.

Our greatest hope is that our experiences and the knowledge that we want to share will open eyes and make the reader think about health issues in schools in a new and innovative way.

We challenge everyone to think outside the box and question the traditional ways of teaching. What kind of (health) issues can and should be taught online? How could I deal with difficult health issues in a way that attracts my pupils? **Do I dare to step outside my comfort zone and see the modern technology rather as a strength than an obstacle?**







# **CHAPTER I: INTRODUCTION**





# History of the ArctiChildren Projects

In the year 1998 the ministerial committee of the Arctic Council made an initiative to develop a strategy for the future of children and youth (The Iqaluit Declaration 1988). The goal was to improve the health and well-being of children and youth and to gain knowledge, understanding and prerequisites about the issues of sustainable development in the Arctic region. The Arctic Council's program called The Future of Children and Youth of the Arctic lead by Canada was a remarkable act for the development of the status of children and youth in the Arctic.

The first preliminary phase of the ArctiChildren projects was called *Psychosocial Well-being of Children and Youth in the Arctic* and started at the University of Lapland in April 2001. The starting the project was influenced by the Finland's chairmanship of the Arctic Council in the years 2000-2002. The Finnish Ministry of Social Affairs and Health allocated funding for the University of Lapland to start the work in the Canadian Health Programme of The Future of Children and Youth of the Arctic Initiative. The concrete work of the Finnish project was to collect data of the psychosocial health indicators of children and youth living in the Finnish

Lapland. The report Analysis of Arctic Children and Youth Health Indicators<sup>1</sup> was published in August 2005.

The Finnish Ministry of Social Affairs and Health also wished that the University of Lapland would start dialogue about the topic with the colleges and universities in the Barents region. The aim of the dialogue was to plan a new project dealing with the psychosocial well-being of children and youth in the Barents region.

ArctiChildren -projects have had as a goal since 2002 to develop a cross-border network model and create new working methods for improving the psychosocial well-being, social environment and security of school-aged children in the Barents region. The project was international and intercultural and also had a basis in the Northern Dimension of EU policy.

The consortium coordinated by the University of Lapland started the ArctiChildren I project - *Development and Research Project of the Psychosocial Well-being of Children and Youth in the Arctic* in April 2002. The project was implemented in two stages: stage I 2002-2003 with Russian and Finnish partners, and stage II 2004-2006 with the Swedish, Norwegian, Russian and Finnish

partners. The project was funded by the Interreg III A North Programme and the Finnish Neighbourhood Area Funding Programme. The goal was to investigate and compare the stage of schoolchildren's psychosocial well-being in the Barents region.

Also interventions for improving the psychosocial well-being at the pilot schools were carried out. Altogether 27 schools with cultural and environmental differences from all four countries participated in the project. Research and development findings from Northern Finland, Sweden and Norway, and North-West Russia have been published in a book called "School, Culture and Well-being" (Ahonen, Kurtakko & Sohlman 2006).

### School, Culture and Well-being:

ArctiChildren II 2006-2008 – *Cross-border Training Program for Promoting Psychosocial Well-being through School Education in the Barents Region* -project was founded to utilize the best practices from the earlier project stage and to continue development work with the pilot schools for producing a cross border training material. The purpose of the project was to increase educational abilities in promoting children's psychosocial well-being at the northern schools in the Barents region. Teaching methods were related to social interaction

and health promotion as well as by utilizing the opportunities provided by art and culture in teaching which are based on social and cultural sustainable development. The training material was published as a book in four languages. The English name of the book is "Crystals of Schoolchildren's Well-being – Cross-border Training Material for Promoting Psychosocial Well-Being through School Education" (Ahonen et al. 2008).

### Crystals of Schoolchildren's Well-being:

The project was funded by the Interreg III A Northern Programme, the Kolarctic Neighbourhood Programme and the Finnish Ministry of Social Affairs and Health.

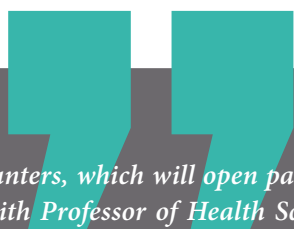
In the cross-border ArctiChildren I and II – the network of participants included the Murmansk State Pedagogical University; Department of Social Pedagogics and Social Work, the Luleå University of Technology; Department of Health Sciences and Department of Education, the Finnmark University College; Department of Educational Studies and Department of Culture and Social Sciences, and the University of Lapland; Faculty of Education and Faculty of Art and Design. Also the schools with cultural and environmental differences from every country were involved in the ArctiChildren -projects.

**ARCTICCHILDREN -PROJECTS HAVE HAD AS A GOAL SINCE 2002 TO DEVELOP A CROSS-BORDER NETWORK MODEL AND CREATE NEW WORKING METHODS FOR IMPROVING THE PSYCHOSOCIAL WELL-BEING, SOCIAL ENVIRONMENT AND SECURITY OF SCHOOL-AGED CHILDREN IN THE BARENTS REGION.**

The first steps of planning the following project, ArctiChildren InNet 2012-2015 project called *Empowering School eHealth Model in the Barents region* were taken in the spring 2010. The new phase of the project was co-ordinated by the Rovaniemi University of Applied Sciences. The project was based on the earlier cross-border ArctiChildren development and research activities implemented during 2002-2008. Totally new interesting challenges were faced by combining ICT approaches and schoolchildren's health promotion. The main point was to develop new eHealth approaches and to strengthen the learning and health connection through multimodalities and ICT applications at the northern schools. The aim was to develop new empowering eHealth practises in the urban and rural schools together with teachers, pupils, social and health care experts and the university network in the four countries in the Barents region.

The ArctiChildren InNet network has consisted of the following partners: Luleå University of Technology; Faculty of Education and Department of Health Science, Finnmark University College (from the 1.1.2014 University of Tromsø); Department of Educational Studies and Department of Social Work, Murmansk State Humanities University; Department of Social Pedagogy and Social Work, Northern Arctic Federal University; Department of Information Technology. Besides Rovaniemi University of Applied Sciences; School of Health Care and Sports, the partners at the Lapland University Consortium have been Kemi-Tornio University of Applied Sciences; School of Health Care and Cultural Studies and the University of Lapland; Faculty of Education and Faculty of Arts. From the beginning of 1.1.2014 Rovaniemi University of Applied Sciences and Kemi-Tornio University of Applied Sciences were combined. The new name is Lapland University of Applied Sciences. Also three pilot schools from every participating country were involved in the project. The project was funded by the Kolarctic ENPI CBC Programme.

**ArctiChildren InNet partners and pilot schools on a map:**



*Sometimes there can be remarkable encounters, which will open paths to the future. This kind of encounter was with Professor of Health Science Kerstin Öhrling, Luleå University of Technology when we found each other at a conference in Tromsø in 2001. We both wanted to improve children's health and keep in touch. This resulted in an EU project and cross-border collaboration. In the Barents region, we have a lot in common such as the climate and environment, but we are also very different. Just to network and collaborate across boundaries is incredibly important. An open dialogue provides an understanding of each other's possibilities and difficulties. We share learning together. In the conclusion part of this publication you can read more about Kerstin Öhrling's thoughts in her article "From ArctiChildren to ArctiChildren InNet – some reflections".*

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# Background of the ArctiChildren InNet Project “Empowering School eHealth Model in the Barents Region”

ArctiChildren InNet project promised to the financier Kolarctic ENPI CBC Programme in March 2012 to develop new eHealth approaches and to strengthen the learning and health connection through multimodalities and ICT applications at the northern schools in the Barents region as described in the project plan. The goal of the project was to improve the common challenges of the schoolchildren's physical, psychological, emotional, social and spiritual health and well-being, security, and cultural identity through ICT applications in the Barents Region.

In this article I would like to bring out some perspectives that were the starting points of the ArctiChildren InNet network when its six universities and altogether eleven pilot schools in the four northern countries in the Barents region wanted to commit to the development work with its new challenging - but at the same time - such interesting and inspiring goals.

## Internet as a new health setting of the schools

“Health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love.” This famous sentence of the Ottawa Charta, published by the World Health Organization (WHO 1986), is an early definition of the settings-based approach to health promotion.

The settings approach to health promotion is a world-known concept, which has been developed during the past twenty years. Health promotion and health education have been organized around settings such as cities, workplaces, and schools, also around leisure time activities such as youth sports clubs, which provide major social structures that provide channels of influence for reaching different population groups. (Kokko, Green & Kannas 2014, 373-382; Green, Poland & Rootman 2000.) Settings define the audience of intervention - individually, collectively and organizationally - and the channels

for predisposing, enabling and reinforcing their health-related behavior. Most health promotion activities are bounded in space and time within settings which provide social structure and context for planning, implementation and evaluating interventions. (Kokko 2010, 11; Green, Poland & Rootman 2000, 1.)

Taking a setting approach to health promotion means addressing the contexts within which people live, work, and learn and making these the object of inquiry and intervention as well as the needs and capacities of people to be found in different settings. This approach can increase the likelihood of success because it offers opportunities to situate practice in its context. Members of the setting can optimize interventions for specific contextual options, and render settings themselves more health promoting. (Poland, Krupa & McCall 2009, 505.)

Today ICT applications enable interactive, participatory and collaborative approaches that encourage self-expression. Online communities have created an opportunity to explore the internet as a setting in which health services can be delivered to large populations, with the possibility of individuals tailoring their online experience to suit their needs. (Burns, Davenport, Durkin, Luscombe & Hickie 2010.) School as a health promotion setting is an example where ICT technology enables the utilization of different interactive, participatory and empowering applications - also by paying attention to schoolchildren's self-expression for improving their health and well-being.

Dooris et al. (1998) argue that a health-promoting setting seeks to integrate an

understanding of and commitment to health within its routine activities and procedures. A health-promoting manufacturer thus focuses on its products and production systems. As an example they use a health-promoting university and consider among others if the materials used are healthy and sustainable focuses on its education? Or do the educational methods reflect principles such as participation and empowerment? (Dooris et al. 1998, 18–29.) These issues have been highly topical also in the ArctiChildren InNet project when the project actors of the pilot schools and the universities have developed new eHealth and eLearning applications for school education.

As a summary it can be found that inside the school setting there is a new health setting. It is the ICT technology with its innovative and participatory approaches to reach school children and empower them towards healthy and happy life.

## **Schoolchildren as early adopters of new ICT technologies**

The internet is a place of relaxation, useful information and interaction. Technological development has moved the number of everyday things towards eLearning, enabling the physical distance or time of day independent of communication and use of electronic services. In particular for young people internet, social media services, games, forums, and other content create a massive field of action, which can be obtained through positive experiences

and support their own growth. The internet and young people are inseparably linked. (Helsper & Eynon 2010; Joensuu 2011, 14–21.)

Young digital natives or the millennials, so called the online or the Google generation are children and young people who were born to the society surrounded with different technology with its networks after 1980. All of these terms are being used to highlight the significance and importance of new technologies within the lives of young people. For them, the daily electronic media use is normal and natural, as it has always existed in their lifetime. This means they have no boundaries with real-life and the internet. The internet is for children and young people an essential part of their development environment. It is a fundamental change in the way how young people communicate, socialize, create and learn. (Helsper & Eynon 2010; Joensuu 2011, 14–21.)

Differences in the ways of thinking about the social media have been defined among others by Strauss and Howe (1991). They recognize genders X, Y and Z. The X-generation is represented by individuals born during 1961-1979, in other words during the time period before the massive breakthrough of social media. The Y-generation (years of birth 1980-1998) has grown up during the first phase of social media. The way of thinking about social media that the Z-generation (years of birth 1999-2019) represents will probably challenge the thinking of two previous generations. Generations grow up and get used to assumptions predominating in the society, especially during the youth and maturation. In addition to the differences

in ways of thinking there are also differences in the ability to adapt to new developmental trends. We are in a turning point and it is possible that the difference in experiences related to social media among the Y- and Z-generations will be as large as or larger than experiences between the X- and Y-generations. The consequence of this is the way of thinking about social media that forms until 2020s (Säntti & Säntti 2011, 34).

Prensky (2001) has described the concepts Digital Natives and Digital Immigrants as a way of understanding the differences between the young people of today and many of their elders. He points out that to him being as a digital native means growing in the digital culture, as opposed to the transition to it as an adult. Anyway we all have grown up in the era of digital technology as we move further into the 21st century and therefore the distinction between digital natives and digital immigrants will become less relevant. (Prensky 2001, 1–6; Prensky 2011, 17.) In the final report of the EU-Kids Online survey which was implemented in 2010 it is described how on average one third of the 9-16 year olds (36%) from 25 000 children had said that the statement, “I know more about the internet than my parents,” is ‘very true’. One third (31%) of the informants said it is ‘a bit true’ and one third (33%) said it is ‘not true’. (Livingstone, Haddon, Görzig & Ólafsson 2011, 28.) Although one third says it is true for them that they know more than their parents about using the internet, there is still another one third that argues that their parents know more about the internet than they do.

As we work for creating a better future in our global world, we might probably

need to learn something about the term of digital wisdom by Prensky (2011). Digital wisdom is a twofold concept, referring both to wisdom arising from the use of digital technology to access cognitive power beyond our innate capacity and to wisdom in the prudent use of technology to enhance our capabilities. Technology alone will not replace intuition, good judgment, problem-solving abilities, and a clear moral compass. But in an unimaginably complex future, the digitally unenhanced person will not be able to access the tools of wisdom (Prensky 2011, 17).

### **From recipients towards co-creators of health promotion**

A study carried out by Kupiainen (2013a) during 2010–2011 in western Finnish secondary schools points out that some teachers had adopted a digital native myth as part of the school culture. In other words, they thought that pupils acquire sufficient information technological know-how independently. However, results of the study showed that there are very many kinds of pupils, some of them were active, advanced users of information technology, whereas some were mainly concentrated in consuming media entertainment. Not every young person used social media. User oriented culture requires active participation in producing and sharing of media contents, too. Young persons have readiness to adopt this culture and to reclaim their place as producers of digital content. This is a step towards digital wisdom that Prensky (2011) is talking about, instead of digital natives (Kupiainen 2013a, 6–15).

Also Rahja (2013) points at the previously mentioned active, advanced young media users by noting how changes in media and new digital environments have created unforeseen possibilities for participation, interaction, and influencing. Internet and new technologies have brought new interaction arenas, which especially young persons have rapidly taken as their own, and thus have had an influence on the development of media environments. Many significant social media services such as Facebook, YouTube, Flickr and Blogger were born as a result of the young persons' needs. Interactive social media has changed the position of young persons in relation to media. Consumer's, user's, experiencer's, and producer's roles have interlocked. Thus, young generations as the users of internet can be described as active, social and technological. (Rahja 2011, 4–8.)

Digital culture also inevitably changes learning and growing into the cultures to a direction where learners have become editors and producers of knowledge. Learning for yourself can be a previously indeterminate adventure that can as its best be compared to a work of an explorer, as the learner conquers unknown areas of knowledge and know-how. Participation and creativity in digital culture are challenging possibilities, which we have to seize on. This requires understanding about the nature of acting in the digital culture, especially from individuals working in education. Curiosity and courage is now required from them to get acquainted with among others new forms and tools producing communal digital material. (Sintonen 2013, 83–91.)

According to Paavola and Hakkarainen (2008) a symbol of



participation emphasizes meaning of social communities as the basis of learning and development of expertise. Knowledge is not seen to be located in peoples' minds or somewhere in a separate reality, but it shows up and develops as cultural participation in different communities. On the basis of this, learning and expertise are understood to be dialogical processes by nature, where interaction between the operators, or operators and environment is essential. (Paavola & Hakkarainen 2008.) This is emphasized in particular in producing of knowledge that takes place in social media.

Now we live an era that can according to Sintonen (2012) be characterized as a second wave of the technological phase. If in the first phase the aim was to create information technological learning environments, now the matter is to bring touch - and smart technology to learning. This enables an all-encompassing approach in relation to the growth, development and learning of a child and an adolescent. The question is recognizing and understanding of expression and interaction skills, different meanings, and developing user skills, as well as especially strengthening emotions and own skills guiding to learning (Sintonen 2012, 78). Interaction within social media enables sharing information between schoolchildren by empowering way - they are producing new information by themselves. School children are sharing their own personal knowledge, emotions, skills and other resources inspiring each other. This means that they are creating new knowledge for promoting their own health by involving positive characteristics: participation, sense of community and empowerment. The

ArctiChildren InNet (2012-2015) project has given responses to that issue, because schoolchildren themselves have participated in the project as active actors.

## Finally

At the end of this article I would like to point out two critical aspects which have to be taken into account in developing new participatory and empowering ICT approaches for schoolchildren.

According to the report of New Millennium Learners (2008) on average, 50% of students in countries belonging to the European Union declared that they had not used a computer in the classroom in the past 12 months. After years this



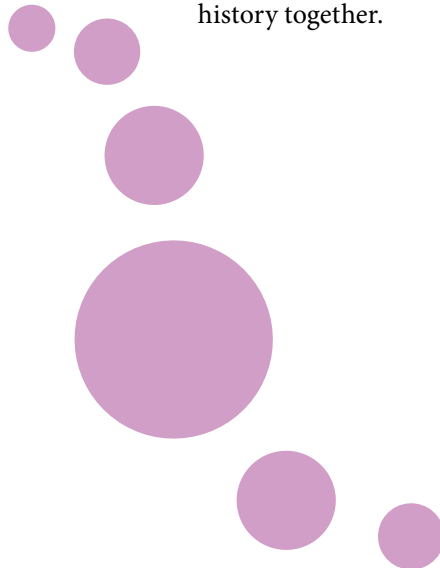
issue is still topical. Schoolchildren can feel the contradiction when they realize that digital technologies are so important in their daily lives – as they are also in the world of adults, particularly at work – except when they are in classrooms, where even mobile phones are usually banned. Even worse, they can even see that an important technological infrastructure is in place, but under-used. A quite a different question is whether school children’s practices and expectations are matched by teaching practices or not if technologies are used in the classroom. (New Millennium Learners 2008, 4.)

Livingstone et al. (2011) argue that opportunities and risks online go hand in hand. Efforts to increase opportunities may also increase risks, while efforts to reduce risks may restrict children’s opportunities. A careful balancing act, which recognizes children’s online experiences, is therefore vital. Social networking sites (SNSs) enable children to communicate and have fun with their friends, but not everyone has the digital skills to manage privacy and personal disclosure. Also many young children 9-12 years of age use social

media underage. This is why the internet with its different services needs reliable adults to give examples how to use the internet as an environment with participatory and empowering platforms to influence on schoolchildren’s health and well-being. (Livingstone et al. 2011.)

Finnish professor in pedagogics Yrjö Engeström (2007 [1987]) argues how there is good and bad learning. Bad learning goes behind the development and good learning goes ahead of development, clearing path for new developmental stages. Bad learning is transferring a completed, previously given culture into the heads of the receivers but good learning always produces something unpredictable, something, that didn’t yet exist.

In the ArctiChildren InNet project pupils and teachers from the pilot schools, and project actors of the universities in four countries have had a challenging but interesting path to develop and at the same time to learn from each other new internet transmitted methods for school aged children’s health promotion. We have created new joint history together.



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# Together for Schoolchildren's Health!

## - Arguments for Cross-border Collaboration to Promote Schoolchildren's Health through ICT Applications in the Barents Region

### Swedish arguments: ICT as a tool for health promotion

Most young people in Sweden feel healthy, and the important factors for good health are high empowerment, positive experiences in school and good atmosphere in the family (Jerdén, Burell, Stenlund, Weinehall & Bergstrom 2011; Public Health Agency of Sweden 2013; 2014). However, there is a growing psychological ill-health in Swedish children and the youth (Public Health Agency of Sweden 2014; Carlerby, Viitasara, Knutsson & Gillander Gådin 2012). The experience of satisfaction and well-being currently decreases with advancing age, which can be described for example in terms of stress, with symptoms such as anxiety, nervousness, and headache (National Board of Health 2009; Public Health Agency of Sweden 2014). In addition, Young people aged 10-24 have had a worse health development than other age groups in recent decades

(National Board of Health 2009). In addition, students describe how the lack of participation in schools is hindering a well-functioning school environment. However, the Swedish Children's Ombudsman (2012; 2014) points out the need to openly discuss the health problems among children and to improve the psychosocial environment at home and in school, as violence is common, and the need for feeling safe is expressed by young people. The presence of participation in school, such as taking part in democratic processes has been shown to have advantages such as decreased bullying and increased social and academic skills (Ahlström 2010). This need of health promotion efforts and involvement of schoolchildren in such efforts offer an opportunity to be involved in positively effecting their health and ability to learn in school (Ghaye et al. 2008).

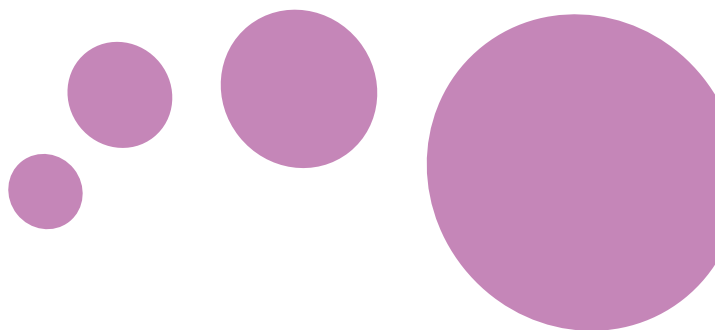
To enhance learning and support healthy behaviors ICT has become a new

tool for eLearning and eHealth. As the ICT approach is fairly new there is a need to evaluate ICT tools in practices as well as conduct research in the area. In addition, along with the Public Health Agency of Sweden (2014) researchers report that the use of ICT can have negative health effects on schoolchildren's physical and psychological health (Beckman, Hagquist & Hellström 2012). Therefore, it is, as we see it, important to acknowledge the risks of ICT and explore possible solutions to the problems by viewing ICT as a possible tool for health promotion in schoolchildren.

In Sweden there are a number of eHealth sites on the internet, and social media is playing an important role in young people's lives (see for example [www.umo.se](http://www.umo.se)). This offers an opportunity to use ICT, which children and youth are well acquainted with, as a tool to support empowerment and psychosocial well-being. Combining the ICT and the empowerment theories the focus in the planned activities in the participating schools in Sweden is on children's self-determination, ability to influence and participation. Empowerment and health promotion are closely related, where empowerment is seen as a necessary strategy for the health promotion (WHO 1986). Research with an empowerment approach is doing research together with schoolchildren, not doing research on them, in order to enable their voices to be heard in the development of health promotion practice. Empowerment focuses on self-determination, ability to influence, participation, and mobility (Arneson 2006). When young people experience that they are listened to, taken seriously, and have the possibility to participate and influence, their

psychosocial well-being increases (Christensen 2004; Kostenius 2008). Furthermore, participatory research has been proven to be successful in a number of research projects, particularly when linked to the health of young people (Curtin & Murtagh 2007). This is also connected to the Convention on the Rights of the Child (CRC 1989) acknowledging the rights of every child to have the opportunity to be involved and have a say in matters concerning them.

Therefore it is important to include children and youth when discussing experiences of psychosocial health and well-being as well as when discovering opportunities for ICT to contribute to health promotion activities to support the health-learning connection. More specifically, it is important to describe and to explore the possibility of using ICT to promote psychosocial health and well-being by listening to the experiences schoolchildren have of the health and learning in school and their ideas on how ICT can contribute to health promotion activities for greater academic achievements (Ahlström 2010). And let's have the aim to increase health literacy (Fetro 2010; Kickbusch 2001) working towards supporting the development of a health literate new generation with schoolchildren who can identify and use health information as well as act on it to improve their own health.



## Norwegian arguments: challenges and possibilities of digital media

During the last decade there has been a growing interest in using different digital media in Norwegian schools. Personal computers are more available in the schools and PC is the basic tool for activities on the internet, educational programs in the schools and little by little activities in social media. The development of digital media leads to easy access to information and expanded use as a pedagogical tool in school. Marc Prensky claims that today's students are changed: "Our students have changed radically. Today's students are no longer the people our educational system was designed to teach." (Prensky 2001.) He explains this singularity with a rapid dissemination of digital technology. Certainly he has college students in mind, but in our opinion this has reached primary schools as well.

But the digital revolution opens roads also for misuse. For example, reiterated are the many examples of bullying among young people on the internet. There is reason to worry about the offering of play stations with or without money games to young people. It is challenging to master the new media situation, and in depth are these questions concerning young people's health.

For health promotion especially very little research has been done in Norway.

For us this will be a good start to develop eHealth promotion together with the schools.

Mastering the media world and gaining control over one's own life are topics that need to be worked on in the digital revolution we all are part of. Many parents do not know how to meet this development with regards to their own children. The situation brings up problems for the whole society as well as publisher's commitments, quality of information, privacy protection, and challenges related to identity formation and cultural diversity. To meet and educate pupils from different cultures and with different social conditions represent a great challenge for the educational system, the schools and the curriculum. We believe that many young people are badly prepared to meet these media challenges. This concerns how well prepared they are to use new media in a constructive and critical way. Questions about ethics, the impact of advertising, development of youth culture and identity formation, and to develop a qualified and critical attitude to the media development represent areas of great importance. The school has a commitment to empowering pupils in the use of digital media and perhaps have consultations with parents because many parents are uncertain how to meet these challenges.

In the north, we are living in sparsely populated rural areas and to a large extent young people become dependent on social media. As a consequence, young people spend a lot of time in using social media. Therefore, school programs plays an important role in managing the digital media and their impact on the quality of the daily life. Besides, digital media will influence identity formation in a broader perspective.

## Russian arguments: joint online activities in “eHealth” space

Russian schools gradually move on to new technological complexes called eSchools according to the new standards of IT technologies. The eSchool program possesses a strong potential of providing services to pupils, their parents and teachers. However, for the time being these services are limited to eJournals of pupils’ progress, pupils’ eRecord books and eTimetable etc.

The main advantage of the information educational environment lies in its flexibility to adapt the environment to the individual needs of the student due to a high level of variability (Zenkina 2007).

Variability of information educational environment is the ability of the environment to provide a choice of the structure and content of educational activities with variational forms, teaching methods, using a variety of educational resources, any pedagogical techniques and learning activities. The environment implements self-structuring of the content elements and organizational phases of it, which allows us to speak about its self-organization. Thus, by the information educational environment we understand a set of objects of the educational process (content, forms, methods and means of teaching and learning communication) on the basis of

information technology that has variative characteristics and that provides the subjects of educational process (students, teachers) with the ability to design educational-cognitive activity (Vasilchenko 2010).

The development of a new innovative space called “eHealth” will contribute to the optimization of an educational process that is implemented in accordance with the provisions of conception of modernization of general education contents in the Russian Federation and a federal target program “Development of common information environment” in terms of information society formation on the basis of innovative forms and methods of teaching using modern computer technologies and networking facilities.

Joint online activity of teachers, pupils and their parents in the process of distance learning will contribute to creating conditions of improvement of schoolchildren’s psychosocial health and well-being. The program “eHealth” presupposes a new way of organization work in the educational institutions with pupils and families aiming to improve their safe, healthy and comfortable life and living environment. It can also serve as a specific way of embedding innovative technologies in the field of education and thus it fully meets the objectives of educational policy of the Russian Federation and the Murmansk region.

**THE SCHOOL IS AN IMPORTANT GROWTH AND DEVELOPMENT ENVIRONMENT FOR EVERY CHILD. SCHOOLCHILDREN’S HEALTH PROBLEMS ARE CHANGING AT DIFFERENT TIMES AND THEY REFLECT CHANGES OF THE SOCIETY AND COMMUNITIES.**



## **Finnish arguments: for the best results by empowering schoolchildren**

According to the Finnish nationwide School Health Promotion (SHP) study conducted in 2013, there are a number of things to rejoice in the health of the Lappish youth compared to previous years. Among other things different symptoms for example headache and neck and shoulder area symptoms have decreased, and daily smoking and binge drinking have decreased. The young people also feel that the working atmosphere at schools has improved and also the young people being heard has increased in schools. Concurrently concerns arose in the same study. Many young people skip a meal during the day, especially lunch provided by the school. On the other hand, childhood and adolescent obesity is an increasing problem. Young people are also sleeping less than before. In addition, the use of computers and mobile phones, including TV, the so called “screen time” has increased significantly. (Kivimäki et al. 2014, 42–44.)

The school is an important growth and development environment for every child. Schoolchildren’s health problems are changing at different times and they reflect changes of the society and communities. Today the internet – with its’ positive and negative features - is obviously influencing directly or indirectly also the various health problems.

Internet and ICT have revolutionized approaches, methods and practices to produce services for school education and social and health care. Finland is nowadays making important strides for

example in renewing the structures and methods for social- and health care. According to the electronic data management strategy report by the Finnish Ministry of Social Affairs and Health, the Finnish people use the internet widely and they have a good attitude and basic computing skills to introduce internet and mobile based services also in the social and health care sector. The objective of the strategy is to have a sustainable society where people are treated equally, everyone’s involvement is ensured and everyone’s health and functional capacity is supported. In addition to the electronic customer services, new tools for preventive activities and citizen’s self-motivated health and well-being care should be developed. The objective of the strategy is also to enable the citizen to use electronic services regardless of their place of residence. (Ministry of Social Affairs and Health 2015.)

A working group called “The needs of the curriculum of an internet time at comprehensive school” has proposed that when renewing the criteria of the primary education curriculum, know-how, learning and the thinking skills significance should be considered more strongly in all activities and serve as a base for lifelong learning. Even more important to the future of knowledge is to ensure the basic skills to take advantage of digital services and content - including one’s own learning and activities. (Ministry of Employment and the Economy 2013.)

National objectives and challenges for school education and social- and health care are guiding regional and municipality level development work. Further on all these development needs

are coming to the schools where the school staff is working with children. At the classroom level we are meeting and working with children. The smallest but at the same time the most important element in this chain is the child. Only by listening and involving the children in developing together - by empowering them - new ICT applications and practices we are able to achieve the best possible results for the future. This goal has also been guiding the cross-border development work in the ArctiChildren InNet project.

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# Development Process of ArctiChildren InNet Web Pages

The development of the website [www.arctichildren.com](http://www.arctichildren.com) started in spring 2012. The whole project group discussed it in the very first kick-off meeting held in Rovaniemi 12.-13.3.2012. As mentioned in the project plan in result 3, we had promised to build up an ICT environment (i.e. website, virtual environment) where dialogue with new interventions and practices would be implemented.

We used a method called “the Six Thinking Hats” to identify the possibilities of a website usage in the ArctiChildren InNet project. We understood that since we had 4 countries and 5 languages involved we needed to make some compromises regarding the website. We decided that building one common homepage in English would suit the needs and would be possible to do within our resources. We would then have national parts in the website or links to each country’s section.

The Head of the Kolarctic ENPI CBC programme gave a permission to use the [www.arctichildren.fi](http://www.arctichildren.fi) website that had been developed in the previous national ArctiChildren InNet project as a base of the new website. Since the target group would be the same and the projects overall goals almost identical it made

sense to use something we already had in our hands.

We first opened a blog for our internal use at <http://some.lappia.fi/blogs/acthree/> where we shared news about the project and informed our financiers about the progress of the project. Later we also decided to launch a Russian version of the site ([www.narfu.ru/arctichildren](http://www.narfu.ru/arctichildren)) with limited features.

## Examples of existing web pages and online services, best practices

We started doing research to find out what kind of services and websites existed at the time for online health promotion for school aged children. We found that in every country (Finland, Sweden, Norway and Russia) there was at least one major actor in children’s online health promotion.

In Sweden there is UMO ([www.umo.se](http://www.umo.se)) which is a web-based youth friendly clinic for young people aged between 13 to 25. The site makes it easier for young people to find relevant, current and quality assured information for example about health, sex and relationships. The

development of UMO was financed by the Ministry of Integration and Gender Equality in 2008. The operation of the site is financed by municipalities and the county councils. (UMO 2014.)

The continuous development of UMO is done in co-operation with young people in Sweden, youth clinics, school health services, Non-Government-Organizations and professionals working with young people (UMO 2014).

Norway has a similar site called Klara Klok ([www.klara-klok.no](http://www.klara-klok.no)). Klara Klok was established in 2000 at the request of the young people in Nordland County, Norway. Young people between the ages of 10-25 have the opportunity to ask questions about health, family, relationships, alcohol/drugs and sexuality. Klara Klok services have been financed by the Norwegian Department of Health Affairs since 2002 when Klara Klok was defined as a responsibility of the National Health Service. Young people can search for information concerning youth and health and also send in questions. They will get an answer within a week. The service is completely anonymous and free of charge. (Klara Klok 2014.)

In Russia, including the Barents region, there are no designated sites or services for children and young people in terms of online health promotion. The Russian pupils in our project had used services like [www.zdorovieinfo.ru](http://www.zdorovieinfo.ru) (health and wellbeing site), [malahov-plus.com](http://malahov-plus.com) (Russian TV doctor) and [www.takzdorovo.ru](http://www.takzdorovo.ru) (health site maintained by the Ministry of Health of the Russian Federation).

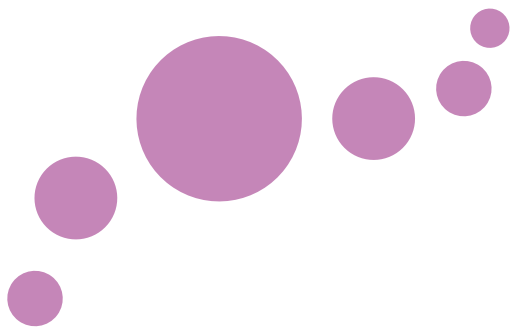
Verkkoterkkarit (Net nurses) is an online service provided by the City of Helsinki and the Department of Social

Services and Health Care. Altogether four Net nurses work online with adolescents aged between 13 to 18 years old. Adolescents can ask questions regarding health and wellbeing anonymously in chat rooms and in question-answer type services like Facebook, Demi ([www.demi.fi](http://www.demi.fi)) and [www.pulmakulma.fi](http://www.pulmakulma.fi). (Markkula 2013, 17-20.)

Jepari-chat (2014) (Cop or police chat) is organized by the city of Oulu youth work professionals and the Oulu Police Department. They work together in IRC-Galleria (2014) ([irc-galleria.net](http://irc-galleria.net)) where they interact with adolescents over the age of 12. The service is open every Monday between 4 pm and 6 pm. The service was cancelled until further notice in fall 2013.

Netari (2014) is a youth house that does multi professional work in online services like IRC-Galleria and Demi. Adolescents can talk to a youth worker, nurse, public health nurse, social worker or police and also be involved as an assistant counselor. Netari is organized by Save the Children Finland.

Move – a multi-disciplinary online youth work project is coordinated by the city of Oulu. The project aims to enhance the professionals' and communities' capabilities to respond to the challenges of online youth work. In the project a knowledge-based profile for online youth work will be developed. This profile can be reproduced to other people working with people online. Move is also participating in Netari. (Move 2014.)



## Workshops and users wishes for the web page

In spring 2012 the project organized workshops at the pilot schools to map and identify the needs and wishes of the pupils for the upcoming ArctiChildren health promoting website. Participating schools were Ivalo upper level of comprehensive school, Rantavitikka school, Sallatunturi school and Ranua school from Finland, Lovozero boarding-school, Kandalaksha secondary school no 19, and Murmansk gymnasium no 5 from Russia, Pasvik and Talvik schools from Norway. The workshops in themselves worked as an empowering method to involve the pupils in the project. We wanted to have the pupils' opinions and let them have their say in the development process.

The workshop questions were:

1. What social media (Facebook, Youtube etc.) do you use regularly and for what purpose?
2. What sort of health related information and conversation sites have you searched for in the internet and from where?
3. What kind of concerns do you think teens your age have these days?
4. What kind of health related issues (own health, schooling, leisure time, family, friends etc.) teens would like to discuss in social media and with whom?
5. What should the upcoming health promoting website look like (colors, pictures, texts etc.)? Should there be a mobile/tablet version of the site?

Popular social media sites were for example Youtube, Facebook and the Russian VKontakte. Pupils used these

sites mostly to share status updates, post pictures and videos, follow friends and relatives, chat and communicate and to play games. Regarding health and wellbeing, the pupils had searched information about leisure time activities and hobbies. Also diseases, intoxicants, puberty, sex/love, school and food recipes came up. The most popular way to search information was to use the Google's search engine. Finnish pupils had also used Wikipedia and discussion forums. Pupils in Russia had used malahovplus.ru (Russian TV-doctor), takzdovoro.ru (site maintained Russian ministry of Health) and zdorovieinfo.ru (health and wellbeing) sites to obtain health related information. Norwegian pupils had used sites like diskusjon.no (discussion forum), ung.no (information site) and forskning.no (research news about health).

The pupils had quite many concerns, and some similarities were found between countries. For example pressure to succeed in school and also their post-graduate plans worried the pupils. They expressed their concern regarding the possibility of having to move to a different city to study after high school and whether they could make new friends there. In their opinion they didn't have enough leisure time activities in their town/city or places to meet other pupils after school. In Russia pupils were more concerned about the environment than in other countries. On the other hand Finnish pupils were more concerned about their appearance, health and social exclusion.

The pupils said they would like to discuss online about school and bullying, but they didn't know exactly who they would want to talk with. Also where they would discuss about these issues was not

clear, whether it was on their school's website or some other platform for example Facebook etc. Many pupils also said that they didn't want to discuss their personal problems online with anyone even if these conversations were anonymous and secure. Many pupils wished for some kind of a discussion forum where they could talk securely and anonymously. They also wanted someone to moderate the discussion so that any inappropriate behavior would not take place. Pupils would like to discuss with other pupils and also experts.

When asked about the features the upcoming websites should have, pupils suggested that there should be health and wellness related games and competitions. The site should be simple to use and that there would be no registration required to use any of the services. There should be a search function so that any information was easily available. Again they wanted a moderator to oversee the sites activities. They wished for lots of pictures and videos and no long texts. They wanted to be part of the site by publishing pictures and videos themselves. They suggested that the site could have like a monthly changing health theme and the latest news about health and wellbeing. There also should be links to other useful sites, but not too many. The site should have support for different languages and it should be available also on mobile and tablet devices.

With the results of the workshops and other research done by the whole project group we had some initial tools to start building our website [www.arctichildren.com](http://www.arctichildren.com).

## Web page technical construction

We started with choosing the platform on which we would build the website. We looked at different options and decided that we would use the same Wordpress.org platform as we had used in the previous national ArctiChildren project. This way we could easily export the theme, materials and forums from [www.arctichildren.fi](http://www.arctichildren.fi) website directly to the new website what would be found under the domain [www.arctichildren.com](http://www.arctichildren.com).

WordPress was the most popular blogging platform in 2012 (Colao 2012) and we have had good experiences in other projects using the same platform. WordPress has thousands of readymade themes, widgets and different layouts and it is very user friendly. All these features make it fairly easy to customize one's website.

At first the former Kemi-Tornio University of Applied Sciences was responsible for the technical maintenance of the website, but in the fall of 2012 we decided to move it to our own servers in Rovaniemi and the pLAB (Software Engineering Laboratory). In this way it was easier to maintain the site and make alterations whenever needed.

The website's domain ([www.arctichildren.com](http://www.arctichildren.com)) was chosen pretty early on. It was simple and most importantly, available. The website's domain and the DNS hosting was bought from a company called Zoner. Zoner had been used in many different projects and they had a good reputation in the market. All other technical maintenance was done by ourselves at Lapland UAS.



Besides a coder we had a graphic designer (Riku Tuusa, University of Lapland) doing most of the technical work. Mr. Tuusa designed the website's visual appearance and layout together with the project group. The basic layout consists of: homepage, news, forum, materials, schools, and contact pages. These pages appear on the menu located on top of the page. The page itself is divided in to two separate sections. The left hand side shows the respective information on each page and the right hand side is dedicated to social media. The social media section has integrations from Facebook, Youtube and possibly Twitter showing their correspondents feed without leaving the site. Also on the social media section we show our latest pictures and presentations (for example PowerPoints). This way we want to keep the user engaged in our site and not leave to see what is happening for example in our Facebook page.

The social media section is visible in all pages. The homepage shows the latest news (5 of the latest) in a side scrolling element. On the homepage there is also a short introduction about the site. The news section naturally shows the news in a chronological order. The forum is used to have delayed discussion with the pilot school pupils and students from the Lapland UAS. Materials is a place to show the material the students and pupils have done with the project. The school section shows a map of the schools and a link to their homepage. The contact page shows a contact form and email addresses

The website has been in a constant development process during the project and we have been updating the visual layout several times as well some the key functions, for example the materials

page. Updating the website is an ongoing process and we have to continue the work even after the project has ended.

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A cartoon illustration of a person with curly brown hair, wearing a pink long-sleeved shirt and brown pants. The person is holding a large white rectangular sign with black text above their head. The background is a light blue sky with white clouds. The sign contains the text 'CHAPTER II: THEORETICAL REVIEW' in bold, black, uppercase letters.

**CHAPTER II:  
THEORETICAL  
REVIEW**



# eHealth and eLearning Go Hand in Hand

We start this article with a background on health and learning by presenting our own and other researchers' work in the area. After this we give a brief description of empowerment as a tool in health promotion before we give a theoretical perspective on interactive technology. Finally, we present some possibilities for the future use of information and communication technology (ICT) to increase health as well as learning in schoolchildren.

## Health and learning connection

In the 1980's additions were made to the concept of health at the first International Conference on Health Promotion meeting in Ottawa (WHO 1986). "Health... is seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities" (p.1). These resources and capabilities can very much affect the ability to learn. Developing conditions of students' learning and well-being in schools is important (Ahonen 2010; Bergmark & Kostenius 2012). Poor

physical and psychological health in schoolchildren affects the educational attainment negatively (Chomitz et al. 2009).

According to Wenger (1998), learning can be viewed as intertwined individual and social processes of making meaning. Similarly, we will focus on learning on a general level and not primarily on the objective academic achievement; rather, the focus will be on students' subjective emotional and social processes and how these contribute to learning. This means that the relationship between human beings and between human beings and the context of school is interdependent, which leads to a view of students as being active participants in school (Backman et al. 2012a). From this perspective, it seems that learning and well-being as meaning-making processes among students in school are important to joint study, which is also emphasized by Eriksson (2012).

We have, in earlier studies as part of the ArctiChildren project, similar to other researchers found that when children felt excluded from social relations or when being bullied their health and wellbeing decreased as did their ability to learn (Kostenius & Öhring 2008; Samdal, Nutbeam, Wold & Kannas 1998). Decker, Dona, and

Christenson (2007) echo the importance of good relations between students and teachers and point out that good relations are important for what students produce in school. They emphasize the importance not only of students acquiring knowledge but also their cooperation with others and their engagement in the whole learning situation.

Stress is a limiting factor for academic achievement (Rothon et al. 2009). Similarly, Westling Allodi (2002) argues that school can have a disempowering effect on students that fail to reach the expected achievement level.

According to Lindberg and Swanberg (2006), schoolchildren's relations to teachers and peers can be protective factors for their subjective well-being. In addition to this, we found that the experience of health and well-being increase when students are being met as a "we" (Kostenius & Öhrling 2006). In one of our research teams we conducted a study which indicated that the schoolchildren found aspects within, as well as beyond, the classroom relevant for a positive school environment (Backman et al. 2012a). For instance, outings were considered relevant for building and maintaining friendships and for learning processes. Moreover, the schoolchildren discussed formal and informal conditions and considered social as well as structural

circumstances important for having a good time in school. The relation between learning and well-being was also emphasized by the schoolchildren in this study.

## **Empowered child perspective in health promotion**

Empowerment is a key component in any health promoting effort (WHO 1986). According to Melander-Wikman (2007) empowerment can be defined in a number of ways as a term, a construct, a concept, as well as a process including not only an individual and group level but organizational and community levels as well. Booth et al. (1991, 31) concluded that "power can be healthy" and this power enables human beings to be actively participating in their own life. Empowerment has no age limit, however, using an empowered child perspective starts with adhering to the understanding that children are capable and able to influence their own lives (Kostenius 2008). Curtin and Murtagh (2007, 72) state "...we have to adopt an empowerment discourse of childhood and then actively listen to and act on what children and young people are truly saying". Making possible a participatory process together with the children about their lived experiences, letting their voices be heard can in itself be empowering, although Valaitis (2002) found the empowering of children much more complex than just letting their voices be heard. After years of experience with empowerment inspired research and practice we would like to echo Alard (1996) who argues that

young people are empowered rather than exploited if there is a genuine desire to listen to what they have to say and if they want to be involved in the first place by feeling a concern with the issue at hand (Hertting & Kostenius 2012; Backman et al. 2012a; Backman et al. 2012b; Kostenius 2011). In other words being an adult that is finding children trustworthy, capable and competent in helping them verbalizes their opinions, helps the empowering process (Alard 1996; Kostenius 2008).

We view empowerment, bringing both individual and social aspects together, like Melander-Wikman (2007) who argue that empowerment is a process focusing on human rights and the capacity to actively participate in and influence our own lives. Although Berry, Murphy and Coser (2014) stress that the inclusion and implementation of a meaningful empowerment agenda in health promotion is difficult, we have done our best to carefully choose methods to insure the empowerment process. According to Levin-Zamir, Lemish and Gofin (2011) it is important to promote adolescents' critical thinking, reasoned choices and active participation in promoting their own health, which we have aimed to do and succeeded with to some extent (see for example Bergmark & Kostenius 2012; Kostenius 2011; Kostenius 2013; Lindqvist, Kostenius & Gard 2014; Lindqvist et al. 2014). Nitsch and colleagues (2013, 52) make visible a dimension of empowerment that is often forgotten in participatory research and which refers to the decision making process including for example power to make decisions and participate in evaluations. They go on to state "Ideally, participation is fostered throughout the whole evaluation process as it is about

sharing knowledge and building the evaluation skills of all participants".

## **eLearning from a sociocultural perspective**

Emphasizing the concept of ICT indicates that it is not merely technology but also interactions between human beings and between human beings and technology. This implies that a social theory of action is required in order to understand these interactions. Moreover, we find the context for interaction of importance which leads us to a sociocultural perspective of interaction.

According to Säljö (2005) learning in a sociocultural perspective derives from all human activities, not only in teaching and learning situations. It is connected to how we as humans communicate with each other and how communication is affected by our surroundings. A fundamental concept is the artifact. Artifacts are the physical tools present in our world (such as ICT tools). Our environments are mainly human creations and much of our knowledge gained throughout history is embedded in the artifacts. It means that people are born into and develop in interaction with other people, and our ways to think, act and make interpretations are formed by the basis of the context.

Wenger (1998) says that learning is a social phenomenon based on communication and participation in social practices in the world which he refers to as communities of practice. The communities of practice are everywhere, such as the school or the sport club, and are thus an integral part of our daily

lives. So, it is a learning perspective focused on social relations of everyday life in communities where people meet and share each other's lives, develop these communities (such as the school) in negotiation and communication processes with each other and with ICT tools (for example computers). This is supported by Bijker and by Oliver (in Ekberg 2012), who argue that technology in itself has no meaning, but that it gets its meaning through meaning making activities in a social context. We find this perspective relevant because it grasps the whole pedagogical situation – people, communication and interactive technology.

eLearning is a broad concept including all forms of educational technology in teaching and learning processes. The concept derives from United States in the 1960's and it involves technological solutions, which enhance learning and make it more effective. Initially, eLearning was connected to distance education, but the concept has broadened and it involves also learning activities based on technology in face to face education (Martinez-Torres, Toral & Barrero 2011). Since the concept is closely connected to interactive technology, we find it relevant to use eLearning and sociocultural perspectives of action and learning jointly.

## **Lessons learned for the future – combining eHealth and eLearning**

According to Eriksson (2012) two research fields of health and learning have met, as we have knowledge of how

learning is linked to health and health behavior. He points out that the two research fields have to be met in studies that deal with the school as an adaptive dynamical system. As we see it, the next step is to add the dimension of ICT combining eHealth and eLearning, as these areas are under development both in practice and research within health sciences as well as in the field of education (cf. Rapoff 2013; Henderson, Law, Palermo & Eccleston 2012; Ekberg 2012).

Based on our experiences with research and development work conducted in the ArctiChildren InNet project (2012–2015) we are confident in saying that ICT can be a tool to enhance health and learning in schoolchildren (Lindqvist, Kostenius & Gard 2012; Lindqvist, Kostenius & Gard 2014; Lindqvist, Mikaelsson, Westerberg, Gard & Kostenius 2014). At the same time as there are risks in the use of computers and mobile phones there are equally many possibilities. On the one hand there is an increased inactivity when sitting in front of the computer, yet, on the other hand, the computer can offer health promoting solutions found for example in the interactive ArctiChildren InNet portal where children can communicate with health care professionals. On the one hand, mobile phones can interrupt real life encounters but, on the other hand, they can offer a motivational tool by social engagement to increase physical activity (read more in the article *Active@ school* in this book). Therefore, we argue that identifying strengths and positive assets offers a chance to reformulate the current situation and find new ways to change, in other words seeing the glass half full instead of half empty (Ghaye 2008 et al.; Bergmark & Kostenius 2009).




Using this appreciative process is an enormous potential for using interactive technology to increase health and learning in schoolchildren.

One challenge in the age of constantly emerging technologies is to create and develop positive learning communities based on ICT. As shown in earlier studies relations between teachers and schoolchildren may change when ICT enters the classroom. Children may become teachers as they are more acquainted with interactive technology than the adults (Alerby & Hertting 2011). With a fruitful combination between teachers' pedagogical skills and schoolchildren's ICT skills positive learning communities, where empowerment is a natural approach, could be developed (read more in the chapter We did it together in this book). Seeing processes of e-Health and e-Learning development as a whole, including people, communication and ICT tools are very important, as studies show that technological questions risk overshadowing human needs (Samuelsson 2014).

We would like to emphasize the importance of including schoolchildren in the process, asking them to offer ideas (Lindqvist, Kostenius & Gard 2012). In one of our studies about leisure activities we recognize that some of the schoolchildren had the capability to find a healthy balance between schoolwork, friends, rest and engagement in leisure activities (Hertting & Kostenius 2012). Therefore, we advocate a distribution of power which includes schoolchildren's participation from start to finish in all research and development projects. One example of distributing the power throughout the ArctiChildren InNet

project was including the schoolchildren in the intervention process. This can be learned more about in the article "Active@school – Promoting Physical Activity with Interactive Technology by Empowering Schoolchildren" in this book (see also Kostenius 2008). Although we can conclude, looking at all studies done, that we have succeeded with the empowerment agenda in various degrees. However, we are certain that empowering practices are enabling children to take an active part in shaping their own lives which is a basic requirement to be able to achieve lasting effects in our intended efforts to promote health and learning in school. By letting schoolchildren reflect on how interactive technology can support their wellbeing and make learning easier our health promoting efforts will yield sustainable change (Kostenius & Hertting, accepted for publication).

The Swedish curriculum supports the use and development of ICT in schools, as well as promoting health and well-being (The Swedish National Agency for Education 2010). However, it is crucial to also cooperate with principals, school administrations and politicians to form a supportive environment in schools which is also supported by Grieg Viig and Wold (2005). Our experience is that the school organizations can be supportive or become a hindrance for positive change. We have chosen to work with school leaders who have a positive attitude towards combining efforts to promote both health and learning with ICT tools with a hope that these will serve as good examples for other educational organizations aiming to grow.

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- Health and learning are each other's prerequisites in health promotion efforts.
  - Using an appreciative process may help interactive technology to increase health and learning in schoolchildren.
  - Supportive environment including support from principals, school administrations and politicians is crucial for sustainable change.
  - Including schoolchildren in activities developing methods to use interactive technology for promoting health is a fruitful avenue, increasing empowerment and strengthening sustainability.
  - Seeing processes of eHealth and eLearning as parts of a sociocultural context, including people, communication and interactive technology, enhances possibilities for holistic approaches in developing efforts.

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# eHealth in a School Environment: Problems and Ways of Solution Promoting Health

This article gives an overview of the possibilities of development and introduction of information technologies by establishing a systematic, innovative eHealth model in the educational sphere of modern schools to promote health.

## **Legal framework of the eHealth model introduction into educational institutions**

The system of education in Russia is defined, first of all, by the Constitution of the Russian Federation (1993, Art.43, am. 2014), which contains the basic principles of education system organization. One of these principles defines that the Russian Federation sets up obligatory federal state educational standards and supports different forms of education.

The legal framework of the federal state educational standards is defined by the law “On Education of the Russian Federation” (2013), which claims that a model program is developed on the basis of the standards, and that the educational program of an organization,

implementing educational activities, is developed according to the standards and taking into account the model program. In fact, the federal state educational standards become the document of direct action for an educational institution, more important than a sample program. (Federal Law on Education in the Russian Federation 2013.)

For the first time the new generation of educational standards puts a qualitatively new task within the theme of education and health for the Russian society. On the one hand, the state educational standards provide for an active introduction of new information technologies to the process of schooling. On the other hand, we must not only ensure the health of students, but create conditions for safe and comfortable education.

However, IT is not the only, and not the main reason to introduce the eHealth model, which useful for teachers, parents and children themselves, and which should become a mandatory element in the information environment of the educational process in the nearest future

in order to solve the problem for the organization of health-promotion activities of schoolchildren. Our task will also be to promote self confidence in school children and to give them tools to manage their own health and to use their personal resources.

In other countries, including the United States and the European Union, the new concept of electronic health (eHealth) has been actively used in the last decade. To date, there is no single universally accepted interpretation of the term e-Health. As defined by the World Health Organization in 2005, eHealth is the use of IT and information systems for a continuous remote control (monitoring) over the state of the human health; association of individuals or organizations interested in a common network for more effective delivery of health care or solutions to some specific problems related to the health of patients. (eHealth on health service 2010.)

We believe that in the present day conditions the concept of eHealth can be extended by implementing proven technologies in new sectors of professional activity, for example, in the educational sphere.

A significant step in the development of the educational content of the Russian internet was the creation of a system of federal educational portals in 2002-2004, which included a core portal "Russian Education" and thematic portals (on areas of knowledge and educational activities). The need to develop a common educational information environment is determined by the fundamental changes in the state policy of the Russian Federation in the field of education, the adoption of the Federal Program for the Development of Education and the

National Doctrine of Education, globalization of processes of the information society, and the priority of education informatization.

The joint development of the cross-border eHealth model within the project ArctiChildren InNet promotes development of new approaches to update information communication technologies in educational institutions, directed at managing and preserving health of schoolchildren in the Barents region.

### **Development of the common educational information environment in schools**

Work on the implementation of this ambitious project was carried out within the framework of the Federal Target Program "Development of a common educational information environment" (2001-2005) (Kondratjev 2003), and the result was the creation of a dozen of educational web portals, at which thousands of educational resources for various purposes were first collected and systematized. In this case, the solution of the problem of creating a unified educational environment for all stakeholders of the educational process is a priority for the development of education quality and improvement of the psychosocial well-being of schoolchildren.





Currently, information and communication technology is actively developing at the national educational institutions, the system of the federal educational portal offers a country-wide school educational network - "Dnevnik.ru." The purpose of the internet project is the creation of a common information and education network for teachers, students and their parents. "Dnevnik.ru" provides schools with a range of free services, including:

- communication services (web pages of schools and individual users, messaging)
- study services (timetable, assessments, homework and personal calendar)
- a student E-diary
- an electronic journal
- a digital library
- a designer of the school site.

"Dnevnik.ru" was developed in cooperation with the Institute of Strategic Studies in Education of the Russian Academy of Education. It has the recommendation of the Plenipotentiary Representative of the President in the North-West Federal District. The project is non-profit and has been tested in schools in Russia. (Abramov, Derkacheva, Kuznetsova, Murasheva & Sigalov, 2008.)

## **Implementation of the eHealth Model in the Murmansk region**

The basis for the implementation of the eHealth model, developed within the project ArctiChildren InNet, may be the fact that Russian schools are already gradually moving to target new

technological systems in accordance with the new standards of information and computer technology - the Electronic School.

The Electronic School has new service capabilities to provide services to pupils, their parents and teachers. The most common forms are posted on the school website, electronic journals of progress and attendance of the students, information screens (advertisements, work schedules of school professionals, helpful tips, themed calendars, remote teaching tips, expert advice; cinema (watching movies, programs); scripts of a day off, holidays, birthdays, family festivals, etc. It is important to use the service opportunities of the schools correctly in order to introduce the eHealth model in the educational environment, using the new forms and filling them with an interesting content.

Creating the eHealth innovation space can help to optimize the educational and training process, which is formed in accordance with the concept of modernization of the general education content in the Russian Federation and the Federal Target Program "Development of common educational environment", which is based on innovative forms and methods of teaching activities using modern computer technology and networking opportunities (Concept of the unified... 2014).

Joint activities in the process of distance communication will bring together educators, parents and schoolchildren on the internet to solve the main goal - to create conditions for improving the psychosocial health and well-being of schoolchildren.

In our view, the eHealth program implies a new form of organizing the activity of the educational institution with the schoolchildren's families to build safe, healthy and comfortable living environment for children. The program can serve as a concrete way of introducing innovative technologies in the field of education that meet the objectives of the state educational policy of the Russian Federation and the Murmansk region. The media - program for educational institutions "eHealth in the school society" involves the creation of an information environment for parents, teachers and children.

For this purpose, we defined the following main directions of cooperation between the teachers of the Murmansk State Humanities University with the educational institutions of Murmansk and the Murmansk region in the providing of scientific and technical assistance for the establishment and implementation of the eHealth model:

1. develop the content and structural parts of the modules in cooperation with other participants of the project ArctiChildren InNet ENPI - Empowering School eHealth Model in the Barents Region, taking into consideration the experience gained in the practice of modern schools and research capacity to be used in the practice of higher education institutions
2. render diversified assistance and methodological support to teachers and specialists of schools in planning and developing the content of the modules of the eHealth program, including the use of innovative technologies

3. provide advice to teachers and school specialists, parents and pupils on the main issues of the content and methodology
4. assist the establishment of the electronic layout to work on the internet within the project eHealth in the school society
5. provide the expert-analytical work on the selection of the content and other material in the creation and implementation of modules, evaluation of implementation of modules based on a survey conducted by the project participants (teachers, parents, schoolchildren) and monitoring the implementation of the eHealth project.

## Conclusion

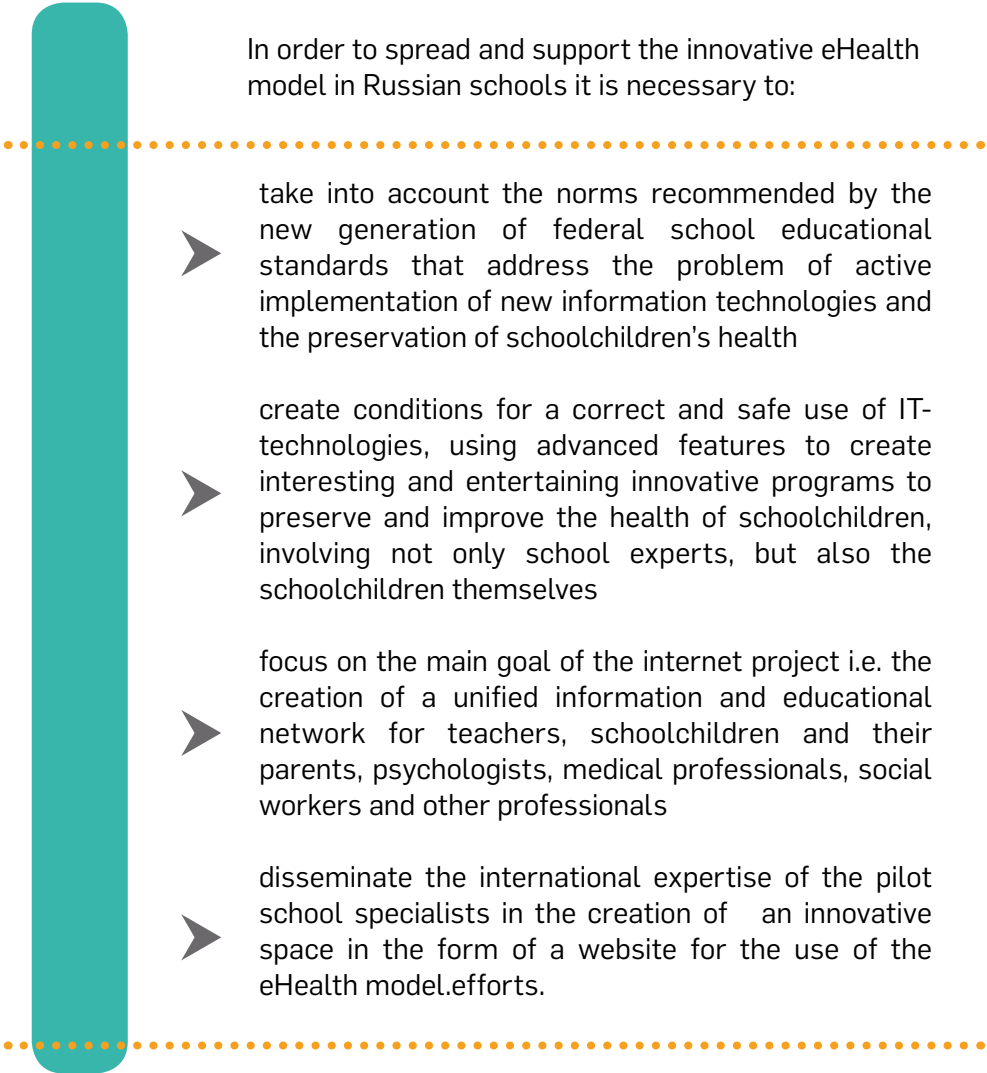
The target of the eHealth media-program for educational institutions "eHealth in the school society" involves the creation of an information environment for parents, teachers, children, psychologists, medical professionals, social workers and other professionals.

Materials, developed by specialists of the pilot schools within the project ArctiChildren InNet, are placed in the project web-site <http://www.arctichildren.com>. The positive experiences from using the eHealth model, acquired by specialists from the pilot schools of the project, can be used as a recommendation for other similar events, making techniques of expert assessments.

An important result of the project is the development and testing techniques

of using the school web-sites to discuss topical issues of modern students via web - technology. The informational content of the school sites with interesting issues contributes to the promotion of

educational web resources in general, audience accumulation, increase in attendance statistics and awareness in order to promote health and wellbeing of schoolchildren in the Murmansk region.



In order to spread and support the innovative eHealth model in Russian schools it is necessary to:

- take into account the norms recommended by the new generation of federal school educational standards that address the problem of active implementation of new information technologies and the preservation of schoolchildren's health
- create conditions for a correct and safe use of IT-technologies, using advanced features to create interesting and entertaining innovative programs to preserve and improve the health of schoolchildren, involving not only school experts, but also the schoolchildren themselves
- focus on the main goal of the internet project i.e. the creation of a unified information and educational network for teachers, schoolchildren and their parents, psychologists, medical professionals, social workers and other professionals
- disseminate the international expertise of the pilot school specialists in the creation of an innovative space in the form of a website for the use of the eHealth model.efforts.

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# Adolescents, ICT and Social Environments



The purpose of this article is to describe how online environments are important to children and adolescents in their everyday lives. They use it for various purposes, but mainly to social interaction, playing, expressing themselves, and learning. The ArctiChildren inNet project has developed new innovative online working methods and through the participation of school-aged children the importance of social relationships and networks can be regarded to promote social capital and psycho-social wellbeing.

## The internet is common

Adolescence and ICT (the use of information and communication technologies) can be easily linked together. The use of information and communication technologies (ICT) has been expanding greatly among adolescents and nowadays even among younger children. For many adolescents the internet is also the main source of information, they use it for accruing information search covering any topic anytime, anywhere which supports schoolwork, and homework, and also

entertainment. Most children start using online environments at the age of 5–6 or even younger. Availability and access to using information technology has become a popular topic both nationally and internationally.

Among children, and adolescents the use of ICT and social media is exceptionally common and high. Daily or near-daily use of the internet is particularly widespread among young people. In Europe and America more than 90% of the children aged 9–17 use the internet, and the number of daily users is increasing. In Finland 99% of all homes have an internet access, and the use starts at an early age. The use of online social networks has also increased in the European Union but some social groups included a part of the adolescents differ in the extent of access skills and meanings they associate to new technology. The generation gap seems to be noticeable and age is a determining factor in the frequency of the internet use, but the status of young people is also relevant, and the internet is widely used in schools and universities as a learning tool to access information. (Eurostat 2009, 137–151; Kohvacka 2010; Madden, Lenhart, Duggan, Cortesi & Gasser 2013;

Media use in the European Union 2011, 12; Suoninen 2014, 12.)

The latest Statistics Finland Time Use Survey (6.5.2014) clarifies that children and adolescents spend a lot of time online and alone. In 2006 the main purposes for which children used the internet were emailing, instant messaging and playing games. In 1999-2000 the time spent with the computer among children (aged 10-14) took ten percent of the whole time spent alone and in 2009-2010 the proportion had risen to 21%. Young people spend 30 percent of their time being alone by using a computer. Ten years earlier the proportion was only 10%. Especially among adolescents (age 15-19) using a computer is also as a secondary activity while doing other things. Watching TV, playing video and computer games, searching information (also health related), using electronic devices and utilizing the diverse possibilities of the internet constitute a significant part of children's and adolescent's leisure time. Furthermore, most of the time used for social capital activities was spent on socializing which suggests that the computer use can be very socially oriented (Statistics Finland Time Use Survey 6.5. 2014; Pääkkönen 2010, 8; Pääkkönen & Hanifi 2014).

According to Tuukkanen (2014, 10) virtual worlds can be seen as arenas for social life and action because the children participate in online environments mainly to socialize, communicate with other people and express themselves, also to play, create virtual personas, perform commercial activities, participate in and organize community activities. For many adolescents the internet is also the main source of information, they use it for accruing information search covering

any topic anytime, anywhere, which supports schoolwork and homework and also entertainment. Using the internet for school work (85%) and playing games (83%) are very popular activities among European children (Livingstone, Haddon, Görzig & Ólafsson 2011).

Nevertheless many young people live in a highly advanced society of new technology and many technological inventions and stabilization of ICT have become an integral part of the adolescents' lives modifying their social life and relationships in various ways, because through the internet adolescents can diversify their social networks beyond traditional settings (family, school, neighborhood, activities) and actuate also online friendship formation which is beyond barriers of distance, ethnicity, age, gender and language. (Mesch & Talmud 2010, 4-10.)

## **Endless opportunities for socialization**

Adolescence acts as a transition from childhood to adulthood and this crucial period is characterized by both rapid physiological, psychological changes and social transformation, as well as a need to expand one's social circles. This phase can be regarded as a socially changing construction with adolescent's own active agency and a possibility to set goals and choose various developmental environments. Typically the goals are related to social relationships, family and so forth connected to their mental wellbeing. Adolescents start actively constructing and defining their own lives, environments and own societies by

developing their life expectations, world views and behaviors. (Brown 1990, 171–196; Mesch & Talmud 2010, 4; Nurmi et al. 2014, 142–155.)

During this phase an adolescent spends time mainly in two social environments, in the family and with peers. In general the influence of parents on the adolescent's behavior, decisions and living is still quite strong. The reciprocity of autonomy and interaction increases in relationship between parents and adolescents. Adolescents pursue more independence and spend more time with their peers. Often during and after school hours they spend time in virtual worlds with the target to socialize with friends and learn. Similarly, by consuming media the adolescents also exercise autonomy. (Collins, Maccoby, Steinberg, Hetherington & Bornstein 2000, 56; Nurmi et al. 2014, 148; Tuukkanen, Wilska, Iqbal & Kankaanranta 2013, 59–73.)

For adolescents whose social circles are expanding, the formation and maintenance of strong interpersonal bonds and relationships is a fundamental need and critical for healthy development (Baumeister & Leary 1995, 497–529). This need for identity formation, social development and affiliation is universal. When talking about adolescents it could be referred to the society of the 'same aged', which indicates to this developmental task of strengthening social skills when peer relationships assume greater importance in everyday life of an adolescent. The role of a peer is to act as an emotional confidant, as a model of behavior and attitudes, provide advice and guidance (Crosnoe, Cavanagh & Elder 2003, 331–352; Giordano 2003, 257–281). Friendship is a special type of

relationship, which is characterized by closeness and intimacy, trust and commitment, which are elements also particular in social capital. Virtual worlds with limitless possibilities offer arenas to spend some time with friends, bond with new relationships and interact with people (Tuukkanen, Wilska, Iqbal & Kankaanranta 2013, 59–73).

Relationship formation can be based on two perspectives, social needs and social compensation. Social need approach focuses on formation of relationships to meet compelling needs for intimacy, self-validation and companionship, which is a requirement very high among adolescents. Virtual communities can be regarded as such social networks, which link individuals from different parts of the world. Social compensation perspective focuses on the quality of relationships between parents and adolescents as a motivation for friendship formation. This refers to the changes in parent-child relationships with the desire to enlarge the adolescent's sense of autonomy and independence. (Mesch & Talmud 2006, 29–44.)

The emergence of ICT with its communication promoting characteristics and various social



networks can have a great influence on the adolescent's identity management, personal communities and friendship formation. The internet and the cell phones can be called as 'friendship driven' technologies. They obtain new dimensions for the users, when peers are always reachable, providing social support, critical to social capital, and person-to-person contact and various group activities can be conducted online and face to face. (Nurmi et al. 2014, 177.)

Computer mediated communication facilitates maintenance of social ties and formation of new ones, coordinating gatherings, gaining social support, sensing fellowship. Developing social skills and norms and being involved in social and leisure activities enables development of one's social skills, people skills and through versatile social interaction adolescents internalize norms. (Mesch & Talmud 2010, 20; Larson & Verma 1999, 701-736; Laine 2005, 144-146.)

When adolescents use ICT, various virtual worlds and online environments, it is often for communication purposes. Adolescents interact mostly with close friends, but the internet helps them to identify individuals who are outside their immediate community. Online communication can be characterized by anonymity, which allows adolescents to find others who share their interests, same grievances, and they search for support from them. Adolescent's online relations are often frequent and durable and they are likely to be maintained and strengthened through online communication. Their relational quality can be estimated to be quite similar or complement to face-to-face interaction rather than facilitating strong bonds

between individuals, and they provide powerful networking tools that also adolescents can turn to when needed. (Earl 2011, 2; Mesch and Talmud 2010, 148.)

In a sense the internet can complement offline social communication activities, and it lets adolescents experience a sense of freedom, power trust and explore their identity. This may imply that the use of social network sites and frequent interaction with friends can be beneficial for the user's self-esteem and life satisfaction. By supporting information exchange and interpersonal communication the internet links individuals together and promotes creating new acquaintances - bridging different social groups together. (Maczewski 2002, 111-120; Mesch & Talmud 2010, 20-44.)

## **Online environments bear risks and opportunities**

The internet offers new ways to spend leisure time, and virtual worlds can help to overcome the limitations of 'real life'. This freedom bears also many risks and negative sides can be faced, because in the virtual worlds there is also misbehavior and disruption. The public, parents and teachers are often concerned about the adolescents being more exposed to the negative content of the internet, it may distract children from other developmentally important activities, and have an isolating effect on them. (Mesch & Talmud 2010, 56.) It has been noted that there is a risk of overuse, high media exposure, which one needs to be aware of. It might increase the risk of




psychosocial symptoms as aggression, isolation, difficulties of concentration and behavioral regulation or even promote antisocial behavior. (Paavonen et al. 2011, 1563–1570.) Despite the ambivalent discussion on the internet and concern for negative effects of media use, most internet use is social and supporting social capital aspects. It facilitates access to opportunities, knowledge and resources and expands one's view on life and forms a paramount source for creating possibilities to socializing, bonding and sharing a common culture. (Kinder 1991.)

By using ICT children and adolescents get tools unknown to previous generations. The internet can be regarded as changing mentalities and relations, because young people increasingly embrace cyber friendships and relationships and make extensive use of internet social networks by actively experimenting, searching for information as well as acting as innovative co-producers of the internet content. Online environments have become an integral part of the peer-to-peer culture, youth culture and the concepts of net generation and digital generation have been launched. These concepts refer to children and adolescents, pioneers of the information society, who have grown up with the internet, immersed in these technologies, using digital space for social interaction and identity expression. The internet is a natural, essential component in their lives and there they can express themselves, participate and also learn many civic skills. In the virtual world children and adolescents are public actors; they participate and play in a social community and learn new skills. Many of them possess such IT knowledge

and skills which support the creation of a culture in a digital space, learning by experience, as well as socialization, empowering and participation elements. The internet can promote participation, also online participation of children and adolescents, which refers to all kinds of activities in online environments. (Mesch & Talmud 2010; Tuukkanen 2014, 26–33.)

According to Huysman and Wulf (2004, 138) social capital can be linked to network ties providing mutual support, shared language, shared norms, social trust and sense of mutual obligation from which people can derive value. Bonding and bridging to the world starts in a family and community but through multimodality possibilities bridging obtains totally new forms and extended networking possibilities. The internet can serve as a social arena of many shared activities, and virtual worlds are important to children and adolescents but they do not constitute or represent the whole world. The internet offers more possibilities to explore the outside world virtually. (Eurostat 2009, 137–151, Tuukkanen, Wilska, Iqbal & Kankaanranta 2013, 59–73.)



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- Stabilization of ICT and the internet have become an integral part of the lives of children and adolescents
  - Adolescents' developmental phase with social needs promotes bonding in the internet
  - The virtual world represents an arena for socialization, play and participation
  - The internet and online environments complement offline social communication activities and promote bridging
  - The awareness of risks and opportunities of virtual worlds and online environments

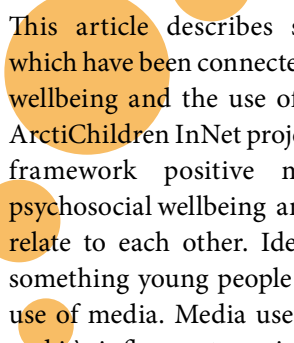
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# Social Capital and Psychosocial Health and Wellbeing in Youth



This article describes some concepts which have been connected to health and wellbeing and the use of media. In the ArctiChildren InNet project's theoretical framework positive mental health, psychosocial wellbeing and social capital relate to each other. Identity capital is something young people develop with a use of media. Media use in adolescence and its influence to social capital, health and wellbeing is in focus in this article.

## Terms used to describe social determinants of health

Social determinants of health (Viner et al. 2012, 1641–1642) are the circumstances in which people live in, the economic, political, social, environmental, and cultural conditions that affect the health of these individuals. Social stratification status, inequalities between individuals within a social system are factors influencing health in adolescence. Structural determinants, fundamental structures of the nation state that generate

social stratification, such as national wealth, income inequality, educational status, sexual or gender norms, or ethnic group are terms used among social determinants of health.

Proximal or intermediate determinants are the circumstances of a daily life, from the quality of family environment and peer relationships, through availability of food, housing, and recreation, to access to education. Proximal determinants are generated by the social stratification resulting from structural determinants, but are also generated through cultural, religious, and community factors. Proximal determinants establish individual differences in exposure and vulnerability to factors that compromise health. (Viner et al. 2012, 1641–1642.)

School environment In addition to access to education functions as a structural determinant. There is strong evidence from high-income countries that stronger connection of young people and their parents with their school, together with aspects of school environment such as leadership and safety, positively affect many health

**IN HEALTH PROMOTION, THE ARCTIC CHILDREN INNET PROJECT ALSO CONCENTRATES IN PSYCHOSOCIAL HEALTH AND WELLBEING OF CHILDREN AND ADOLESCENTS IN 'SCHOOL EHEALTH PROMOTION'.**

outcomes directly. (Viner et al. 2012, 1641–1643.) There is also evidence that connections within school protect against a wide range of health risk behaviors in middle-income and low-income countries. Programs that improve secondary school environment and connectedness are the most promising large-scale interventions for improving health outcomes in adolescence, and need further study in resource-poor settings. (Viner et al. 2012, 1643–1646.) In a same way Dr. Kerry McPherson et al. (2013, 33.) describe that elements of family and community social capital have the potential to help support children to achieve better health and wellbeing. They say that the structural support of higher quality schools and neighbourhoods (e.g. schools/neighbourhoods high in cohesion, trust and safety) is associated with better health and wellbeing outcomes.

Positive mental health is a value in itself. The definitions of positive mental health are connected to life, self-esteem, vitality and mental resistance. Other characteristics are a good performance and the ability to create relationships. (Wahlbeck 2011.)

To define mental health as a holistic concept, mental health consists of individual factors and experiences, social

support and other interactions, social structures and cultural resources and values. From this point of view mental development can also be seen as a process, which includes predisposing, current, triggering and supporting factors, as well as penalties and conversions (Lavikainen 2004; Korkeila 2000).

According to Lehtinen (2008) in promotion of mental health, social capital is important. It consists, for instance involvement, education, mutual trust and social networks. Positive mental health is a major resource to individuals, families, communities as well as the nation. It will also contribute to an individual's ability to affect meaningful social networks, communities and society.

Society provides services and financial support for families to help them bring up their children. Prenatal clinics, child health clinics, day care, psychosocial pupil and student welfare, school health care and student health care as well as youth work contribute to averting a need for intervention by child welfare authorities. Often the personnel employed in the aforementioned functions are the first to notice any problems arising in families. (Brochures of the Ministry of Social Affairs and Health 2013.)

The foundation for good mental health is laid in the early years and society as a whole benefits from investing in children and families. Fortunately, the majority of young people in the EU enjoy good mental health. However, on average, one in every 5 children and adolescents suffers from developmental, emotional or behavioral problems and approximately 1/8 have a clinically diagnosed mental disorder. Unfortunately, new and applicant countries are facing larger problems in the field of children and adolescent mental health (CAMH), revealed by strikingly high rates of ill-mental health among children and young people. Therefore, there is a clear and urgent need for development of effective CAMH policies and practices in enlarged Europe and for a creative process of interaction and a proactive exchange of information between European countries. (Braddick, Carral, Jenkins & Jane-Llopis 2009.) In health promotion, the ArctiChildren InNet project also concentrates in psychosocial health and wellbeing of children and adolescents in 'School eHealth promotion'.

Social and biological determinants of health in adolescence (Viner et al. 2012) are CNS and pubertal development drive identity formation, new behaviors, and new causes of ill health. Adoption of behaviors (eg, smoking, drug misuse, and sex) that are risky to health yet might be normal within the adolescent social development. Life stage transitions and changes in personal and social responsibilities and relationships are entailed.

The World Development Report 2007 (2006) outlined five transitions for young people. Learning transition is from primary to secondary education, and

from secondary to higher education. Work transition is from education into workforce. Health transition means responsibility for own health. Family transition comes from family living to autonomy, early marriage, and parenthood. Citizenship transition leads to responsible citizenship. Experience of unequal chances related to sex, ethnic origin, education, employment, and socioeconomic status.

## Social capital

Definitions of social capital are coming from different disciplines such as public health, sociology and family social sciences. A feeling of belonging has been seen as central to a definition of a sense of community. It is generated from an emotional attachment to a particular place and a feeling of pride in place. Strong community ties were often associated with a biographical history, feeling at home in an area. (Ching-Hsing 2008,154.)

According to Helve and Bynner (2007), the first definition of social capital has begun on 1920 by Hanifan. Jacobs (McKenzie & Harpham 2006, 13) seems to make an explicit reference to the term social capital; "...networks are city's irreplaceable social capital".

Social capital has been considered as ecological. It would thus relate to groups or areas rather than individuals. According to that social capital is embodied in relationships between individuals, between groups and between groups and abstract bodies such as the state. (McKenzie & Harpham 2006, 13.)

Some researchers who analyze social capital at an individual level extend the concept to include trust, sense of belonging and civic engagement (McKenzie & Harpham 2006, 13). The most common definition used of social capital in health sciences originates from the political scientist Robert Putnam:

- community networks, voluntary, state, personal networks and density
- civic engagement, participation and use of civic networks
- local civic identity-sense of belonging, solidarity and equality with local community members
- reciprocity and norms of cooperation, a sense of obligation to help others and confidence in return of assistance
- trust in community (see McKenzie & Harpham 2006, 14).

Based on attributes definitions are like; social capital is intangible assets, including trust, personal networks and social norms of reciprocity, possessed by a society with a specific culture. Social capital is created by a unit of a society. A unit can benefit as the social capital increases; for example, the improvement of health, peace of mind. When the unit increases its sense of community or quality of community participation, this could increase its social capital. (Nguyen, Dao, Phung, Venkatesh & Berk 2013, 449–450.)

Social capital can be defined by the capacity of facilitating productive activity. A group with trustworthiness, a measure of social capital, has a higher chance to accomplish than another without that. Bourdieu (1986) defined social capital as the actual or potential resources a network of relationships

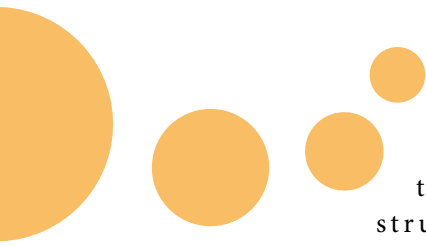
processes. Putnam (2000) divided social capital into bonding and bridging based on whether emotional support is provided, between family members and close friends (strong ties), or not, e.g. bridging. Generally social capital includes inclusion, social participation and social support.

Bourdieu's (according to Hyypä 2010, 9) conceptualization of the social capital is "the aggregate of the actual or potential resources, which are linked to position of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition". With the common language the social capital resembles what is meant by "contacts" (Hyypä 2010, 9).

### Types of social capital

The social capital networks have traditionally been classified by their strength as having weak ties or strong ties. Bonding social capital is based on network of the people who belong to a homogenous group of individuals sharing similar interests or characteristics. Those groups include family members and close friends. The ties are strong. (Hyypä 2010, 14–15; Bourdieu 1986.) Bridging social capital is based on networks with weak ties and open circles that facilitate connecting between groups. For example use of mass media and the internet belong to the category of structural dimension of social capital, networks. This phenomenon can be seen as bridging. (Hyypä 2010, 24.)





There are different types of social capital.

Social capital is multidimensional.

Social capital has three dimensions:

structural/cognitive, bonding/bridging and

horizontal/vertical. Structural

social capital includes the relationships,

networks, associations and institutions

that link together people and groups.

Cognitive social capital consists of values,

norms, reciprocity, altruism and civic

responsibility, sometimes called

'collective moral resources. Social capital

can be considered as bridging (inclusive)

or bonding (exclusive). Bonding social

capital is inward-focused and

characterized by homogeneity, strong

norms, loyalty and exclusivity. It is an

intra-group and relies on strong ties.

(McKenzie & Harpham 2006, 14-18.)

Bridging social capital is outward-

focused and it links different groups in

the society. An individual's social

networks reflect that person's bridging

social capital. Social capital can be split

in horizontal and vertical. Horizontal

social capital describes social capital

between people in a similar strata of

society. Vertical social capital describes

social capital that provides integration

between people in a different strata of

society. (McKenzie & Harpham 2006,

14-18.)

### Youth and social capital

The existence of social capital in the peer

groups formed by young people is one

distinctive feature of their experience.

Another comes from the advanced in

information and communications

technology (ICT) and various media. For

example the internet gives access to a

virtual world comprising an unlimited

range of groups, unconnected by

geographical proximity. It also supplies a

setting for experimentation with new

forms of relationships and new forms of

identity, if not multiple identities. (Helve

& Bynner 2007, 2.)

Young people make decisions

individually but these decisions are made

in social networks that draw from

different material and symbolic resources

available for young people.

### Identity capital

James Côté introduces the term identity

capital (Helve & Bynner 2007, 32), which

highlights agency and personal resources

over structures in late modern

surroundings such as universities.

The crux of social capital is networks,

and networks are equivalent to

interpersonal relationships. Relationships

can take many forms, such as reciprocal,

hierarchical, unilateral, bilateral or

multilateral structures. Relations always

involve identities. Interpersonal

affirmation and negation define the

parameters of and possibilities for

identity formation. Social capital

networks activate the relational aspects

of identity, allowing for the integration of

the individual into communities.

We can refer to identity capital

acquisition as representing an

individual's net assets at given point in

time in terms of 'who they are' (Helve &

Bynner 2007, 65). Identity capital

represents attributes associated with sets

of psycho-social skills, largely cognitive

in nature, that appear to be necessary for people to strategize and make decisions affecting their life courses.

Identity capital is an additional form of capital that includes 'a set of psychosocial skills or 'a set of strengths', which individuals or groups possess and use strategically in the way they present themselves to others. Identity capital refers to 'the varied resources deployable on an individual basis that represents how people most effectively define themselves and have others define them, in various contexts'. (Côté & Levine 2002, 142.)

Côté's conceptualization of identity capital is an extension of Bourdieu's framework. Identity capital is constructed through multiple social locations and differences, including class, gender, race and ethnicity, sexual orientation, socioeconomic status, life stage, nationality, religious affiliation, etc. Identity capital depends on the individual's perceived membership in social groups and the resources available in a particular social context. Thus, identity capital enables individuals to adjust to and navigate in different social environments. (Côté 1996; Helve & Bynner 2007.)

Identity capital comprises two types of resources. Tangible resources are assets that are 'socially visible' (Côté & Levine 2002, 144). Examples include academic credentials and group membership, which can act as 'passports' into various social and institutional arenas. Intangible resources include psychological abilities, such as the ability to critically reflect, negotiate, and understand another person's character. Both types of resources enable a person to manoeuvre through various social environments

(Côté 1996; 2005; Côté & Levine 2002). Identity capital is acquired by applying these resources through identity exchanges. In social interactions, a person achieves a common understanding with another person of what constitutes acceptable responses in a given situation. These 'mutual acceptances' allow the individual to gain identity capital and thereby increase the stock of 'who they are' (Côté & Levine 2002, 143). The performative nature of identity highlights the agency of individuals in acquiring identity capital (Bucholtz 2009).

Identity capital encompasses an individual's personality. An individual's sense of self 'facilitates free movement among diverse groups and contexts.; the ability to move, both concretely and abstractly, among groups and networks with diverse interests (a multiplexity); and the adaptive ability to combine diverse resources as the situation dictates'. (Côté & Levine 2002, 158-159.) Identity capital is the psychosocial ability to adapt, construct, strategize, and present one's identity depending on the social situation and to recognize and respond to social cues. The ability to speak multiple languages is an important component of identity capital; it allows an individual access to multiple identities (Liang 2006). Ethnic and personal identities are closely tied to language; however, retaining one's own language is not a sufficient condition of maintaining ethnicity (De Vries 1990). Furthermore, language relates to particular forms of communication and ways of thinking. Speaking multiple languages equips a person with communicative flexibility, that is, the 'ability to adapt strategies to the audience and to see the signs, both direct and indirect, so that the participants are able

to monitor and understand at least some of each other's meaning' (Gumperz & Cook-Gumperz 1982, 14). This ability to conduct face-to-face communication involves language as both a tangible and an intangible resource, in the ability to speak and in a way of thinking, respectively (Ho & Bauder 2012, 281–297).

## Connection between social capital and psychosocial health

Social capital can be embodied in bonds among family, friends and neighbours, in the workplace...even in Internet-based 'virtual' communities. Social capital is strongly linked to subjective wellbeing through many independent channels and in several different forms. (Helliwell & Putnam 2004, 1435.)

Communitarian social capital (Putnam 2000; Hyypä 2010) has been found in studies concerning health and social capital. The Putnamians argue that "social capital makes us smarter, healthier, safer, richer, and better able to govern adjust and stable democracy" (Hyypä 2010, 10)

The mental health of the population is strongly related to the characteristics of the community in which people live. Social, environmental and economic factors are all important determinants of mental health. People cannot achieve their fullest potential unless they are able to take control of those things which determine their well-being. According to the Ontario Healthy Communities Coalition a healthy community process involves: 1) Wide community participation; 2) Broad involvement of all

sectors of the community; 3) Local government commitment; and 4) Creation of healthy public policies. In a healthy community all sectors are inter-related, share their knowledge and expertise and work together. Furthermore, the civil society and the citizens participate in this healthy community process. A healthy community is continuously creating and improving those physical and social environments and expanding those community resources that enable people to mutually support each other in performing all the functions of life and in



developing to their maximum potential. (Lehtinen 2008.)

The amount of social capital is positively related to the level of health; thus, individuals with high levels of social capital are healthier than individuals with lower levels of social capital (Bolin, Lindgren, Lindström & Nysted 2003; Kawachi, Kenedy & Glass 1999). Social capital showed quite strong associations with self-rated health, but not such strong a linkage to objectively measured health (Hyypä 2010, 64). The majority of studies at the individual level and dealing with the cognitive dimension of social capital (consisting of social trust and reciprocity) have found the positive effect on mental health of adult persons (Hyypä 2010, 71).

Why is social capital important to mental health? Mental health reflects the fabric of society - the way in which communities are set up and people live (McKenzie & Harpham 2006, 11). There are research reports about connection of mental health and social capital areas with high levels of social capital having lower suicide rates, lower all-cause mortality and longer life expectancy. The special interest in mental health is twofold because 1) mental health is one of the top three causes of life-years lost to disability worldwide and 2) psychological mechanisms are likely to be the way in which social capital affects physical health. (McKenzie & Harpham 2006, 61.)

## **Use of media in adolescence, social capital and psychosocial health and wellbeing**

The most effective interventions are probably structural changes to improve access to education and employment for young people and to reduce the risk of transport-related injury. Other crucial aspects are ensuring participation of young people in policy and service development, and building capacity in personnel and data systems in adolescent health. (Viner et al. 2012.)

This review found significant evidence to suggest that greater time spent in online chat was associated with increased feelings of loneliness post social exclusion. Social networking sites were not found to facilitate strong bonds between individuals, but rather complement to face-to-face interaction. Social networking sites do potentially provide powerful networking tools that individuals can turn to in times of need. (Earl 2011, 449.)

In the age of the internet, social media genders, such as blogs, social networking sites and forums, have become a popular venue for people to gather, emerging a new form of social capital - digital social capital (Nguyen et al. 2013, 449). This concept has attracted considerable attention, such investigations into impact of the new media for the production of social capital.

The link between the use of the internet and social capital has also been explored. Wellman et al. (2001) found that internet could help to increase two forms of social capital; network capital and participatory capital. Shah, Kwak

and Holbert (2001, 450) found that an overall internet use was positively related to social capital, in terms of civic engagement and interpersonal trust. Especially asynchronous online communication, including e-mail and discussion groups, developed social support among cancer patients, resulting in positive health outcomes.

McKenzie and Harpham (2006, 17) say that socially excluded groups such as those suffering from mental illness may link with each other through support groups, which are increasingly based on telephone lines and the internet.

Social media provides rich sources of personal information and community interaction which can be linked to the aspect of mental health. The significance of online social capital is that it offers construction of automatic health care monitoring system, specially to monitor online mental well-being. (Nguyen et al. 2013, 449.)

In the book *Youth and Social Capital* (Helve & Bynner 2007, 200–201) the use of media (especially ICT) offers opportunities for identity work and experimentation that were unknown to previous generations. Thus the internet, whether through chat rooms or formal structures such as Wikipedia, supplies the means of extending friendship patterns and forms of bonding outside immediate geographical locations and into virtual world as well. The social capital 'trust' comes into the picture.

Self-esteem and psychological well-being are the two most common outcomes of interest in prior internet and SNS studies (Ahn 2011,1441). Valkenburg, Peter and Schouten (2006) find that within a sample of over 800 Dutch adolescents, SNS use is related to self-

esteem and psychological well-being. Adolescents who frequently use an SNS have more friends on the site and also more reactions on their profile (i.e., friends posted more comments and wall posts) (Ahn 2011, 1441). In addition, the researchers report that having more positive reactions on one's SNS profile is correlated with higher self-esteem, and higher self-esteem is significantly correlated with satisfaction with life. The results highlight the emerging sense that the use of SNS itself does not cause feelings of well-being. Rather, the positive or negative reactions that youth experience within the site are a key mechanism for their social development. Instead, they join because their friends are already members and have invited them to participate. The internet is no longer isolating, but connecting people. Self-disclosure also plays a large role in SNS effects on well-being. Specifically, researchers posit that when youth disclose and express more information about themselves the quality of their relationships improves. These positive interactions lead to an improved self-esteem and psychological well-being. (Valkenburg & Peter 2009a; 2009b; Ahn 2011, 1441–1442.)

- Psychosocial health and positive mental health are clearly connected to our sociocultural environment

Social system influence to health in adolescence. Social capital includes according to Putnam (1993) e.g. community networks, trust participation and use of civic networks, identity-sense of belonging, trust in community. Social capital is strongly linked to subjective wellbeing. (Helliwell & Putnam 2004) The amount of social capital is positively related to the level of health (Bolin et al. 2003; Kawachi et al. 1999). In addition McKenzie (2006, 11) argues that there are many researches, in which social capital and mental health have a connection. In high level of social capital areas there are lower suicide rates, lower all-cause mortalities and longer life expectancy.

- `Who they are` (Helve & Bynner 2007) Identity capital represents attributes associated with sets of psychosocial skills that appear to be necessary for people to strategize and make decisions affecting their life courses. It is also how people define themselves and the others define them, in various contexts (Côte & Levine 2002).

- Social media provides rich sources of personal and community interaction which can be linked to aspects of mental health. It creates a health care monitoring system, especially to monitor online mental well-being. In addition, the greater time spent in online chat was associated to increased feeling of loneliness. Social networking sites were not found to facilitate strong bonds between individuals, but complement to face to face interaction

- The use of internet could help to increase two forms of social capital, like network capital and participatory capital. Overall internet use was positively related to social capital, in terms of civic engagement and interpersonal trust. Those suffering from mental problems may link with each other through support groups. Use of media offers opportunities to identity work and experimentations. Adolescents who frequently use SNS have more friends on the site and more reactions on their profile. Having more positive reactions on one's profile is correlated to higher self-esteem, which correlates with higher satisfaction of life.

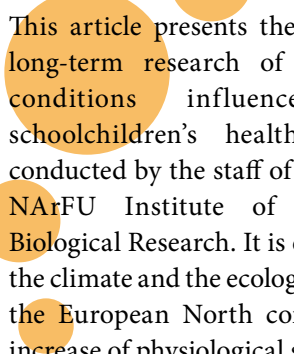
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# Health and Functional Development of Schoolchildren in the European North of Russia



This article presents the results of our long-term research of the Northern conditions influence on the schoolchildren's health which was conducted by the staff of the Institute of NArFU Institute of Medical and Biological Research. It is established that the climate and the ecologic conditions of the European North contribute to the increase of physiological systems activity during reducing their functional reserves. Therefore, a special responsibility in formation and maintaining of children's health lies on educational institutions.

Interaction between health status and quality of education improvement is recognized by teachers and is presented in the organization of activities to strengthen child health in the school environment. The key to effective work with a child is the effort of various specialists in achieving positive results - doctors, teachers, psychologists, family active and social environment of a child. Currently the using of telecommunication technologies in children's wellbeing becomes particular important. In the European North population areas are far away from each other, children have

limited access to specialized care. Therefore, using of different electronic systems (Internet, Teleconsulting, Telemedicine, etc.) in the North becomes particularly relevant. The article presents a model of remote consulting, functioning in the Arkhangelsk region of Russia.

## Introduction

Accounting for 8.1% of the Russian Federation's total area, the European North covers more than 1 million square kilometers. Its major area is taken up by Arkhangelsk Region (587.3 thousand sq.m). The climate of the European North can be described as cold, with violent fluctuations in atmospheric pressure; excessive humidity; higher heliospace activity; sharp disturbance in photoperiodicity; large-scale and frequently occurring disturbances in ionosphere; variability in Earth's magnetic field with its intensity increasing northwards. The area is also described by low mineralization of potable water, shortage of biologically

active elements and low availability of vitamins. Local environmental challenges constitute the direct aftermath of the anthropogenic impact being caused by pulp and paper, hydrolysis, heat engineering, military-industrial productions, etc. (Gribanov & Danilova 1994, 4–27.)

The successful exploitation of the North, which boasts huge economic potential, is closely linked with adaptation of the human body, the latter generally coming down to the analysis of the growing organisms' functional behaviour and performance in an unfavourable climate and environment.

## **The influence of climatic and ecological conditions of the European North on growing organisms**

The key feature of a child's organism consists in continuity of its morphological and functional development, which, in turn, is genetically predetermined and follows an individual programme. At the same time, there is strong dependence of the actual ontogenesis on environmental conditions. The North poses the entire formation of the child's functional systems to stricter requirements, especially when it comes to oxygen consumption and transportation.

### **Respiratory system**

The only system that can never be applied an artificial protection strong enough to safeguard it from an unfavourable milieu is respiration. All the exogenic factors able to cause an excessive strain in the

respiration system can be classified in three groups: group I – real factors able to cause manifest pneumotropic effect (exposure of upper respiratory tracts, trachea, bronchi to cold; exposure of facial surface to cold; low air temperatures combined with strong winds; anthropogenic air pollution in northern towns); group II – real factors of uncertain mechanism of action on respiratory system (weather variability, exogenically-caused fluctuating hypoxia in the North; geomagnetic perturbation); group III – hypothetical factors, such as unipolar positive air ionization; and potential decrease in the atmosphere's oxidizing potential.

In children and adolescents residing in the North, the functional status of external respiration is shaping itself as a clear reaction and adaptation to extreme environment. The most common compensatory and adaptive reactions manifest themselves in hyperventilation when at rest; preserved or enhanced functional potential; decreased functional capacity combined with obstructive disturbances in bronchial tubes; decreased effectiveness of pulmonary gas exchange and diffusion capacity, and blood oxygen saturation.

An essential function of the respiratory system is the ability to remove end metabolite, i.e. carbon dioxide (CO<sub>2</sub>), from the body. Notwithstanding the fact that the percentage of carbon dioxide being exhaled by children residing in the North is lower than normal, the actual values of per minute exhalation of CO<sub>2</sub>, due to hyperventilation, are higher in all the age-sex groups as compared to the average found in minor residents of central Russia.

The relation between alveolar ventilation and the blood flow in the

lesser circulation is largely determined by the pulmonary artery systolic pressure. Generally, the actual pulmonary artery pressure in northern primary school children is almost identical to that in peers in central Russia. Lesser circulation hypertension is found only in adolescent northerners, no matter whether they are new or long-term residents of the North.

### Cardiovascular system

Among the features identified as characteristic of the blood circulatory system in school children residing in the European North of Russia are higher diastolic and mean arterial pressure; lower cardiac output in primary school children and higher in senior students; phase deviations in cardiac performance in the form of high diastolic pressure; increased peripheral vascular tone; lower extent of vessel expansion; low-intensity peripheral blood flow; and increased functional capillaries' lumen.

The formation of the blood circulation system is three-stage, each of the stages being indicative of certain functional performance of its elements and differing from the blood circulation system in central Russia's patients in terms of occurrence and characteristics:

- stage I – age 7-9, which involves the initial re-tuning of electromechanical cardiac performance and an increase in cardiac output and peripheral blood flow intensity;
- stage II – age 10-13, which involves the major re-tuning of the electromechanical cardiac performance, the initial increase in functional capillaries' lumen

and the tendency towards sparing peripheral blood flow;

- stage III – age 14-16, which distinguishes by a major increase in arterial pressure and functional capillaries' lumen against the background of relatively stable electromechanical cardiac performance; an increase in cardiac output; and undropping intensity of the peripheral blood flow.

The age-specific development of circulatory dynamics in school children who reside in the European North is described by an increase, especially in girls, of hyperkinetic trend, which, in turn, evidences that the adaptation to the external environment is rather a strenuous process.

It has been found that the hyperkinetic blood circulation pattern in northern school children largely involves a decline in electromechanical cardiac performance, cardiac muscle contraction, cardiac output, and vascular tone and flexibility.

The external meteorological conditions, as well as the sharp changes they are prone to, have effect on different links in blood circulation system in school children of all ages. The ages, which are described as most weather-sensitive and which involve re-tuning of the functional status of blood circulation system, are 8, 10 and 14-16 for boys and 7, 11 and 13-15 for girls.

Exposed to 'biological polar night', the immediate and long-term adaptation of cardiac function to physical activity involves a decline in cardiac muscle contraction and in the efficiency of the cardiac beat. Therefore, regular exercise stress may potentially cause the heart to dysadapt.

The motor function in primary school children is described by higher, as compared to peers in central Russia, physical performance and perseverance and lower physical agility and flexibility. Junior secondary and senior school children tend to manifest lower rate of physical perseverance, agility and flexibility.

Physical performance, which primarily involves aerobic performance, of children and adolescents residing in the European North is lower than the levels displayed by peers in central Russia. The average 1 to 2 year “delay” is displayed by northern school children regardless of age and sex.

Thus, the climate and the environment of the European North add to the functional load of the growing body, causing many of its functional systems to adjust themselves ultimately bringing them into a cardinal new state of being adapted – a process that takes a certain biosocial price to pay. In northern school children, the achieved adaptation manifests itself via two distinctive features found as characteristic of the functional performance:

- higher activity level of physiological systems combined with decreased functional reserve;
- fitness of physiological systems combined with insufficient reliability of functional support.

### **Integrative brain activity**

Daily periodicity of the day and night alternation is also one of the important ecological factors that form the biological rhythms organizing associated and coordinated activity of all organs and

systems, regulation of biochemical and immunological processes like the daily activities, hormonal system activities, and especially integrative brain activity.

The research into constant potential level (CPL) within the brain, which is indicative of its energy state, has found that CPL is much higher in children and adolescents residing in the European North, compared to the peers living in central Russia. The “dome-shaped pattern” of the CPL – one of the key principles of brain activity – has been found disrupted. Unlike their peers in central Russia, the children and adolescents living in the northern areas are found to develop hemispheric asymmetry of energy consumption. This phenomenon is indicative of the fact that in many northern children the right hemisphere prevails, leading to problems in academic progress, since the efficient perception of verbal information, as well as dealing with logical tasks, often requires more activity in the left hemisphere. One can say that the northerners of the pre-school, primary school, junior secondary and senior school ages display functional strain in their brains, which manifests itself in relatively delayed maturing of certain structures and functions of the central nervous system, and may complicate the academic progress. (Podoplekin, Podoplekin, Podoplekina & Gribanov 2005, 44–46.)

Circumpolar evident seasonal asymmetric of photoperiodicity demonstrating the long daylight during the spring-summer period (from mid May till mid July – biological polar day) and short daylight during the autumn-winter period (till 4,5 hours – biological polar night) can contribute to the

desynchronization of biological rhythms. Biorhythms' desynchronization (desynchronoze) under the disadaptive distresses or diseases may cause serious health problems (Soroko, Andreeva & Bekshaev 2009, 49–59). Symptomatically it is presented by decreased mental and physical activity, sleep disturbance, emotional instability, and uncertain behavior. Sensorial deprivation and hard depressive disorders can proceed during the polar night. The solar radiation that is increasing during the polar day can initiate nerve excitation, acrimony and then hyper alertness and nervous prostration, increase in arterial pressure, changes in all body systems. Such changes especially impact the children (Enikiev, Shumilov & Kasatkina 2007, 23–28). Anomaly of photoperiodicity undoubtedly impacts the child's CNS, physiological systems state and development and higher nervous activity in particular that is presented by changes of the bioelectrical brain activity measures and psychoemotional state. EEG rhythms' changes in the 16-17-year-old northerners especially during the periods of daylight increasing and decreasing indicate that strong sensory stimulation and deprivation produce adaptive CNS changes, instability of cortico-subcortical relations and are accompanied by high level of anxiety. Periods of maximum and minimal daylight duration can be considered more favorable for brain development and cognitive activity elaboration (Gribanov, Dzhos & Rysina 2013, 42–48). So, photoperiodical violations impact not only the general human well-being, his physical and mental activity but also the adaptive capacity to ever-changing environmental conditions.

In disregard of the most scientists' opinion that the polar night with the «polar intenseness syndrome» as a regional variant of the chronic fatigue syndrome (reported by V.P. Kaznacheev in 1971) is the most unfavorable period in the circumpolar areas there are researches confirming that a child's organism functional degradation in the North is possible even in other periods. So, seasonal increase of the children's chronic somatic pathology falls mainly on autumn and spring periods; hemodynamics indices have the most contrast results in the spring (May) and the autumn (October), decrease of immunologic reactivity is registered in April and October (Rapoport 1979, 23). Adaptive potential of the children from the circumpolar areas is also decreasing within these months (Poborsky & Pshentsova 2000, 58–61). Seasonal dynamics of the schoolchildren's functional state indices greatly depend on lifestyle, diet, physical and study level.

All things considered, the degree to which the performance patterns of different functional systems in the growing residents of polar and circumpolar areas have been explored is rather detailed.

### **Influence of psychosocial risk factors on the development of children-northerners**

An issue, which is currently described as under investigation is the role of social risk factors in the development of northern children. The adverse social factors are seen as able to cause rather a

strong targeted effect and weaken the individual's functional reserve at a very sensitive stage of his development.

### **Social conditions**

The survey of the social and household settings and the makeup of the families of primary school children in Arkhangelsk has enabled us to classify them, for reasons of statistical comparison, into two groups – children growing in a favourable setting (low social risk level) – 660 (76.8%), and children growing in an unfavourable setting (high social risk level) – 200 (23.2%).

As known, health level of descendants is predetermined by the health level of their parents. In our survey, 64.2% of mothers and 52% of fathers suffered from functional and chronic diseases. A hereditary load from one of several diseases was found in 8.4% of cases.

As far as social status goes, 26.4% of primary school children live in single-parent families. Single-parent families are mainly the result of a divorce or death of a spouse, or birth of an illegitimate child. They account for 11.8% of families at social risk.

### **Physical development and success in learning activity**

The level of children's physical development is a core criterion and indicator of health and social well-being of a society. By surveying the patterns in children's physical development it is possible to establish correlations between morphofunctional properties and the

biological age of children, as well as to provide descriptions of ontogenetic progress and development. The analysis of physical development levels in children exposed to high and low social risk has produced some doubtful findings. Deficit of body mass and height was evident in 3.4% of children growing in favourable settings and in 9.4% of children exposed to a higher social risk. Each group had approximately an equal number of children outperforming their peers, developmentally, at least on one parameter.

The incidence and prevalence of functional disorders and chronic diseases in children and adolescence are being followed by all the Russian regions, with focus on the effect of climate, geography and environment, as well as the crash course mode of education. Of interest is the structural comparison we have carried out of the functional disorders and chronic diseases in children living in different social settings. Generally, no major differences in the structure of functional disorders and chronic diseases in children living in different social settings have been found. However, children exposed to an unfavourable social setting are more likely to display neurotic disorders or hyperactivity combined with school disadaptation, which can be seen as a form of adaptation to the unfavourable micro-setting.

The decline in health levels in children and adolescents often entails poorer academic achievements. Essential to good academic progress are active attention and mental capacity. Their deficit may lead to steadfast academic problems. Individual evaluation of the survey outcome has shown an extreme scatter in the data concerning the number

of characters/letters viewed by children. The children who enjoy a favourable social setting coped easier with information processing and tended to maintain high level of performance during longer periods of time, also demonstrating higher resistance to interference in what they were doing. The stability of attention was markedly higher in children exposed to low social risk than in children living in less favourable settings. This may be indicative of a higher level of voluntary attention. The analysis of information processing rate has not shown any marked differences between the groups surveyed. The low information processing rate displayed by primary school children evidences functional immaturity of the brain structures responsible for perceptual experience.

### **Specialities of vegetative regulation**

From a medical-biological point of view, the level of a child's health is defined by the capacity of his functional reserve. The higher the functional reserve, the lower the 'price' the child pays for adaptation. Relying on the understanding of cardiovascular system as an indicator of the adaptive potential and activity within the entire body, we did the structural and spectral analysis of a cardiac rhythm variability in children exposed to low and high social risk levels. Surveyed at rest and under load, the cardiac rhythm variability serves an important integrative indicator of the adaptation process status.

The analysis of time and rate parameters of cardiac rhythm variability in boys exposed to higher social risk has

shown prevalent activity of sympathetic section of their vegetative nervous system. Given a high stress index, the assumption can be made that these boys' regulatory mechanisms are undergoing a greater stress as compared to those in peers who enjoy more favourable settings. At the same time, the extremely low rate is indicative of a lower activity within the cerebral undersegmental structures in the boys exposed to higher social risk, which also decreases the activity within the central regulation contour as compared to that within the autonomous. In terms of time and rate parameters, the girls exposed to higher social risk levels were found to manifest more marked dominance of the parasympathetic section in their vegetative nervous system. The stress index for girls living in an unfavourable social setting appeared lower than for girls who enjoy more favourable settings. Yet, this finding is uncertain. As with boys exposed to higher social risk levels, girls, too, were found to display low activity within the central regulation contour as compared to that within the autonomous.

The evaluation of the orthostatic responsiveness in terms of cardiac rhythm variability in children belonging to different social groups has shown that the children exposed to lower social risk levels tend to manifest higher stress-index orthostatic response performance, as compared to peers living in less favourable settings. This, in turn, is indicative of them having more markedly intense regulation mechanisms and lower adaptation potential. It should be noted that, generally, the level of orthostatic responsiveness in terms of time and rate parameters of cardiac rhythm variability in children belonging

to less favourable settings appeared lower, which evidences higher adaptation potential of the body. It is also important to note that the markedly decreased vegetative response within the extremely-low-frequency cardiac rhythm fluctuation in children exposed to higher social risk, which, in turn, provides a true picture of the status of the cerebral suprasegmental structures.

The constant potentials distribution pattern in the brains of children exposed to higher social risk evidences that the larger hemisphere cortex produces an intense regulatory effect on the subcortical structures, with the total energy consumption in these children's brains exceeding the age-specific norm by the average of 25%.

### **Children's psychomotor development**

The comparative study of psychomotor development in primary school children exposed to different levels of social risk has revealed certain specialities. Major differences were identified as a result of the analysis of static (balance keeping) and dynamic coordination of movements. Auditory-motor coordination tests revealed that 30% of boys and 26% of girls exposed to higher social risk levels found it difficult to reproduce the sequence of the shocks played. Consequently, the psychomotor patterns in the children exposed to higher social risk levels can be related, primarily, to coordination capacity disorders.

Thus, the obtained results are indicative of the social heterogeneity among secondary school children. An assumption can be made that social risk factors are able to largely modify the degree to which northern children are

able to adapt themselves to the climate and the environment, as they deteriorate the children's health.

### **Children's dispensarization**

The scheduled health survey of the Arkhangelsk Region children reveals that more than 60% of them suffer deviations from the normal health levels. The outcomes of the health survey are discouraging enough to have a closer look at the reasons of an extremely high incidence and proneness of school children to faults in posture, scoliosis, myopia, neurotic disorders and cold-related diseases.

On the increase is also the number of children with alimentary dependent diseases, which often relates to inadequate diet and nutrition. 18% of northern school children are registered as suffering from a delay in their physical development. Low physical fitness is found in 11% of the region's school children.

More sensitive indicators able to describe the influence of the environment, school instruction and education on a child's health level are produced by multifaceted evaluations of health. What stands out is the fact that children in health group I tend to suffer from a deficit of a specific body mass and an increase in the chronic diseases incidence. The trends identified provide the information on how primary school children adapt themselves to changes in their life setting – a process that is essential to the development of functional systems when exposed to a set of adverse factors.

In forming and maintaining the health levels in children and adolescents, special responsibility lies with educational institutions. The health



services system currently established in the educational institutions is unable to improve health level or decrease disease incidence. It should be noted here that the majority of schools in the region's capital no longer offer the position of a school doctor. Instead, they employ nurses, paramedics and part time doctors who do not major in pediatrics.

### **Physiology-pedagogical aspects of children's health in the North**

Recently, more and more educators are displaying interest in health issues. Teachers realize that there exists a dependence between health levels and the quality of education. They arrange health-improving activities at schools. The availability in schools of medical facilities and medical personnel, as well as of the prophylaxis measures to prevent diseases in their infancy (phyto-bars, inhalatoria, physiotherapeutic and massage rooms, etc.) can contribute to the effort of improving the health levels among schoolchildren and can cover a wider range of children suffering from chronic diseases with health-improving arrangements.

#### **The role of nutrition and physical activity in promoting wellbeing in the North**

Diet is very important for human adaptation to the Northern conditions as body energy expenditure increases. All types of metabolisms – protein, carbohydrate, lipid, microelement, and vitamin are involved in the long

adaptation process under the extreme conditions in the North. Herewith it is very important to increase the role of the lipids in the organism energy supply and to use protein actively as an energy-related material. Besides, «Polar metabolic type» is formed in the North that is characterized by the carbohydrates role decrease, lipids role increase and proteins in less degree. It is very important to eat more fish, seafood, meat, milk food, cereals and beans and to minimize sugar, salt and carbohydrates.

Local natural resources should be used for rational diet at the most. It is well known that the northern plants contain more vitamins (some tens of times more) and BAAs than the southern plants. Foods of animal origin produced in the North have more proper protein. The northern fish have a very high content of polyunsaturated fatty acids which are very important for cardiovascular diseases prevention (Aghajanian & Petrova 1996, 208).

Regular exercise is an effective way to improve body resistance to diseases and environmental negative effects. A person going in for sports without overwork and with well-balanced training of all the systems gets an advanced persistence. Physical activity influences the many life support systems - cardiovascular, respiratory, and activates metabolism (Vinogradova & Anisimov 2012, 128).

#### **The influence of day length on children's health in the North**

It is very important for schoolchildren to keep regular hours for successful adaptation within the Northern environment as the day and night circadian cycle is an important regulator

of the living body's physiological rhythms. Light conditions and light lasting actions were changed after the introduction of the lamplight and electricity. Evening and even night light exposure is an essential part of the schoolchildren's modern life style. But night light exposure provokes behavior and health disorganizations as the light at night restrains the night secretion of melatonin in the conoid body which participates in all life activities and controls many body functions. Schoolchildren's organisms experience numerous neuroendocrine overloads during the physiological growth such as pubescence, somatic development, reproductive system cycle, stresses, light intensity etc. That is why it is possible to minimize negative environmental impacts by conducting the social synchronizing factors such as sleep-wake and rest-work schedules (Vinogradova & Anisimov 2012, 128).

As can be seen from the above the regulation of the schoolchildren's balanced diet, study hours, physical activity and rest makes it possible to adapt to the extreme circumpolar conditions and to preserve health and high working efficiency.

### **Pedagogical aspects of maintaining children's wellbeing in the North**

On the base of long-term research of schoolchildren health in the circumpolar areas scientists proved that a two-shift study process is unacceptable. The school programme in the North should have two times more lessons of physical

training than the central region's schools. The development of special circumpolar areas school project which will take specific study and physical training of healthy schoolchildren into consideration is necessary.

The use by teachers of health-friendly technologies found as meeting physiological and hygienic requirements, as well as the application of adequate school setting, curricular and extra-curricular academic load and school-time diet will have a significant effect on schoolchildren's health.

Of research and practical relevance are the issues of identifying the inadequacies of a child development setting. Making child development conducive to adaptation, too, is a relevant topic to be explored by physiologists, psychophysicists, psychologists, educators and social workers.

When enhancing the structure and content of the general curricula, it is necessary that dedicated child functional development monitoring centers be established to keep track of the health levels in primary and senior school children.

One of these centers is Sodeystvie Child Development Competency Center. Being a part of NArFU Institute of Medical and Biological Research, it has 15-years of experience in rendering assistance to children with emotional and behavioural disorders.



## Assistance for children with emotional and behavioural disorders in the Russian North

Emotional and behavioural disorders are related to the child's central nervous system neurobiological and functional features, the aetiology and pathogenesis of which are integrated. Therefore, the Institute staff focuses on neuro- and psycho-physiological methods in the research of these disorders (Deputat et al. 2013, 45–55). The Institute is successful in applying for different grants. The results of the research into emotional and behavioural disorders are presented in numerous publications, including the publication list of the Russian State Commission for Academic Titles, methodological recommendations, study guides and monographs. The Institute staff members regularly take part in different conferences in Russia and overseas.

Since 2005 we have been running special course programmes such as Behavioural disorders of children and teenagers, a professional training programme for educational and rehabilitation organisations staff – ADHD, Tourette's and Asperger's syndromes. These programmes cover both modern views of aetiology, pathogenesis, diagnosis, treatment and the results of the Institute research into the issue, analysis of extensive experience in assisting children with emotional and behavioural disorders and their families.

Since 2007 the Arkhangelsk Region Ministry of Education and Science has been commissioning the Institute professional courses for educational

organizations staff. At present more than 70 specialists from the Arkhangelsk Region and Nenets Autonomous Okrug educational organizations have received knowledge about contemporary methods of diagnosing and treating emotional and behavioural disorders. Professional courses are part of the international project implemented with partners from Norway. After completing the professional courses learners are awarded with a state certificate of professional training (72 academic hours) and an international certificate in accordance with the Bologna process provisions.

Research and education activities are closely connected with practical support given to children with emotional and behavioral disorders. Effective rehabilitation and treatment of children depends on the efforts of various specialists – doctors, teachers, psychologists, as well as on a wide range of non-medical technologies and the active involvement of the family and social environment into achieving positive results.

At present a psychologist, a psychotherapist, a pediatrician, a neurologist, a special education teacher and a speech pathologist work in the Centre. Children with emotional and behavioral disorders are supported in accordance with international acts in the sphere of children's rights, federal laws, decrees of the RF President, resolutions and regulations of the RF Government, decisions of the Arkhangelsk Region Ministries, the Statute of NArFU named after M.V. Lomonosov, the Statute of Biomedical Research Institute and the Statute of Sodeystvie Centre. The Centre is financed by the regional budget within the framework of the state contract

between NArFU and the Arkhangelsk Region Ministry of Education and Science, which makes highly professional special assistance free and available to all children in the Region.

Every year around one thousand children have a check-up in the Sodeystvie Centre (more than 700 of them for the first time). Many children undergo diagnosis and rehabilitation activities. Teachers visit the Centre too in order to coordinate work and rehabilitation measures in concrete cases. Apart from consulting, diagnosing and rehabilitating work, the Centre deals with the child's family and social environment, family and group therapy, courses and seminars for teachers and parents. (Gribanov & Pankov 2010, 4-8.)

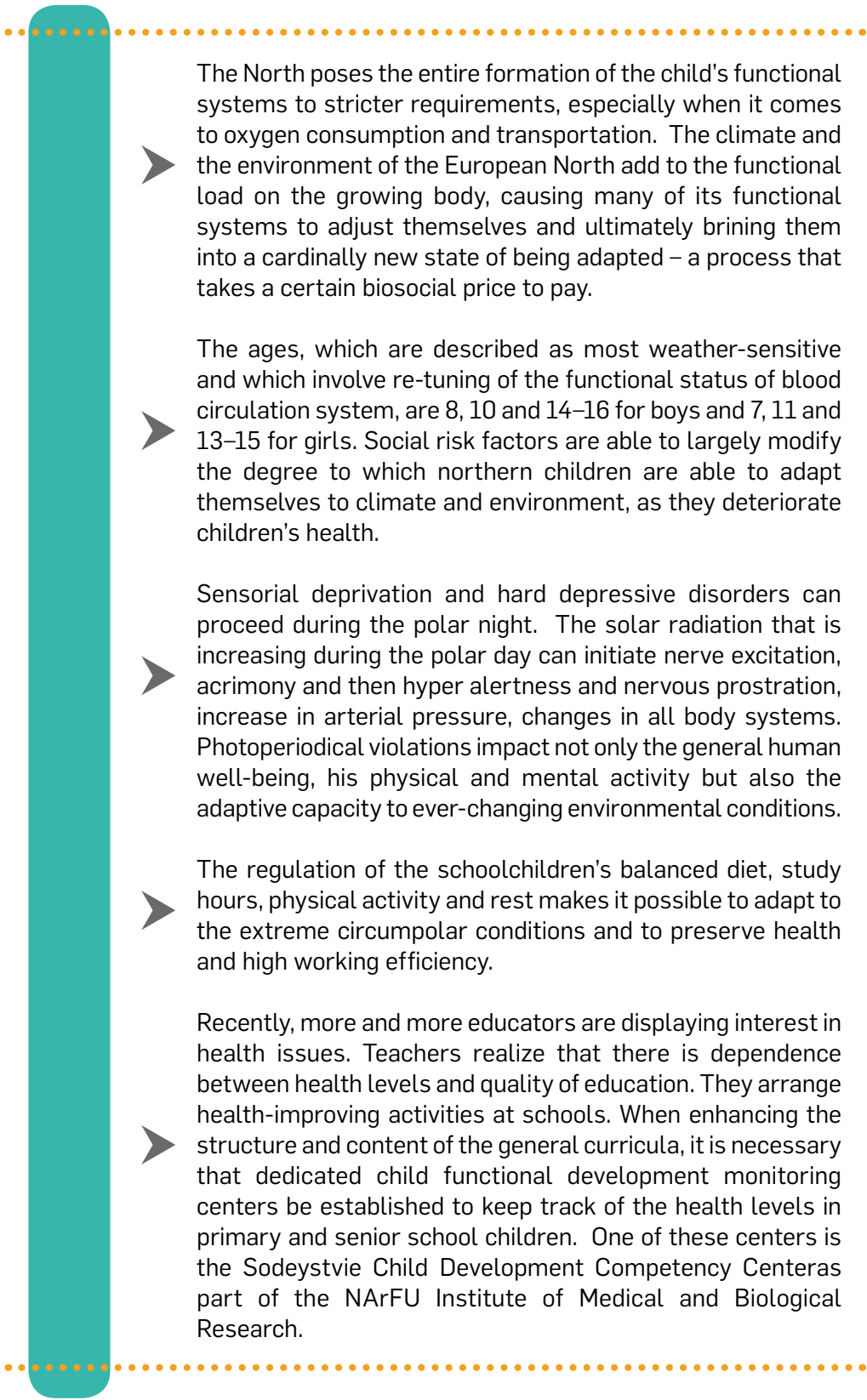
At present the Biomedical Research Institute has significant research experience in the sphere of diagnosing and rehabilitating support of children and teenagers with different educational needs, as well as with emotional and behavioral disorders; experience in applying results to the practice of regional schools in Arkhangelsk, Severodvinsk, Novodvinsk towns. Such work is done to a lesser degree in municipalities, therefore, children living in remote northern areas have a limited access to special diagnosing and rehabilitating assistance.

Establishing a regional network of children's distant consulting is relevant both in theoretical and practical terms and corresponds to the development priority of NArFU named after M.V. Lomonosov: «Northern (polar) medicine and health care». Implementing the research-based model of the distant consulting regional network for children with emotional and behavioral disorders

in the remote areas of the Northern Arctic region will have results that can be disseminated in other Russian regions. We have developed a model of a distant consulting regional network for children with emotional and behavioral disorders. It consists of two resource centres and regional psychological, medical and pedagogical commissions in the municipalities. (Pankov 2013, 30-38.)

Participants of the distant consulting network are a resource centre in the Biomedical Research Institute – Sodeystvie Centre of a child's development competences, staff of NArFU developmental physiology and health care science department; the resource centre of the central psychological, medical and pedagogical commission; regional commissions in municipalities; parents, caregivers, legal representatives of the child with special educational needs.

The process of cooperation between all participants of the distant consulting regional network for children with emotional and behavioral disorders will involve preparing and harmonising the following: a child's individual educational route; guidelines for specialists in children's psychological, medical and pedagogical support; guidelines for a child's parents. Major research and practical results achieved by the Sodeystvie Centre of a child's development competences will be later published in methodological recommendations, articles in reviewed Russian or international journals, scientific papers collections and conference materials.



➤ The North poses the entire formation of the child's functional systems to stricter requirements, especially when it comes to oxygen consumption and transportation. The climate and the environment of the European North add to the functional load on the growing body, causing many of its functional systems to adjust themselves and ultimately bringing them into a cardinal new state of being adapted – a process that takes a certain biosocial price to pay.

➤ The ages, which are described as most weather-sensitive and which involve re-tuning of the functional status of blood circulation system, are 8, 10 and 14–16 for boys and 7, 11 and 13–15 for girls. Social risk factors are able to largely modify the degree to which northern children are able to adapt themselves to climate and environment, as they deteriorate children's health.

➤ Sensorial deprivation and hard depressive disorders can proceed during the polar night. The solar radiation that is increasing during the polar day can initiate nerve excitation, acrimony and then hyper alertness and nervous prostration, increase in arterial pressure, changes in all body systems. Photoperiodical violations impact not only the general human well-being, his physical and mental activity but also the adaptive capacity to ever-changing environmental conditions.

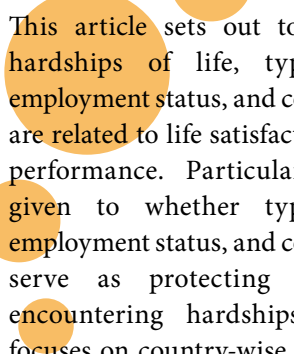
➤ The regulation of the schoolchildren's balanced diet, study hours, physical activity and rest makes it possible to adapt to the extreme circumpolar conditions and to preserve health and high working efficiency.

➤ Recently, more and more educators are displaying interest in health issues. Teachers realize that there is dependence between health levels and quality of education. They arrange health-improving activities at schools. When enhancing the structure and content of the general curricula, it is necessary that dedicated child functional development monitoring centers be established to keep track of the health levels in primary and senior school children. One of these centers is the Sodeystvie Child Development Competency Centers as part of the NARFU Institute of Medical and Biological Research.

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# Hardships of Life and Coping among Adolescents in the Barents Region



This article sets out to analyze how hardships of life, type of family, employment status, and coping strategies are related to life satisfaction and school performance. Particular attention is given to whether type of family, employment status, and coping strategies serve as protecting factors while encountering hardships. The article focuses on country-wise differences and similarities between the countries. A special attention is also given to explanations for differences and similarities.

## Introduction

In the first part of the article relevant research on the relationships of family structure and socio-economic status (SES) to life events, stress, life satisfaction, and school performance is presented. The parts played by bullying and coping are also analyzed in relation to stress and life satisfaction.

Bjarnason et al. (2012) studied life satisfaction in different family structures

in 36 western societies. They found that children living with both biological parents or in joint physical custody reported higher levels of life satisfaction than did children in other family structures. Family affluence had a positive impact on life satisfaction.

Glascok, Andersen, Labriola, Rasmussen and Hansen (2013) conducted a study of the relationship that negative life events and coping with them had with perceived stress among Danish adolescents. Both negative life events and perceived stress decreased along with household income. Higher household income was indicative of higher active coping and lower avoidance coping. High perceived stress was predicted by many negative life events, high avoidance coping, and low active coping. The associations of coping with stress were more pronounced for girls. Chandler, Million and Shermis (1985) also found a significant relationship between SES and life events. Children from families from lower SES groups had more events. Singh, Soni, Gill and Kaur (1991) found a positive association between stressful family events and somatic complaints among

schoolchildren. Schoolchildren coming from nuclear families had more life events and complaints.

Dubov and Tisak (1989) investigated the relationship between stressful life events and various indicators of adjustment in elementary school children. Many stressful life events were found to lower school performance (GPA). High social support and social problem-solving predicted high GPA. Social problem-solving served as a protective factor by preventing life events from resulting in low GPA. Suldo, Shaunessy and Hardesty (2008) found in a sample of high school students that students with high positive-appraisal coping and low anger coping were more satisfied with life as stress increased. Morales and Guerra (2006) found also that stressful life events were negatively related to school achievement. Family and neighborhood events had stronger effects than did school environment events. In addition, events had a cumulative effect on achievement; i.e., the more events, the lower the achievement.

Vanaelst et al. (2012) studied the prevalence of negative life events in European pre-primary and primary school children. They showed that adversities such as family economic hardship and non-traditional family structure tend to co-occur with peer problems, low maternal education, and bad family climate. In addition, in the study by Bjarnason et al. (2012), the role of family climate emerged. Schoolchildren having difficulties in talking with their parents had lower life satisfaction.

Ahonen (2010) examined schoolchildren's well-being in the Barents region (northern parts of Norway,

Sweden, Finland, and North-East Russia). Familial SES predicted life satisfaction in Swedish, Finnish, and Russian samples. Bullying did not predict life satisfaction in any country. Life satisfaction decreased with loneliness in Russian and Finnish schoolchildren.

## Research questions and methodology

This article sets out to analyze the relationships among type of family, employment status, hardships of life, coping, school performance, and life satisfaction. Three research questions were addressed:

1. How are family type and employment status related to hardships of life?
2. Do type of family and employment status serve as protectors or, alternatively, as predisposing factors in life satisfaction and school performance?
3. Do coping strategies interact with hardships of life in predicting life satisfaction and school performance?

The data will be analyzed by country, allowing to focus on national differences and similarities.

The data was collected via a questionnaire comprising mainly closed-ended questions. An electronic questionnaire was administered through a public link on the internet at schools in northern parts of Norway, Sweden, and Finland, and North-West Russia. A total of 629 schoolchildren filled in the questionnaire. The sample was made up of the following national samples:



Norway (n=102), Sweden (n=131), Finland (n= 236), and Russia (n=160).

In the data analysis, the following variables from the original questionnaire were used:

- Background variables: gender, class level, type of family, and employment status of family.
- Hardships of life: bullying, loneliness, and number of life events.
- Adaptation to one's life situation: life satisfaction and school performance.
- Coping efforts: problem-solving, social support (approach coping), distancing, emotional externalization, and emotional internalization and distraction (avoidance coping).

All the variables except for life events and coping strategies were taken from the Health and Behavior of School-aged Children (HBSC) questionnaire. The life events measure was developed de novo for this study, based on prior contributions in the measurement of life events. The measurement of coping strategies was based on scales developed by Causey and Dubow (1992).

The data was analyzed by using a linear mixed model (LMM) and multiple regressions (MRs) with life satisfaction and school performance as dependent variables. The LMM allows the use of both continuous and categorical predictors. The LMM was used to test whether type of family and employment status interact with hardships of life. Interactions were expected to be of two types. In the case of protective factors, certain types of family and employment status decrease the harmful effect of hardships on life satisfaction and school

performance. By contrast, the predisposing factor increases the harmful effect.

MR analysis was used to analyze hardships of life situation—coping interactions in life satisfaction and school performance (for types of interactions, see Baron & Kenny 1986). On the basis of previous, coping was expected to be a buffer against hardship, but some coping effort can work as an exacerbating factor and make the situation even worse (Rajala 1997). A third type of interaction is a compensation effect, meaning a situation in which high copers exhibit, for example, higher levels of life satisfaction in a high hardship condition than do low copers.

## Results

### Type of family and employment status as predictors of hardships of life

Type of family was scored as follows: 1=intact; 2=non-intact/living with one biological parent only; 3=adopted, living with grandparents, living with foster-parents. Family's employment status ranged from 1=both parents employed full-time, through different combinations of employed full-time, employed part-time, unemployed, and studying/on sick leave, to 7=the worst employment status.

In the Finnish data, schoolchildren living in intact families experienced fewer life events in comparison to schoolchildren not living with their biological parent. Employment status was unrelated to life events. Girls

**COMMON TO ALL NATIONS WAS THE FINDING THAT FEELINGS OF LONELINESS WERE MORE PREVALENT AMONG GIRLS.**

reported more life events. Schoolchildren in lower classes had more life events.

As far as the Russian data was concerned, schoolchildren living either in intact families or with one biological parent only had fewer life events. Schoolchildren living in a family with one parent employed part-time and the other unemployed reported more life events. Female schoolchildren experienced more life events.

In Norway, schoolchildren living in families with the best employment status experienced fewer life events. Schoolchildren living in a family with both parents employed part-time had fewer life events. Type of family, gender, and class level were unrelated to life events. In the Swedish data, only type of family determined number of life events. Schoolchildren living in intact families reported fewer life events.

Next, the predictors for bullying are presented. Schoolchildren living in intact families or with one biological parent only reported fewer bullying episodes in the Finnish data. Among Russian schoolchildren, bullying was experienced less in families with the best employment status, in families with employment status of one working full-time and the other being a student or on sick leave, and in families with both parents working part-time.

In the Norwegian data, only employment status predicted bullying. Bullying was less common among schoolchildren coming from families with both parents employed full-time, one employed full-time and the other part-time, one employed full-time and the other unemployed, and both employed part-time. By contrast, bullying was more common in families with one parent employed full-time and the other being a student or on sick leave. In the case of Swedish schoolchildren, more bullying was reported in families with one parent employed full-time and the other employed part-time.

Finally, the models for loneliness are considered. Common to all nations was the finding that feelings of loneliness were more prevalent among girls. In the Finnish data, schoolchildren living in intact families reported lower levels of loneliness. Among Russian and Swedish schoolchildren, neither type of family nor employment status related to loneliness. In Swedish schoolchildren, loneliness increased alongside class level. Schoolchildren living in families with both parents employed full-time had fewer feelings of loneliness in the Norwegian sample.

## Interactions of hardships in life and type of family and employment status in life satisfaction and school performance

Next, the role of parents' employment status and family structure is analyzed as a protecting or susceptibility factor in the relationship of loneliness, stressful life events, and bullying to life satisfaction and school performance. The analysis is conducted separately in each country. First, the role of parents' employment status is examined, and then the role of family structure is analyzed. Findings are presented in the order of loneliness, bullying and life events in the data analyses.

**Loneliness.** Employment status had no effect on the relationship of loneliness to life satisfaction in any country. As far as school performance is concerned, employment status of one parent working full-time and the other part-time protected against the negative effects of loneliness on school performance among Finnish schoolchildren. In Norway, both parents working full-time predisposed children to the negative effect of loneliness on school performance.

**Bullying.** Both predisposing and protecting effects were found for Finnish and Norwegian schoolchildren. In Finland, employment status of both parents working part-time predisposed schoolchildren to the harmful effects of bullying on life satisfaction. Employment status of one parent working full-time and the other being on sick leave or a student protected against effects of bullying. In Norway, employment status had a predisposing role. Bullying had a stronger effect on life satisfaction in families with both parents working full-

time or with one parent employed full-time and the other unemployed.

Employment status had both protective and predisposing roles in the relationship between bullying and school performance. Among Finnish schoolchildren, parents' employment status of both working full-time decreased the effect of bullying. In Russian schoolchildren, employment status of one working full-time and the other being on sick leave, retired, or studying increased the effect of bullying.

**Number of stressful life events.** For stressful life events, employment status had both protective and predisposing effects. Among Russian schoolchildren, parents' employment statuses of both working full-time and one working full-time and the other being unemployed increased the harmful effect of life events on life satisfaction. For school performance, employment status of one parent working full-time and the other being a student or on sick leave played a protective role in Norwegian schoolchildren.

**Loneliness.** Next, the possible protective role of family structure is analyzed. Among Russian schoolchildren living with one biological parent only, loneliness had a weaker negative effect on life satisfaction. For Swedish schoolchildren living with both parents, loneliness had a weaker negative effect on life satisfaction. Type of family had a protective role in school performance for the Finnish and Swedish schoolchildren. In Sweden and Finland, living with both parents decreased the effect of loneliness; in Finland, living with one biological parent only also decreased the effect of loneliness.

**Bullying.** With regard to bullying, type of family had a protective role among Russian and Swedish schoolchildren. In Russia, life satisfaction was affected less by bullying experiences among schoolchildren living with one biological parent only. With regard to Swedish schoolchildren, living with both parents played a protective role. In Norway, living with one biological parent predisposed to the harmful effects of bullying in life satisfaction. Only among Finnish and Swedish schoolchildren did type of family have a protective role in school performance. Living with both parents decreased the effect of bullying in Sweden and Finland. In Finland, living with one biological parent only had the same effect.

**Number of stressful life events.** Type of family was not found to have a protective effect in life satisfaction in any country. When the relationship of life events and school performance was examined, living with both parents or with one biological parent only protected schoolchildren from the harmful effects of live events among Norwegian schoolchildren.

### **Interactions of coping with hardships of life in life satisfaction and school performance**

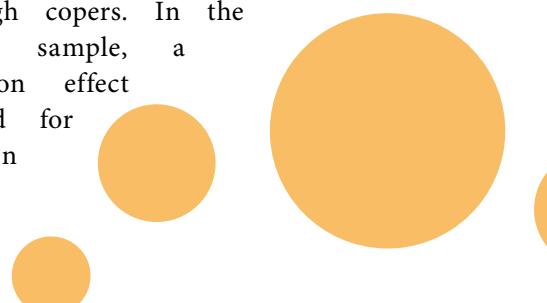
Hardship-coping interactions can take three different forms: two ordinal and one dis-ordinal. Ordinal interactions can be either a buffer against the harmful effects of hardships on life satisfaction and school performance or an exacerbating factor that increases the harmful effects of hardships. A dis-ordinal interaction specifies the

conditions under which the dependent variable has high or low values.

In this data, all kinds of interaction were noticed. In explaining life satisfaction, social support and distraction buffered the harmful effects of bullying in Russian schoolchildren and problem-solving buffered the harmful effects of bullying in Swedish schoolchildren. Emotional internalization functioned as buffer against the harmful effects of loneliness in Finnish schoolchildren and problem-solving functioned as a buffer against loneliness in Swedish schoolchildren. Distancing and problem-solving exacerbated the situation in Finnish and Russian schoolchildren, respectively, as regards life events. Emotional internalization and problem-solving among Finnish and Swedish schoolchildren, respectively, functioned as exacerbating factors for loneliness. In explaining life satisfaction, high emotional externalization compensated for the damaging effect of bullying on life satisfaction.

In explaining school performance, problem-solving, emotional externalization, and distancing buffered the harmful effects of bullying on school performance in Norwegian schoolchildren. Distancing, emotional externalization, and distraction also buffered the harmful effects of loneliness in Norwegian schoolchildren.

Among Finnish schoolchildren, problem-solving exacerbated the effects of life events on school performance among high copers. In the Norwegian sample, a compensation effect was found for distraction



and emotional internalization. Schoolchildren being high on both coping strategies exhibited higher school performance while being on average or high level of bullying.

## Conclusions

Hardships of life were differentially related to type of family and employment status in each country. Schoolchildren living in intact families in Finland and Sweden experienced fewer life events. The same was true also for Russian schoolchildren who lived with one biological parent only. Employment status was not in a straightforward way related to the number of life events. When both parents were working full-time, schoolchildren experienced few life events in Norway. Family's poor employment status—both working part-time or one working part-time and the other being unemployed—was in an inconsistent way associated with the number of life events. In Norway, it decreased life events but in Russia, increased them.

Bullying was almost unrelated to type of family. Living in an intact family or with one biological parent only reduced bullying episodes in Finland. Poor employment status did not consistently increase risk of bullying, as the Russian and Norwegian data showed. As to loneliness, type of family and employment status were weakly related to experiences of loneliness. This may be due to the fact that poor social skills and personality explain loneliness better.

Analyses of the role of type of family and employment status as protective or risk factors indicated that living in an intact family or with one biological parent only protected against low life satisfaction and low school performance when schoolchildren encountered hardships. The only exception was Norway, where living with one biological parent only increased the harmful effects of bullying on life satisfaction. Results bearing on the role of employment status were less consistent. Employment status served as a protective factor in Finland and Norway if at least one parent was working full-time and the other was part-time, unemployed, or a student. Paradoxically, the best employment status predisposed to the harmful effects of hardship on life satisfaction and school performance in Russia and Norway. This can be explained by lack of co-occurrence of family functioning and employment status.

Findings bearing on the role of coping strategies as a buffering or an exacerbating factor were the most inconsistent. The same strategy could buffer or exacerbate the situation, depending on the country in question. Use of problem-solving while experiencing hardship improves schoolchildren's situation in Finland, but in Russia it makes the situation worse. Emotional externalization is an adaptive strategy in Norway, but non-adaptive in Russia. Also in Norway distraction—going on with one's life as normal—usually is adaptive, but the opposite is true in Finland and Sweden. According to the number of buffering effects, the most adaptive strategies irrespective of country seemed to be problem-solving and distancing oneself from a problematic situation.

Summing up the central findings within the ArctiChildren InNet project:

- Schoolchildren coming from intact families experience clearly fewer life events. Bullying was also less common in the same families. A good employment status of the family decreases life events and bullying. Family structure and level of family affluence are important for good life among schoolchildren.
- Intact family is clearly a protecting factor for life satisfaction while schoolchildren encounter various hardships in their youth. This may be because intact families can lend support and protection and thus create a good basis for children's lives (Salmela-Aro 2011).
- At least one parent working full-time serves as a protective factor in Finland, but the same was a predisposing factor in Russia and Norway. This indicates that family climate and employment status have a country-specific pattern.
- As to coping strategies, both active problem-solving and taking distance from one's hardships buffer against the harmful effects of hardships. On the basis of research on problem-solving coping, this coping strategy is positively related to self-confidence and optimism (Grove and Heard, 1997; Terry, 1992). Thus, one can expect that schoolchildren scoring high on problem-solving can better handle their psychosocial development in adolescence and exhibit sounder (e)health behavior.

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# Coping - How Do Youth Meet Difficult Situations?

This article deals with some aspects of coping among Norwegian schoolchildren taking part in the ArctiChildren InNet survey. Coping, the feeling of mastering different challenges both regarding school subjects as well as challenges in life in general, influence schoolchildren's developmental processes in positive ways. On the contrary, feelings of defeat and lack of power threaten the development of psychosocial wellbeing.

## Introduction

Health promotion among schoolchildren is a major objective in the ArctiChildren project. A matter of vital importance for a healthy life is how the individual manages to meet new and difficult situations. In this article, we will discuss the choice of coping strategies among the Norwegian respondents in relation to their perceived life satisfaction. The health-promoting theme is related to coping style and strategies and to what extent they effectively reduce negative stress. American psychologist Richard Lazarus has developed one of the most widely used and proven theories of mastery. According to Lazarus (1999), the

individual will evaluate the situation in terms of danger, loss, and challenges and adjust the behavior in relation to the opinions. This article deals with the strategies schoolchildren in Finnmark are using in difficult situations and how those strategies influence their perceived life satisfaction. Will they try to avoid the situation or face the situation constructively? Moreover, are there differences between boys and girls? The data from the ArctiChildren project applies to youth aged 13 to 15. In this period of life, an active development takes place, mentally and physically to what Erikson (2000) called 'the inner revolution'. Therefore, it is interesting to examine how young people in that age master difficult situations.

Depending on choice of a coping strategy in problematic situations, the result can either reduce stress or increase the level of stress. As an example, it is claimed that children with social coping and social skills are good at reading social situations, understand the group norms and social rules. The consequence is that their behavior is being flexible, well-adjusted and they have a capability to take an independent social initiative (Ogden 2009). It has been argued that many young people have less insistent

will to solve problems and select more avoidance strategies when they encounter problems of various kinds (Thuen & Bru 2004). Learned helplessness, to give up, apathy and lack of action are linked to cognitive interpretation of problematic situations where the individuals come to believe that the difficult situation is beyond their control (Seligman 1975). Youth in a learning situation and at the same time in a vulnerable phase in their development are faced with demands for mastery in a number of situations that might be stressful. In adolescents, learned helplessness is associated with disengagement in academic performance and an increase in depression (Määttä, Nurmi & Stattin 2007). Besides the academic challenges, which are not the subject here, they meet many challenges on a personal and emotional level in their daily life. Family problems, divorces, serious illness and death, moving away from friends and change of school are examples of stressful problem situations to be dealt with. This raises the question whether young people have access to flexible coping skills in various challenging situations. It leads to the following question:

- What are the coping strategies schoolchildren in lower secondary school use meeting difficult situations? In what ways does their choice of coping strategy have an influence on perceived life satisfaction?

The research question in the survey was: What do you usually do or think, if you experience having problems? With regard to life satisfaction; mark on the scale from 0 to 10 your current life satisfaction. In this context, the type of problem is not closer defined. The main

topic is how the schoolchildren themselves experience and define situations as problematic and how they experience life satisfaction.

## Central concepts

Coping or mastery is depending on the situation and the type of challenges that the individual is facing. Coping can build on the lessons learned, experiences and an intuitive ability to analyze situations and act accordingly. In this article, we will define coping as the individual's abilities and skills to act accordingly and adequately to the expected outcome in situations they experience as difficult.

It is reasonable to emphasize that avoidance strategy may be as adequate as actively confronting a problematic situation. The individual's appraisal of the situation and assessment/evaluation of what the opportunities are will have an influence on the choice of strategies. The often-used theory of coping (Lazarus 1999) describes eight different coping strategies: confronting, problem-solving, disclaiming, escape-avoidance, accepting responsibility, exercising self-control, seeking social support and positive reappraisal.

## Method

The ArctiChildren InNet project used a questionnaire common to all the participating countries. The purpose was to record the children and young people's lifestyle, health behavior and general

psychosocial situation. In this article, we make use of only the Norwegian data.

## Sample

The sample was 240 schoolchildren, aged 13 to 15 from three different schools in the county of Finnmark, Norway. The response rate was 46%. The children needed their parents' consent in order to participate. Of 240 families, 102 gave positive answer for their children's participation; three families gave a negative answer. The remaining 135 families did not answer the request before the deadline. The positive response rate was accordingly 46%.

The sample is not sufficient to generalize the empirical results to Finnmark or to Norway. We choose, however, to present the material first because it is relevant for the actual schoolchildren and for the participating schools. In addition, we think that the empirical results can give indications for further research.

## Data Collection

The participating schools established temporary e-mail addresses for the pupils. An electronic edition of the questionnaire was distributed to those mail addresses in October 2012. When the children had answered and send their questionnaire, the e-mail addresses were closed for further use. A teacher was present in the classroom when the children worked with the questionnaire.

## Results

In the empirical analysis, our two research questions are:

- How does the use of different coping techniques affect satisfaction with life?
- Are there differences between boys and girls in the use of coping techniques?

The respondents have answered questions about how often they use different coping techniques, and indicated on a five-point scale how often they use each of the techniques (1=never, 2=almost never, 3=sometimes, 4=for the most part, 5=always). The questionnaire contained a battery of 17 different coping techniques, but we have only used nine of these questions in our analysis.

Based on principal component analysis of the answers, we were able to find three interpretable components of coping techniques. We then constructed three different scales based on the items of each component, each scale representing what we can call a coping style. Table 1 (next page) shows the items and the value of Cronbach's  $\alpha$  of each scale. Two of the scales have acceptable values of Cronbach's  $\alpha$ , while the third scale has a barely acceptable value.

There are different approaches to the classification of coping techniques (for an overview, see Weiten, Dunn & Hammer 2012: 98-127). In our analysis, we have distinguished between constructive and non-constructive coping techniques. The main characteristic of constructive coping techniques is that they are task relevant and action oriented (Kleinke 2007).

We have also distinguished between coping techniques that involved emotions

**Table 1.** Scale construction, items and Cronbach's  $\alpha$ .

<b>SCALE 1:</b>	<b>SCALE 2:</b>	<b>SCALE 3:</b>
CONSTRUCTIVE COPING TECHNIQUES	NON-CONSTRUCTIVE EMOTIONAL COPING TECHNIQUES	NON-CONSTRUCTIVE NON-EMOTIONAL COPING TECHNIQUES
<ul style="list-style-type: none"> <li>● Tell a friend or a family member</li> <li>● Get help from a friend</li> <li>● Talk to someone about my feelings</li> <li>● Make a change so that things will work</li> <li>● Complain to others</li> </ul>	<ul style="list-style-type: none"> <li>● Worry too much</li> <li>● Cry</li> </ul>	<ul style="list-style-type: none"> <li>● Tell myself it does not matter</li> <li>● Do something else in order not to think about it</li> </ul>
Cronbach's $\alpha = 0.77$	Cronbach's $\alpha = 0.79$	Cronbach's $\alpha = 0.66$

and coping techniques that did not involve emotions. Based on the results of the principal component analysis, we have only applied this distinction to the non-constructive coping techniques.

The first scale represents a constructive coping style. According to Moos and Billings (1982) there are three categories of constructive coping techniques, appraisal-focused coping, problem focused coping and emotion focused coping. The items on the first scale seem to include all of these coping strategies. A high score on this scale means that the respondent attempts to deal with the problem directly, and seeks social support in addition. A low score on this scale represents an absence of such active coping strategies.

The second and the third scale represent a non-constructive coping style, with no active attempts of coping. The second scale involves negative

emotions, while the third scale represents withdrawal with no emotions involved.

Table 1 compares the scores of boys and girls on all three scales. An independent samples t-test shows that girls have significantly higher scores on the scales for constructive coping techniques as well as the non-constructive emotional coping techniques ( $sig.=0.01$ ). However, there are no significant differences between boys and girls on the scale for non-constructive non-emotional coping techniques.

Table 1 also shows that the scale for constructive coping techniques has the highest mean, indicating that this scale represents the most used coping techniques. Non-emotional non-constructive coping seems to be the least utilized coping technique. Paired samples t-tests also show that the differences are significant ( $sig. 0.01$ ).

**Table 2.** Means and standard deviations on scales for coping, strategies. Boys, girls and sample.

COPING STRATEGY	BOYS		GIRLS		SAMPLE	
	MEAN	STD.DEV.	MEAN	STD.DEV.	MEAN	STD.DEV.
SCALE 1: CONSTRUCTIVE	2.66	0.59	3.18	0.75	2.90	0.72
SCALE 2: NON-CONSTRUCTIVE EMOTIONAL	2.14	0.63	2.73	0.74	2.40	0.74
SCALE 3: NON-CONSTRUCTIVE NON-EMOTIONAL	1.85	0.54	1.99	0.71	1.91	0.62
(N)	(55)		(47)		(102)	

How does the use of coping techniques affect satisfaction with life? Satisfaction with life is measured on a scale from 0 to 10. The mean is 7.60 and the median is 8.00 for the whole sample. The mean is well above the midpoint of the scale. This is in accordance with the findings one usually gets when using measurement scales for life satisfaction, happiness, etc. (Weiten et al. 2012). Boys have a slightly higher mean score on life satisfaction than girls (7.79 against 7.37), but this difference is not significant in our sample.

It is reasonable to assume that constructive coping will have a positive effect on life satisfaction, and that non-constructive coping styles will have negative effects on life satisfaction. For our data, however, correlation analysis shows only a negative significance between scale 2 and (non-constructive emotional coping) and overall life satisfaction. There are no significant

correlations between the other scales and life satisfaction. The expected correlation between constructive coping and life satisfaction seems not to be present.

There are, however, significant correlations between the scales. The correlation between scale 1 (constructive coping) and scale 2 (non-constructive emotional coping) is 0.46 (sig.=0.01). There is also a weak significant correlation of 0.23 (sig.=0.05) between scale 2 and scale 3 (non-constructive non-emotional coping).

In particular, the correlation between scale 1 and scale 2 indicates that there is a considerable group among the respondents that combines constructive as well as non-constructive emotional coping techniques. On the other hand, another group only uses these coping techniques to a limited extent. One reason can be that they experience few problems in their lives. The disadvantage

of this can be that they are not leaning on coping techniques, at least not at the present stage of their lives.

How does the combination of coping styles influence life satisfaction? We have used the median score of scale 1 (median=3.00) and the median score of scale 2 (median=2.42) to create four groups with different combinations of coping styles. Table 2 shows the mean and the standard deviations for life satisfaction for each of these four groups.

The two largest groups are the group with a high score (above median) on scale 1 as well as scale 2, and the group with a low score (below median) on both scales. This coincides with the positive correlation between the two scales. If one looks at the gender composition of these two groups, there is a striking difference. Among the 35 with a high score on both scales 27 (75 %) are girls. Among the 33

with a low score on both scales 27 (79 %) are boys.

We can see from table 2 that it is the group with a high score on scale 1 (constructive coping) and low score on scale 2 (non-constructive non-emotional coping) that has the highest mean score in life satisfaction. One should also note that the group with a low score on both scales has an almost equally high mean score in life satisfaction. Satisfaction with life sinks in the group with a high score on both scales (group 1). The group with a low score on scale 1 (constructive coping) and high score on scale 2 (non-constructive non-emotional coping) has the lowest mean score in life satisfaction for all of the four groups.

One-way ANOVA analysis shows that the difference between the four groups when it comes to life satisfaction is significant at the 5 % level. A post-hoc test

**Table 3.** Means and standard deviations on scale for overall life satisfaction. Combination groups of coping strategies.

COMBINATION OF COPING STRATEGIES	MEAN	STD.DEV.	(N)
	7.60	2.05	(99)
GROUP 1: HIGH CONSTRUCTIVE - HIGH NON-CONSTRUCTIVE EMOTIONAL	7.37	2.02	(35)
GROUP 2: HIGH CONSTRUCTIVE - LOW NON-CONSTRUCTIVE EMOTIONAL	8.29	1.49	(17)
GROUP 3: LOW CONSTRUCTIVE - LOW NON-CONSTRUCTIVE EMOTIONAL	8.00	2.18	(33)
GROUP 4: LOW CONSTRUCTIVE - HIGH NON-CONSTRUCTIVE EMOTIONAL	6.36	1.91	(14)

(LSD) for a pairwise comparison of groups shows that the difference between group 2 and group 4, and the difference between group 3 and group 4 are significantly different.

## Discussion


The empirical results indicate that relying on non-constructive emotional coping techniques seems to impair satisfaction with life. Combining these techniques with constructive coping techniques can alleviate this effect. Those who can be flexible in their use of coping techniques will have an advantage.

The gender differences in our material seem to indicate that girls have a more aware and active relation to the use of coping techniques than boys. This concerns both constructive and non-constructive emotional coping. Boys will, maybe, have to grapple with some of these challenges later in their lives.

One should bear in mind that these are schoolchildren in their early adolescence. In general, girls will be ahead of boys in their biological development, as well as their emotional development (see for instance Brody and Hall, 2010 on gender differences in emotional development). It is reasonable to believe that these differences will also have implications for a skillful use of coping techniques.

## Summary and conclusions

For the students who took part in the survey, the results can be a source of information. The results can serve as a background material for discussions about what the students might experience as problematic, and how problems can be mastered. Insight, experience and trying out coping strategies will be important experiences for the pupils in meeting with everyday problems, academic challenges in school and not the least in the relational situations where bullying among students might be the situation. In a broader perspective, coping can be seen in the light of empowerment. Mobilizing individual resources, abilities and possibilities to control and manage their own lives and make independent choices can be seen as part of the empowerment concept. These are also skills that must be learned. The central factor in empowerment is that young people are experiencing that they succeed and are able to cope with different challenges. Adequate use of coping strategies can be seen as effective health promotion.

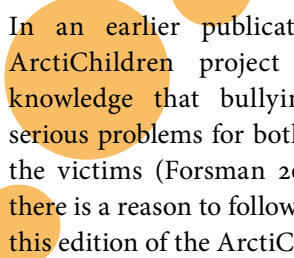
- 
- Coping strategies are of crucial importance in the development of young people's health and life satisfaction.
  - Different strategies will be convenient for different people.
  - Three different strategies identified in this study; constructive coping, non-constructive emotional coping and non-constructive non-emotional coping.
  - Girls seem to be more aware of using coping strategies than boys.
  - Non-constructive emotional coping strategies seem to impair life satisfaction. People who combine coping strategies seem to have an advantage.

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# Against Bullying - Old and New Forms of Expression, Old and New Knowledge



In an earlier publication from the ArctiChildren project it is proven knowledge that bullying may cause serious problems for both the bully and the victims (Forsman 2008). Therefore there is a reason to follow up the topic in this edition of the ArctiChildren project. This article deals with the research on bullying that is conducted mainly in the Nordic countries since 1995 until today. Much of this research builds on earlier research about bullying from the 1970s and 80s. The research has come a step further, and today, we can talk about a possible paradigm shift in the understanding of bullying.

## Introduction

Swedish Gun-Marie Frånberg was commissioned from the Nordic Council of Ministers to map work against bullying in the Nordic countries. In the report “Mobning i nordiska skolor” [Bullying in Schools in Nordic Countries] (Frånberg 2003), she calls for a wide academic, research strategy on bullying. Another

reason was the fact that Denmark took part in an international WHO survey in 1999 on children’s health behavior (HBSC). The survey showed that about 25% of the children were bullied several times a year (Due et al. 2005), and the survey was probably the main reason for Denmark’s anti-bullying initiatives. In 2001 the Parliament adopted a law on the ‘Pupils educational environment’. In Norway, former Prime Minister Kjell Magne Bondevik launched a Norwegian anti-bullying-program “Manifesto against bullying” in 2002. This was implemented in cooperation with key partners such as the municipalities, associations, teacher organizations, Office of the Commissioner for Children (Ombudsman), parent’s organizations and researchers (Roland 2014). In Sweden the school authorities in 2000 introduced the national action program against bullying, called “Tillsammans” [Together] (Sandsleth 2007).

This was some of the background when Denmark in 2007 established the xBus-program (Exploring Bullying in School) lead by Dorte Marie Søndergaard (Schott & Søndergaard 2013). This is an

interdisciplinary research project that analyses bullying from different angles. On this background, we have raised the following question:

- What are the knowledge and understanding we can deduce of the recent research on bullying, and how can we derive an effective strategy in the anti-bully-work?

## Purpose

The overall aim in the project is health promotion among schoolchildren. The definition of health promotion states: ‘it is the process that enables people to better preserve their health’ (Ottawa charter for health promotion 1986). Central to this work is empowerment which is about releasing people’s inherent resources to take a grip on their own development and control on conditions that affect their own life (Tveiten 2008). The target group in the project is schoolchildren living in the northern regions in their respective participating countries, and we assume that they are facing some common challenges.

## Bullying - expression and characteristics

In the early literature on bullying is it understood as a group phenomenon (Heinemann 1973; Olweus 1973; Forsman 2008). The word is derived from the Latin language; *vulgus mobile*, which can be translated as “the unpredictable crowd”. Bullying can, at times, be difficult to detect (Forsman 2008; Haavind 2013).

Forsman (2008) argues, ‘It can be a grey eminence who undetected controls the peers and dictates the relationships in the group’. The description of this form of bullying is quite compatible with the definition by Olweus and Roland from 1983. In retrospect, the authors have added following factors to their definition of bullying: bullied children has difficulties to defend themselves, there is an imbalance in power relationship between the bully and the bullied and there are differences between boys and girls. In the last 10-12-year period, the phenomenon of harassment in the digital media has emerged including texts, pictures, disgusting messages, spreading rumors and spreading information that the victim not even knows about. Roland (2014) describes this as cyberbullying. Bullying in more traditional forms Roland describes as contact bullying.

## Aggression

Erling Roland (2014) discusses especially aggression in connection with bullying. Reactive aggression can be traced back to the classic frustration-aggression hypothesis, which was formulated by Dollard et al in 1939 and discussed by Leonard Berkowitz (1989). The hypothesis postulates that no aggression develops unless frustration is present. Later on, researchers have nuanced this understanding. If the frustration is defined as an obstacle to achievement, the reaction depends on how basic or important the relationship is for the individual. In addition, there is a cognitive component present, where the individual seeks for an explanation for the lack of goal achievement. (Roland

2014.) On top of that, there are individual differences to tolerate frustration. Nevertheless, there is a general agreement that there is a close connection between frustration, degradation, anger and aggression. Overall, the term reactive aggression means an aggression that is triggered in response to something or someone outside oneself. The aggressive actions can be attributed to the perceived cause, they can be directed towards the outside conditions/people, or it can be directed towards one's self. According to Roland reactive aggression is not a good predictor on bullying. (Roland 2014.)

Proactive aggression is a type of behavior where an individual is taking the initiative to the aggressive action. The aggression is not provoked by others or from outside (Roland 2014). The purpose may be to achieve something materially or socially by the action. Roland holds that the aggressive action may for some be stimulating in itself. According to Roland is proactive aggression one of the most important predictors on bullying, and as such a risk factor to bully others.

## **Toward a new definition of bullying**

A summary of international research on the bullying points out that most definitions of bullying imply a negative connotation; unfriendly and aggressive actions, imbalance in the power, take place over time and the intent is more or less deliberately to inflict harm on the victim (Roland 2014). However, some researchers have pointed out the importance of adding the victim's subjective experience of bullying to the

definition. The key issue is how the individual experiences bullying regardless of whether it is often or rarely (Storfjord & Storfjord 1997; Hansen, Henningsen & Kofoed 2013; Staksrud 2013). Isolated events that individuals experience as bullying can be scary enough and maybe even incapacitating. Several researchers have advocated for expanding the perspective on bullying. Already in 1995, Zelma Fors highlighted the power perspective and the importance of emotions in her analysis of bullying in her doctoral thesis at the University of Gothenburg. A growing number of researchers focus more on conditions such as belonging, solidarity, communication, power, friendship, emotion, triggering environmental factors and conflicts in general (Björk 1999; Søndergaard 2009; Haavind 2013). Björk (1999) analyzes bullying from a relational accounting perspective. The people involved consider pros and cons regarding the existing relationship. She claims that the source of power is the uncertainty that is created in these negotiations. It is close to what the xBus project put in the term of power.

In a recent article, Hanne Haavind (2013) maintains that it is not sufficient to study just bullying, but also the social patterns that precede the actual bullying. As a rule, bullying activities occur where no adults are present, or in manners that may not immediately be recognized as bullying.

Previously we have mentioned the xBus program (Exploring Bullying in School) with Dorthe Marie Søndergaard as the leader. The program was carried out in Denmark in the period of 2007-2011. It is a comprehensive cross-disciplinary research project with

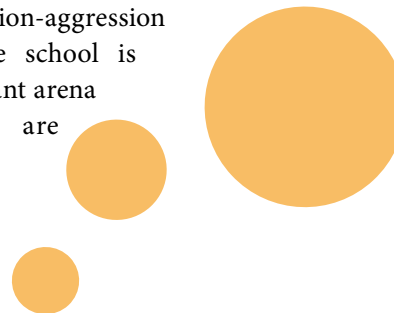
representatives from different fields like pedagogy, philosophy and law. The research group has a comprehensive production in the form of articles, anthologies and an informative web page. In a publication in English in 2013 the following definition of bullying is presented: 'Bullying is an intensification of the processes of marginalisation that occur in the context of inclusion/exclusion, which are dynamics that shape groups. Bullying happens when physical, social or symbolic exclusion becomes extreme, regardless of whether such exclusion is experienced and/or intended. One of the central mechanisms of bullying is social exclusion anxiety, which may be alleviated by the production of contempt. This contempt for someone or something may be expressed by behavior that, for example, humiliates, trivialises or makes a person feel invisible, involves harm to person or property, abuses social-media profiles or disseminates humiliating messages via technological communication. Although some members of the social group may experience these marginalising processes as positive, in robbing individual(s) of the social recognition that is necessary for dignity, these processes can be a form of psychic torture for those who are targeted'. (Schott & Søndergaard, 2013.)

The definition is somewhat different compared with definitions by Olweus and Roland, referred to earlier. The definition includes cyber bullying, which is discussed in another article in this publication. The new perspectives highlight the dynamics, played out in social settings where the sense of belonging and anxiety to be excluded is imminent among the young people present. The way we interpret Schott and

Søndergaard (2013) the key insights to understanding bullying lie in the processes within a youth group. Only when the inclusion and exclusion processes are extreme, can we talk about bullying. According to Søndergaard (2009) bullying is not primarily intended to cause harm to others, but to try out, process and retain social relationships. The attitude is that it is necessary to legitimize social exclusion in order to adapt and consolidate the balance in the children's group; bullying might be the consequence. Throughout the xBus project it became clear that bullying is a complex process and that it is necessary to include both school-home relationship, pupil-parent relationship, teacher-pupil relationship, and not the least the interpretation and design of the school's mandate. In the following, we will discuss some strategies and approaches in the anti-bullying- work in the light of earlier and more recent research.

### **Individual vs. group**

The need for friendship and sense of belonging is being claimed to be greater in adolescence than elsewhere in life. Belonging in a group satisfies both social and emotional needs, and is looked upon as a basic need, and can be thought of as an existential condition. The anxiety to be excluded appears accordingly severe. (Storfjord & Storfjord 1997; Søndergaard 2009; Haavind 2013). Because the sense of belonging to a group is crucial for children, the situation might be analyzed in the frame of frustration-aggression hypothesis as well. The school is perhaps the most important arena where relationships are



established among the youth. Accordingly, is it critical for a young person, who does not establish friendships or will be excluded from the group. In the social interaction that takes place, Søndergaard (2009) uses terms such as: inclusion- and ejection mechanisms, social exclusion that merges into social anxiety panic, relational manipulation, power of definition, contempt-production etc. She describes this as 'think about technology' and those are the concepts that can be productive for understanding the processes that lie behind bullying. In her opinion, it is necessary to gain insight into the inner processes that take place between the students in a group in order to be able to explain the causes of bullying. According to Søndergaard teenagers' comments on each other's clothes, perfume, cellphones, etc. are not incidental, transitory and indifferent.

'They constitute positioning tools in the social-emotional landscape, which the school- children maneuver in and where withdrawal and limitation as paths and movements, which can be associated with both hope and anxiety, exist'. [Author's translation] (Søndergaard 2009.)

The way we interpret Søndergaard (2009) is that it is not only the victims of bullying that are the victims. The anxiety of being socially excluded is as big for everyone, and the individual can go far in his or her strivings to be included. Group members, who feel their position threatened, can start harassing a person who is considered weaker. The individual's actions and priorities in a group are controlled by the expectations, which either may be stated openly or have to be interpreted/guessed upon.

According to Søndergaard, such processes develop what she calls contempt-production, another aspect of bullying. Søndergaard claims that it is likely to hold out the anxiety and the individual gets confirmed for his or her being and existence. This internal dynamics between youth have validity for both the bully victim, bully performer and the fellow traveller. Activities in a group might be considered as a power struggle to keep the position of the group.

### Development of friendship

Friendship among youth varies for various reasons. Hanne Haavind (2013) points out that children are developing in a different pace and for that reason have different interests. They can lose interest for each other without causing a sense of exclusion. Adolescence, therefore, is a testing out of who they are and who they might be, and young people are building their identity in this way without necessarily being excluded. Children are, according to Haavind (2013) observant of the social groups at school; some groups are closed, others more open, some are overlapping, and some individuals are completely isolated. Common to them is that they change by who is included and who is not. Regardless of how the friendships change, dyads (two and two) serve as effective protection against bullying. When children have more than two friends, they are more at risk to be excluded. (op. cit.)

To be aware of one's own resources also protects against bullying and helps to ignore bullying signals in their environment. Those children might also

be aware of such negative signals, but their inner peace, general attitudes and behavior show that they do not need to be confirmed by others. Haavind states that children are sensitive to the signals about what goes on in a children's group. They might reorient themselves according to the social landscape; find other friends, thus preventing bullying. (Haavind 2013).

According to Forsman (2008), schoolchildren can with academic and social status lead and carry out bully activities. It is possible for the school to utilize this kind of personal qualities that some schoolchildren have. They might be important helpers in anti-bully-work.

### **History of the school class**

One of the themes in the xBus project has been the class environment and the class role, and a function described with the concept of class culture (Hansen et al. 2013). In their analysis, Hansen et al developed a score for the class's culture based on the students' experiences of belonging, interaction, community, environment, etc. It is a kind of class index that can be viewed as a predictive factor of bullying. A statistical analysis of the material showed significant correlation between positive class environment and small instance of bullying. (op. cit.)

Søndergaard (2009) argues that the teacher has a central role. The teacher is the key figure in creating class culture and norms of relationships that will be the standard in the class, and the teacher must establish the framework for the development. The teacher should in other words be a clear norm-setting role model for behavior and relationships. If the class does not have this 'continuous adult

sparring partner', which Søndergaard says, the situation will be interpreted by the pupils as signals of indifference, and the pupils themselves will establish the framework for the development of relationships in the group. If the class's history is characterized by frequent change of teachers and unstable instructors, according to Søndergaard it is a critical point because there is not someone who is fully familiar with the responsibility to develop the class environment. The children feel that the adults in the school are indifferent, and Søndergaard believes that this helps to deprive the children of their dignity. Even with a system established for information and academic and social continuity of the classes, this is not enough. For the kids the social, emotional and academic processes are linked together, and the 'dignity production', will be productive through these tangled processes. (Søndergaard 2009.)

In social settings as the school, the class, and the group the pupils continuously make experiences with each other. They are participating in the social processes and they succeed and fail. Søndergaard held that the pupils experiences in the class and with the group are suitable for evaluation together with the teacher, and she claims that the teacher's function is a '...qualified and continuous adult sparring partner' (Søndergaard 2009, 49).

### **Draft for strategies in anti-bullying-work**

In Scandinavia, a number of models and applications in anti-bullying work have been developed. Five of the models are

mentioned in the article of Arne Forsman (2008). Common to them is that the programs require, in part, extensive and costly instructors. In addition, there might be a need for further support from external experts. The programs have proven to be effective, and bullying has decreased to approximately 50 % (Roland 2014). The official recommendation from the school authorities in Norway is to use either the Olweus program or the Zero-program (Roland 2014). The contents of the programs will not be elaborated in this context (see Forsman 2008).

With such proven efficiency, there is a reason to ask why not all schools and municipalities use the programs? One answer is that it requires extensive training of the responsible instructors, and therefore a question of priority; for economic reasons, human resources and time. Replacements in training staff and other key personnel may take place, and skilled people leave. A municipality will be very vulnerable if there is only one person to assist all schools in the municipality. In retrospect, it seems that the bullying in Norway has increased again compared to the decline in 2001-2004, ref. Student Survey (Wendelborg 2011). The anti-bullying work has apparently not been successful. The municipalities might have leaned too much on help from outside experts and economical support from the government. The professionalization of practice within the xBus project (Søndergaard 2009) will be to develop an analytical look and study the complex causal relationships that bullying can look like. Søndergaard held that various efforts in the form of ready-made programs, methods, and interventions have a limited value. Therefore, she does not propose much 'technical fix', but

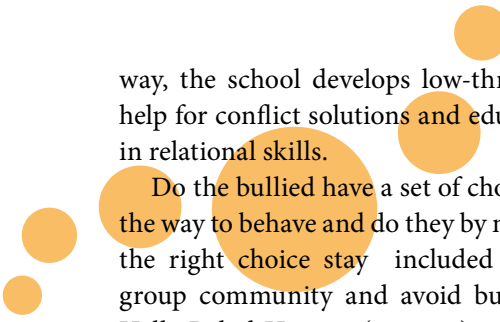
instead urges the necessity of being better to analyze the complex relationships that bullying is. As we interpret Søndergaard, the main intention is to create dignity and respectful communication between children and between children and adults. (Søndergaard 2009.)

### **Initiative on school level**

We have a hypothesis that if the school can develop a safe and including learning environment, this will stimulate the desire to learn and reduce bullying. This is all about empowerment as a means to mobilize student's resources, which in itself has a health-promoting and learning-enhancing effect. Research has shown that friendship and children's social skills are intertwined (Haavind 2013). The school is for everybody, and the teachers should have the capacity to deal with relational challenges.

How can the school introduce the topic of bullying and how can it be understood in the light of more recent information? How are the dynamics between youth, how can the relationships to other be developed, how can they maintain relationships and not least how relationships can be destroyed? What is an authoritative teacher? How to deal with violation and conflicts? How to set norms and standards for behavior and activity in the class? What can demoralize a class environment? How to exercise relational and social competence in teaching; assignments, discussions, statements, drawings, films, etc.?

This is all about to stay in front of the development, to evaluate the progress and adjust if necessary. This is not in contrast to the schools existing action plans for given acute situations. In this



way, the school develops low-threshold help for conflict solutions and education in relational skills.

Do the bullied have a set of choices in the way to behave and do they by making the right choice stay included in the group community and avoid bullying? Helle Rabøl Hansen (2013, 69) asks this question. In her research, she has surveyed teacher attitudes toward bullying and what practices they prefer in the anti-bullying work. An important point is the teachers' assumption that the students will face avoidable situations where they have to make choices, and the choices can be decisive for whether the student remains a bully victim or whether she/he is being accepted in line with the others. The strategy is to motivate and mobilize the children's resources by the question; what could have been done differently? Hansen points out that this strategy can succeed in given situations and that there are examples that have given the pupils a better existence. However, the discussion is whether this is a strategy that applies universally. Our hypothesis is that this strategy will be dependent on the single teacher's attitude and praxis. It might be successful vs. some schoolchildren, but there are a lot of children left in the school that are still being bullied.

### Teacher as leader

The teacher's role is all about dealing with a very complex reality, and because of that the teacher has a very important position in relation to the class. That involves skills in planning, clear leadership, empathy, relate to both

individuals and the group as a whole. Teachers have to be able to communicate goals and expectations and to have the ability to improvise and intervene in given situations. In addition, there are, of course, the academic activities. Overall, this is about creating a class environment that has positive repercussions both for the social interaction and learning, and this requires a variety of skills in the field of relationship-building, system expertise and analytical skills. The xBus project, when matched with earlier research on bullying, appears to be an important contribution for the understanding of bullying. Research shows that teachers who master the class management put more emphasis on building relationships. They also adapt teaching to the pupils' needs. (Midthassel 2011.) The prerequisite for success is to be present for the students and to give attention to the whole class as well as the individual pupil.

### Acknowledgment

A well-known theme from social psychology is interactionism described by both Mead (Morris 1962) and Winnicott (Phillips 1989), how attitudes to one's self are affected by and formed in interaction with the surroundings. This helps to shape our identity. Løvlie Schibbye (2009) discusses the concept of acknowledgement with a number of concepts such as: 'listening, understanding, acceptance, tolerance and confirmation' (Schibbye 2009, 263). Acknowledgement is thus of vital importance for self-esteem.

We interpret Søndergaards (2009) description of internal processes in the school children's group as a struggle of



power and position. Those internal processes are anxiety for not being accepted and assumptions about how to act in order not to be excluded. The result is bullying which in its nature is an act of insult.

In their book «The Power of Appreciation – Education, Ethics and Health» [Author's translation] Bergmark and Kostenius (2011) claim that the meeting and relation between pupils and the teacher is the fundament in the pupils' development. They hold that: 'Challenges for the future are how acknowledgement can permeate the learning environment, which focuses on relationships and organization of teaching that makes people learn, grow and feel good' [Authors translation] (Bergmark & Kostenius; 2011, 168).

### **Anti-bullying initiative from parents and young people themselves**

Almost every day newspapers and other media in Norway present stories about bullying in schools. The stories are as a rule told by former bullied or referred from cases taken to court. Common for many of the cases is that the bullying took place over time, that the school denied the existence of bullying in their school and that the bullying sometimes was so grave that the bullied had to change schools.

A typical example is a report in the newspaper Finnmark Dagblad (March 10. 2014) that tells a story of a twin pair that was bullied in high school. The report tells about a classic bully situation where the group was against the few,

some participated in bullying and some were supporters. The school remained anonymous, denied and did not intervene. The guardians had informed the school management on several occasions and the school wrote in their report: 'observed episodes with negative comments, verbal conflict, closed the doors, and more'. In the conclusion, it is stated, however, '... the xxx is not being bullied by students in 9. grade... ', and further: '... the (boys) xxx and yyy do not have a computer at home. This may be a contributing factor to that they stay in the computer room, and not in the area where the majority of the pupils are'. How can this example function in anti-bullying-work? First, it communicates information about what is going on. Second, we get some tentative access to how the school considers the problem and third, it is admirable that the victims step forward to highlight the problem.

Another example was a report in the Norwegian newspaper Nordlys (February 17. 2014). Two 17 year old girls who said they had been bullied almost through their whole school-life. A teacher had understood what was going on and took a number of initiatives to stop it. The last two years had been wonderful compared to the earlier years. The girls discovered that anti-bully-initiatives work, and they decided to start a Facebook group against bullying. Many powerful stories with similar content were shared in the group. The most important element of this initiative is, perhaps, that the girls used the teenagers' own medium, an example of positive health promotion activity through digital media.

## Summary and conclusion

The Danish xBus project focused on how relations in the schoolchildren's groups and classes are an important premise on how bullying can develop. The project discussed dynamics between the schoolchildren. The understanding we can deduce from the project is that this dynamism, practice and activities are not primarily to harm others, but to position children themselves. The existential anxiety to be excluded is imminent and the children extend far in order to keep their status within the group. The result might be contempt production and bullying.

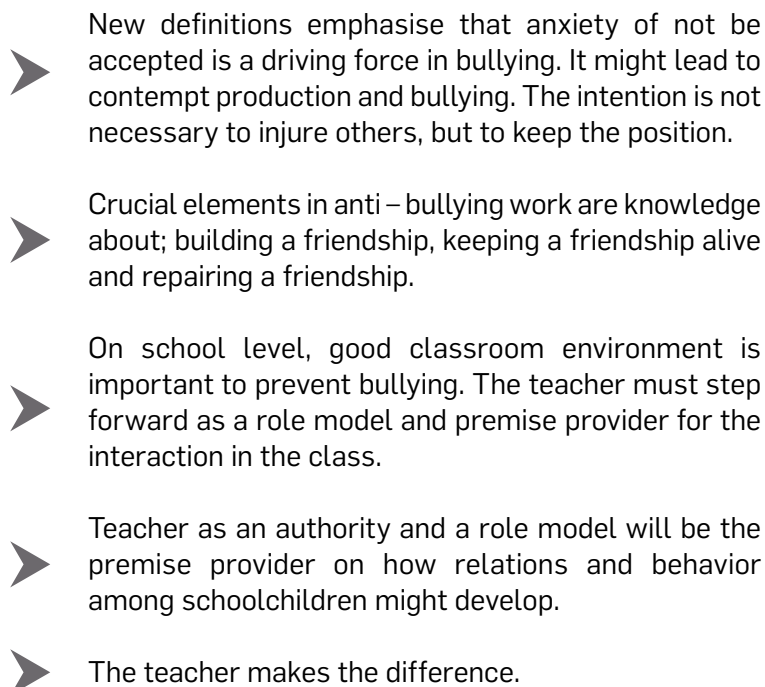
This paradigm change in research gives hope for new and fruitful approaches to stop bullying. A change of focus from individual traits regarding the aggressor and victim to the social dynamics unfolding in groups of children and young people may lead to a different approach to the problem. There might be more focus on organizational- and environmental matters. The role of the adults in the school organization, how they function as positive role models, their leadership skills, and knowledge about group dynamics also need attention. The ambition must be to take steps to prevent bullying among schoolchildren, and this needs consciousness and knowledge on all levels in the school. However, there is a need to take proactive aggression serious due to bullying exercised by individuals might still take place.

Even if programs to prevent bullying have had an effect, none of them has proved to have long lasting effects. The courses are expensive to run, and demanding in terms of time and energy

for the school personnel. Bullying is a severe threat to the mental health of children and young people. As we see, to be bullied early in life and during school years can cause severe health problems later in life. Research results mentioned above also show that children who witnesses how other children are bullied might be traumatized. Such results about the consequences of bullying have to be taken seriously.

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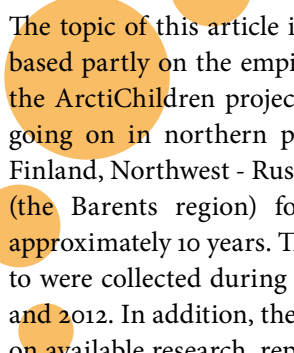
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- New definitions emphasise that anxiety of not being accepted is a driving force in bullying. It might lead to contempt production and bullying. The intention is not necessary to injure others, but to keep the position.
  - Crucial elements in anti-bullying work are knowledge about; building a friendship, keeping a friendship alive and repairing a friendship.
  - On school level, good classroom environment is important to prevent bullying. The teacher must step forward as a role model and premise provider for the interaction in the class.
  - Teacher as an authority and a role model will be the premise provider on how relations and behavior among schoolchildren might develop.
  - The teacher makes the difference.

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# Bullying – Results of Mapping in the Barents Region in 2005 and 2012



The topic of this article is bullying. It is based partly on the empirical data from the ArctiChildren project that has been going on in northern part of Sweden, Finland, Northwest - Russia and Norway (the Barents region) for a period of approximately 10 years. The data referred to were collected during 2 periods; 2005 and 2012. In addition, the article is based on available research, reports and public documents. The purpose of the article is to present trends in how bullying manifests itself among the pupils living in parts of the Barents region and how it has been expressed in the new digital life. Based on this background, I have raised the following question:

- In what ways has bullying among schoolchildren in lower secondary schools developed during the last ten years period in the Barents region?

## Definition of bullying

Dan Olweus and Erling Roland have done research on bullying issues since

the 1970s. In 1983, they were commissioned by the Norwegian Ministry of Education to develop strategies against bullying in schools. In a joint publication, they had the following definition of bullying:

- ‘It’s bullying/pestering when one or more individuals repeatedly and over time are exposed to negative actions from one or more other individuals’ (Olweus & Roland 1983).

A major analysis of the bully problem in Norway was presented by Christian Wendelborg (2011), NTNU, Trondheim, in the report ”Bullying, discrimination and turmoil in the classroom. Analysis of the Student Survey 2011”. In this report, definition of bullying is located similar to Olweus/Roland definition from 1983. In retrospect, Erling Roland (2014) added the following definition:

‘Bullying is physical or social negative actions, such as carrying out humiliation repeatedly over time by one person or more together, and directed to one that cannot defend him/herself in the current situation’.

This definition also includes digital bullying. Roland (2014, 39) names regular

bullying as "contact bullying" and digital bullying as "cyber bullying".

However, recent research with reference to, inter alia, the EU-project "Kids online" highlighted that cyberbullying has some important differences from contact bullying. Elisabeth Staksrud (2013) highlights seven key differences:

1. You do not escape
2. Audiovisual material might be used in the bullying
3. Bullying can be more easily documented
4. It is easier for the bully to be anonymous
5. Digital bullying provides new forms of social exclusion in the form of digital isolation
6. Bullying can be more socially visible
7. Bullying may be less visible to the parents, teachers and other adults (Staksrud 2013, 45ff).

From the mid 1970's a series of surveys have been conducted on bullying among students in primary school. According to Erling Roland (2014) the scope of bullying recorded in Sweden, Finland and Norway remained at about 5% referenced from surveys prior to 1983. Admittedly, some mappings have been made that have a variety of from under 4% to about 12%, but according to Roland due to this variation there are probably differences in the formulation of the questions and

the methodological approach. The premise of the 5 % estimation is that bullying takes place once a week or more (Roland 2014). I have set the same premise in the analyses and comparisons of the ArctiChildren data.

## Gender differences in bullying

Girls tend to bully girls from the same school, class or environment and are rarely bullying boys. There is a tendency that girls who bully score slightly higher than the average on their school achievement. Physical strength and intellectual equipment is more or less the same with the girls who practice bullying and their victim. Girls exercise bullying in more indirect ways by the fact that there is more teasing, exclusion and dismissal, but to a lesser extent physical aggression. The feeling of having significant power over the other was of minor importance for the girls than the boys. (Roland 2014.)

Boys use more often aggressive actions and are more violent, they are physically stronger than their victims, and can bully cross-gender and pupils from other classes. Boys who bully have school achievements that are somewhat below the average. The power factor is proving to be of great importance for the boys. (Roland 2014.)

However, a study from Canada by Pepler and Craig (1995), indicates that girls are bothering their bully victims physically at least as much as the boys. The data were collected by audio and video recordings in the schoolyard. The analysis of the material showed that



students who in advance were defined as "aggressive" had verbal aggressive outbursts every third minute and physical aggressive outbursts every eight minutes. Among the students, who in advance were defined as "not aggressive" the figures were, every fifth minute, and every eleven minutes, respectively. An account is not given for what Pepler and Craig defined as "physical aggression", but there is a reason to believe that it was all about pinching, poking, pulling by the hair etc. Pepler and Craig believe that we have previously had methodological difficulties in discovering girls' more 'sophisticated' ways to bully, while the audio/image recording provides the opportunity to get 'a peek behind the fence' and study the complexity of girls' aggression. Their conclusion is that aggressive behavior among pupils in the schoolyard is more common than we have previously thought. (Pepler & Craig 1995.)

## Consequences of bullying

In the research on the long-term effects of bullying the severe impact bullying may have on those who are victims is fully accounted for. In this context, I am going to have a brief look into the main findings. The consequences of severe bullying are compatible with post-traumatic stress disorder (PTSD) and may result in, among others, long-lasting physical and psychological distress, social isolation, aggressiveness, apathy, declining self-esteem, loneliness and the increasing tendency to suicidal thoughts. In other words, bullying can be incapacitating for the affected individuals. (Janoff-Bulman

1992; Storfjord & Storfjord 1997; Sandsleth 2007; Forsman 2008; Mathiassen 2013.) Perhaps the most serious consequence is that the schoolchildren's positive and optimistic attitude to life will get a serious kink. The underlying mental processes make the individual feel distrust towards the surroundings, and the feeling of self-worth, self-confidence and self-respect can be lost. A basic positive attitude might be completely destroyed. (Janoff-Bulman 1992; Sandsleth 2007.) It is argued further that the girls' more subtle bullying can provide even greater adverse health effects than the boys' more direct forms of bullying (Forsman 2008).

In Denmark, Charlotte Mathiassen (2013) carried out a major survey in 2008/09 about the impact of bullying in adulthood for those who were the victims and those who were witnesses to the bullying. She made an analytical distinction between potentiality of bullying experience as an observer and potentiality of being bullied. Children who observe bullying imagine that bullying might happen to them and might navigate the behavior after such experiences later in life. The bully victims were interviewed 20 to 30 years after the bullying had taken place. The most important findings were that the late effects of bullying were closely related to the emotional experiences from the bullying. For some, it was sufficient just to talk about the former bullying, to visit places where it occurred or meet people who took part in the bullying to be put in the emotional state they were in when it occurred. For others, experiences as a bully victim can be quite paralyzing to their self-esteem; later in life the victim might have a nagging doubt whether they are good enough and can master new

challenges. For others, the experiences as a bully victim may seem challenging. It can mobilize their own resources to solve problems depending on the individual's access to adequate treatment. (Mathiassen 2013.)

Long-term studies show that bullies themselves also end up in a risk zone; as adults, they are more often than others registered in the criminal records as violent conductors (Forsman 2008). A brand new study from the United States indicates, however, that bullies can also have some sort of positive effects, even health-related. William E. Copeland et al (2014) followed a group of individuals for more than 20 years, where one of the research topics was bullying. They found that bullying seems to affect susceptibility of low degree of inflammation measured by CRP - a blood test that measures the degree of inflammation in the body. The results showed that bully victims had much higher levels of CRP in adulthood than the control groups while the bullies had the lowest levels of inflammation in the body of all the groups that were compared. (Copeland et al. 2014.) This shows the complexity of the consequences of bullying and, at the same time, it does not change the need to act against bullying.

Based on this information there is a reason to believe that bullying has consequences not only for the individual person, but that it entails a great strain on public budgets in the form of sick leaves, earlier retirements and marginal relation to work life. In summary, it must be said that both bully victims and performers pay a high price, and it is a good investment to combat bullying.

## Method

The data in the ArctiChildren InNet project is based on surveys conducted among students aged 13 to 15 years of age in 2005 and 2012. In addition, interviews were conducted with students, guardians and teachers. In the course of the winter/spring of 2005, about 1400 students in the region answered a printed questionnaire that was handed out and collected by the schools that attended. The schools were randomly selected in Norway, while in the remaining countries the schools had cooperation agreements with the universities. In the period from October 2012 till February 2013, 656 school children in the region answered a common digital survey. None of the student samples were representative of their age groups. I present the data with that disclaimer. In this article, I will use data mainly from the Norwegian research.

## Presentation and analysis

### Contact bullying

The term contact bullying is traditionally associated with bullying as freeze-out, name-calling, harassment, violence, etc. (Roland 2014). Table 1 reproduces the figures about contact bullying from ArctiChildren surveys on 2 occasions; 2005 and 2012.

Data from the ArctiChildren are compared with The Norwegian Student survey, based on the official school statistics collected over the last five years



**Table 1.** Contact bullying.

<b>BOYS</b>					
	NEVER	ONCE OR TWICE	TWO OR THREE TIMES A MONTH	ONCE A WEEK	SEVERAL TIMES A WEEK
2005	74 %	20 %	2 %	0 %	4 %
2012	76 %	18 %	2 %	6 %	2 %

<b>GIRLS</b>					
	NEVER	ONCE OR TWICE	TWO OR THREE TIMES A MONTH	ONCE A WEEK	SEVERAL TIMES A WEEK
2005	68 %	22 %	5 %	4 %	2 %
2012	78 %	7 %	4 %	2 %	9 %

in Norway (Wendelborg 2011). For those who have been bullied once or more per week, figures from 2005 are more or less congruent with the Student Survey of 2011, within the 5% estimate. Although the data from 2012 shows an increase from 5 % in 2005 until 11% in 2012. This might be due to the non-representative sample in 2012. The figures from the Norwegian Student survey (Wendelborg 2011) show that from 5.0 % to 5.4 % of students say they have been bullied once a week or more in the period 2007-2011. If we look at the corresponding numbers for those, who report that they 'have never been bullied', they show a variation between 76.1% and 76.8% in the same period. The variety is under one percentage point for both the bully victims and for those who say that they have never been teased in the 5-year period. In a survey carried out by Staksrud (2013) the 5% estimate of bullying confirms. The analysis shows

that there are no significant differences between Finnmark County and the whole country at large.

If we look at the total for all the participating countries in the ArctiChildren project, 6.1% in 2012 answered that they were bullied once a week or more. The equivalent figure for 2005 was 5.0%. On both occasions, the bullying was greatest in Russia and the least in Sweden. This last analysis is carried out regardless of gender.

On the base of the fact that bullying occurs once a week or more, it seems to be confirmed that bullying remains more or less stable over a number of years both nationally and perhaps even internationally.

### Digital bullying

The questionnaire from 2012 also contained questions about bullying on

the internet; not so current in 2005. Three percent of the respondents replied that they were victims of cyberbullying. Further analysis showed that those who were victims of cyberbullying were also exposed to contact bullying. This result is something contrary to what Roland (2014) found in an earlier investigation where it turned out that there was little correlation between these two forms of bullying in his material. A review of the research on cyberbullying Elisabeth Staksrud concludes that ‘... some children are being bullied both on and off the Web, but the majority of those who experience digital bullying, will not be subjected to the traditional bullying’ (Staksrud 2013, 83).

Interviews from the last survey in the ArctiChildren project with both teachers and parents confirm that cyber bullying takes place and is presumably increasing. Individual cases especially on cyber bullying have led to police reports, and other cases show that families have moved because of this kind of bullying.

## Concluding remarks

Based on the present material we can conclude that bullying among lower secondary schoolchildren in the Barents region has increased on an average by 1.1 % from 2005 to 2012. Contact bullying seems to be the main form of bullying, but cyber bullying takes place and seems to expand Roland (2014).

An explanation for cyberbullying can be that the victim(s) do not necessarily meet face to face. The web makes it possible to harass others relatively

anonymously which may lead to a lower threshold for bullying.

Despite parents talking with their children and various efforts the schools practice about proper behavior on the internet, the problem seems to grow.

In Norway, the first innovation following the Manifesto against bullying was a two year program against bullying, and there is evidence that school bullying decreased approximately 30% during the period of 2001–2004 (Roland 2014). The decline can hardly be explained solely by ‘The Manifest...’, but there is a reason to believe that it was influenced by the Manifesto. In the years after, a new Manifesto against bullying was signed in 2005, 2006 and 2009 with the same partners. The municipalities are also invited to commit themselves to the anti – bullying work by signing the Manifest. In September 2011 currently the last Manifesto against bullying was signed by the partners, and this time it was focusing on digital bullying. In the county of Finnmark, which is the region for the ArctiChildren activity in Norway, 18 of the 19 municipalities have signed the Manifesto against bullying, per 23.09.14. (Lokalt manifest mot mobbing 2014.)

In spite of the new editions of The Manifesto, it seems that bullying remains stable as data from the ArctiChildren survey show. This is confirmed in the pupils’ survey presented by Wendelborg (2011) as well.

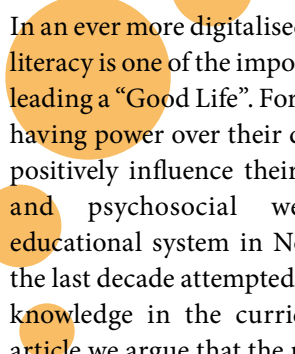
- It seems that bullying among schoolchildren has increased with approximately 1 % in the Barents region in the last ten years.
- Cyber bullying has become more visible in the same period and seems to expand.
- There is evidence that the long-term effect of bullying hits its victims with symptoms like; physical and psychological distress, social isolation, apathy, declining self-esteem and in most serious cases, disability. Even only watching bullying may be enough.
- Long-term studies of bullies show that they are overrepresented in crime statistics.
- The Manifesto against bullying is still one of the anti-bullying attempts from Norwegian authorities, but it seems that bullying remains stable.

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# Health Aspects on Norwegian Schoolchildren's Digital Life in the Arctic



In an ever more digitalised society digital literacy is one of the important factors for leading a “Good Life”. For schoolchildren having power over their digital lives will positively influence their mental health and psychosocial wellbeing. The educational system in Norway has over the last decade attempted to include such knowledge in the curriculum. In this article we argue that the results from the ArctiChildren InNet project call for re-thinking of what knowledge is actually needed for empowering the coming generation.

## Introduction

The overall objective of the ArctiChildren InNet project has been Health and Health Promotion in the Barents Region, in what can be referred to as the “Age of Digital Culture” (Buckingham 2007). The central document supporting health promotion worldwide is the Ottawa Charter (World Health Organization 1986), based on the UN declaration of human rights. The main principle in this charter is

empowerment; the health promoting process is about enabling everybody to lead an active and productive life that can be referred to as “The Good Life” or “Quality of Life”. (Lindström & Erikson 2010.) The Norwegian research theme presented in this article, discusses the health promoting role of information and communications technology (ICT) and the internet, integrated in daily life in school and in the homes of schoolchildren, aged 13 to 15, from three schools in Finnmark county in the Norwegian Arctic.

Our research question was:

- What are the ICT practices in school and leisure time and how likely is their influence on empowerment, perceived health and psychosocial wellbeing?

To be more specific, this article rises the following questions: The goals set about digital competence in the curriculum, how were they put into practice in the daily life in the ArctiChildren InNet project's pilot schools? To what extent could this competence be seen as empowering and promoting mental health and

psychosocial wellbeing? Can it also cause the opposite — bad health? What were the teachers' attitudes regarding media and digital competence? What digital knowledge and competence were exercised and mastered by the schoolchildren in those schools? What digital knowledge and competence were exercised and mastered in the homes? What are the consequences? What are the implications of daily use of ICT for children's health and psychosocial wellbeing?

## **Digital life in Norway and the Norwegian Arctic**

ICT solutions and internet entertainment, social media, games as well as learning platforms and multimodality pedagogics have over the last years become utilities, i.e. they have become integrated parts of the daily life in Finnmark as well as in Norway as a whole. Recent Norwegian statistical data from 2012 shows that in the age group of 13–15 year olds, 100% had access to personal computers at home, 54 % also had tablets, 95% were connected to the internet on an average day and 49% reported accessing the internet through smartphones (Vaage 2012). The use of smartphones has exploded over the recent years, and in the Norwegian ArctiChildren InNet pilot schools we found that almost every child in the age group had mobile phones, and most of them were smartphones. Data from the 2012 ArctiChildren InNet survey in Finnmark confirmed that parents and children in the pilot schools were rather in the forefront in making use of laptops, smartphones, game-consoles and tablets

compared to national figures compiled by Vaage (2012). Data from our 2005 ArctiChildren survey showed the same trend almost 10 years ago with 93% having at least one computer at home (Ahonen 2010). In the 2012 survey this figure had increased to 99%.

As we can see there is an extensive use of digital media in Norway. According to our surveys, in 2005, 10% of the schoolchildren spent more than 5 hours online in weekdays. In 2012, 30% of the respondents spent more than 5 hours online on weekdays. A rather excessive use, 7–8 hours and more on weekdays was reported by 4% of schoolchildren in 2005, in 2012 the number had doubled. During weekends the amount of children spending more than five hours' time online rose, in 2005, 22% were online in 2012 it was 60%, almost three times as long. The amount of those who spent 7 or more hours online in their spare time had risen from 6% in 2005 to 27% in 2012. Only 24% of the schoolchildren were online "none or less than an hour" in the weekends compared with the 44% in 2005.

## **Central concepts and theory**

"Digital age culture" is a way to refer to the digitalisation of our western societies. Concepts like "digital literacy", "computer-" or "computational literacy" are widely used concepts, definitions ranging from browsing the web and using software products and applications, to deeper knowledge about what is going on inside the computer, having programming skills, or having knowledge and opinions of the policies that govern

the internet. Buckingham (2007) argues about using the concept “digital media literacy” to cover the challenges children meet through media technology development, markets, schooling, and government policies in an even more complex cultural environment. Scientist from MIT, Papert (1980; 1993) and DiSessa (2000), creators of Logo, The Turtle project, and the latter responsible for the Boxer project, have for a long time argued for a new pedagogy, integrating digital technology cognitively through teaching the use of programming and suggest the term “computational literacy” as more appropriate for meeting a digitalised future.

Our research questions in this study deal with health and “eHealth” from an empowerment perspective. In this article we have chosen a broad definition of eHealth: the impact from media, ICT and free internet access on schoolchildren’s health. Time spent online, their choice of activities and their knowledge base regarding media literacy, and computer and computational literacy mentioned above might be factors that influence health aspects in their daily lives. As a theoretical framework regarding the health perspective we have chosen the theory of Salutogenesis (Antonovsky 1979; 1988). The way we interpret the empowerment concept is influenced by Paulo Freire (1980) and his ambitions to empower the oppressed through education, knowledge and competence. Central aspects in empowering strategies are pedagogics and learning. Concepts related to empowerment as well as health and health promotion include the locus of control (Rotter 1954), stress management, learned helplessness (Seligman 1992), and self-efficacy,

meaning one’s belief in one’s ability to succeed in specific situations (Bandura 1977). Those concepts represent important theoretical perspectives in the further discussions about eHealth in this article.

## **Methodological design, participants and ethical considerations**

In Norway three schools agreed to take part in the ArctiChildren InNet project. One of the schools represented a small town, an urban setting and an administrative centre in the coastal area, one of them a distinct rural setting, while the third school represented a kind of a suburban location to another urbanised “village-town” in the western part. Each of the three schools represented three distinctly different regions of the large but scarcely populated county of Finnmark.

Through our culturally sensitive approach we are aware of the multicultural dimension of the county today, where new immigrants contribute to the cultural and social capital. Finnmark has, since hundreds of years, represented what is referred to as “the meeting place of three tribes” – the three ethnic groups of Sami, Kvæn and Norwegian. (Schøyen 1918.) Regarding such a background we decided also to choose an expert informant from the Sami Educational Department. According to the Norwegian law we had to notify the Norwegian Social Science Data Services to get approval for the research activities. The participation of the students was voluntary, and they were free to withdraw any time they wanted to, without giving

a reason for doing so. Confidentiality was granted at any time, and it ensured that any unauthorized persons were not given an access to the empirical data. As the students were under the age of 18, their parents/caretakers had to give their written consent for the children to take part in the survey.

A questionnaire with a common set of research questions, agreed upon by the research project partners, was distributed among the 13–15 year old children in comprehensive secondary schools in all four countries. From Norway 102 students anonymously answered the electronically distributed questionnaire. The aim was a survey where ICT use, coping strategies, health aspects and perceived life quality among children in the project schools were the key issues. In this article we have chosen to focus on the set of questions regarding the ICT use, from a health perspective. From each school two parents and two teachers were interviewed in end of November and beginning of December 2012. In addition, two expert informants were interviewed in 2013 because of their special professional insight and work linked to the educational system and the digital life of the children, one of them as mentioned above representing the Sami Parliament Educational Department.

## **Empirical data - results from the ArctiChildren survey and teacher/parent interviews**

### **Schoolchildren's own views of ICT use in school related to mental health, psychosocial wellbeing and learning**

In the final question of the survey, the schoolchildren were asked to give voice to their own thoughts about ways ICT technology, personal computers and smartphones could contribute to psychosocial wellbeing and learning in their school life. Of the 77 that answered the question, the overall attitude was positive regarding the use of computers, tablets and smartphones for making the social climate better. “To talk with empathic friends on the internet when something is wrong, I know it helps! They also declared that: “being in contact and communicating with others on the internet is healthy”. The possibilities to relax while listening to music, have fun during school hours and reduce stress and tension are as such related to school motivation and health issues. “You can play funny games and then you will forget sad things for a while”. As we can see from many answers, the schoolchildren value the entertainment part of ICT use highly.

At the same time they are aware of possible negative effects on mental health issues: “instead of writing ‘bitch’ or ‘whore’, we can chat with positive words”. One of the schoolchildren recommended videos about bullying “because children like us do not realise how stupid and dangerous such a practice is...”



About ICT for educational purposes there are many positive comments like “for example, someone should invent a new smartphone app to help with rote learning”. They value the possibilities of searching for information, “googling”, writing texts, handing in schoolwork, using eLearning platforms, etc., and that it makes school-work more interesting, motivating and fun.

A minority of the schoolchildren expressing negative and sometimes anti-ICT attitudes used similar to those arguments expressed in the teacher and parent’s interviews. “I don’t think you need smartphones for learning, the teachers only need to encourage the pupils to engage in the lessons” Out of the 102 students, 25 answered that they did not know or just left the final question blank. A simple interpretation is that some students were just tired after having answered the previous 28 questions. The lack of responses can also indicate a situation where the students are unfamiliar with the possibility to influence the use of ICT to improve the learning situation and everyday school life. Such an interpretation can be seen in the light of the ten more elaborate comments.

## Teacher and parent interviews

### *Background*

Through the “Knowledge Promotion Reform” Norway has included information and communication technology (ICT) in the national curricula in compulsory and upper secondary education (1st–13th grade). The

ability to use digital tools is considered as one of the five basic competence aims together with oral skills, being able to express oneself in writing, being able to read and being able to do mathematics. (Norwegian Ministry of Education and Research 2006.) The Norwegian Centre for ICT in Education has, through research and program development for preschool children, done much to introduce them to the use of ICT at an early age (Norwegian Centre for ICT in Education n.d.). Subsequently there are good reasons to assume that children in the North through the school system are well socialized or rather well acculturated into the Digital Age culture through multimodality pedagogic programs from preschool on into the comprehensive school system, as well as through their multimedia activities at home. This is part of the cultural and social capital, and can be seen as important health predictors. (Antonovsky 1979.)

The goals regarding digital skills are as follows: “Digital skills involve being able to use digital tools, media and resources efficiently and responsibly, to solve practical tasks, find and process information, design digital products and communicate content. Digital skills also include developing digital judgement by acquiring knowledge and good strategies for the use of the Internet.

Digital skills are a prerequisite for further learning and for active participation in working life and a society in constant change. Consequently, using digital skills is a natural part of learning both in and across subjects, and their use provides possibilities for acquiring and applying new learning strategies while at the same time requiring new and increased powers of judgement.”

(Norwegian Directorate for Education and Training 2012, 12.)

### *Teacher and parent interviews*

The first question was how the goals set about digital competence in the curriculum were put into practice in the daily life of the project schools? From our teacher and parent interviews we can conclude that most of the goals mentioned in Framework for Basic Skills (Norwegian Directorate for Education and Training 2012), to a great extent seemed to be put into practice in the daily life in the project schools. Regarding “use of digital tools, media and resources efficiently and responsibly” (op. cit.), all schoolchildren in the ArctiChildren InNet project’s pilot schools had access to laptops and stationary computers in school, although the teachers report that the pupils’ private equipment was far more up to date and included tablets, smartphones and game consoles.

The schoolchildren encounter few restrictions from teachers in using the internet at school. They are encouraged to seek information and sometimes they visit “naughty websites”, something the teachers are very relaxed about, and refer to as natural behaviour in the age group. Downloading games is not allowed, and because of the limited capacity of the municipal net, there are restrictions of surfing on their smartphones during breaks. The interviewed parents showed the same open-minded attitudes towards internet use; the parents trusted their children, and gave examples where their children had asked them for help or advice when they had unpleasant experiences. Regarding gaming the

teachers were more restrictive and negative towards the activity than the parents. In one family they all shared the gaming activities to have fun and enjoy being together. The other parents generally showed little interest in computer games and to a great deal left the gaming activities entirely to the children, including making decisions of what to buy and what to take part in. In gaming activities there is apparently much peer learning.

The way the Sami informant described the digital life among schoolchildren and families in the Sami core area was quite similar as the description given by the parents and our other Finnmark informants. They also shared the wish with teachers and parents to give priority to real life learning experiences in the nature. To be responsible and to include good manners and ethical conduct in the schoolchildren’s internet activities was of great concern for all informants as well as the children. There had been some incidents of bullying that were dealt with immediately when they were discovered.

To use digital tools, media and resources efficiently is sometimes seen problematic in the light of contextual factors. Tele- and broadband infrastructure, access to hardware and software products can limit the quality of the educational use of ITC. This was the situation for the project schools. Nearly all of them mentioned the waste of time connected with bad connections and bad quality or out-dated hardware and software solutions. All schools had websites and they used commercial eLearning platforms like It’s learning and Fronter actively. The children were able to save their work at the end of the school day and resume the work at home, the

parents could follow their children's activities and it eased the communication between parents and teachers.

Generally, both teachers and parents reported close connection and excellent communication between school and home. In the interviews, however, all teachers expressed somewhat ambivalent attitudes towards the ICT use in schools. While it represents many useful tools, they found the use of ICT in teaching overrated. They all underlined the importance of outdoor life, physical exercise and sports for supporting healthy life for the children, and their ability to make good choices about life qualities, now and in the future. Also the value of dialogue competence and traditional teaching was emphasised in all teacher interviews. In some of the discussions during the interviews you sometimes got the feeling of an "active resistance" to uncritically embrace the virtues of a digitalised future. The curriculum talks about digital skills "as a prerequisite for further learning", and using digital skills as a natural part of "learning both in and across subjects". (Norwegian Directorate for Education and Training 2012, 12.)

In mathematics and writing skills both in mother tongue and sometimes in foreign languages the project schoolteachers make use of learning programs and games, often linked to the educational literature. One of the municipalities has supported the construction of a virtual math classroom; another example is the site [www.viten.no](http://www.viten.no), a service for the secondary schools, a cooperative project between NTNU, Trondheim and Oslo University. There were, however, few examples of teaching across subjects using digital skills. None

of the teachers made use of the new and popular Arduinos or Raspberry Pis, the simple and inexpensive small computers that children can program themselves, use in electronics projects and have fun with in e.g. math, physics, music and art. Programming activities from MIT for children like Sugar on a Stick and Scratch, the latter used by Kidsa Koder activities in southern Norway and the Oslo region, were unknown to our informants. It seems as the possibilities for acquiring and applying new learning strategies mainly take part in the children's ICT-use outside the school. For the most part, their creative activities seemed to be linked to gaming or inspiration from YouTube, but neither the children, nor their teachers or parents had uploaded anything created by themselves.

When talking about possibilities for using ICT creatively in school, we have to be aware of the fact that the curriculum in Norwegian schools is planned in great detail and give little room for using the creative possibilities mentioned above. For creative activities "designing digital products and communicate content" (Norwegian Directorate for Education and Training 2012, 12), the main tool in the project schools for such activities is making presentations in PowerPoint. To continue the quote from the digital curriculum: "solving practical tasks, find and process information" (op. cit.) the children make use of either YouTube or Wikipedia. The interviewed teachers were negative towards the use of Wikipedia, seeing traditional encyclopaedias more reliable. Both parents and teachers were very concerned about developing the children's capacity for judgement, scientifically, ethically and from a security perspective.

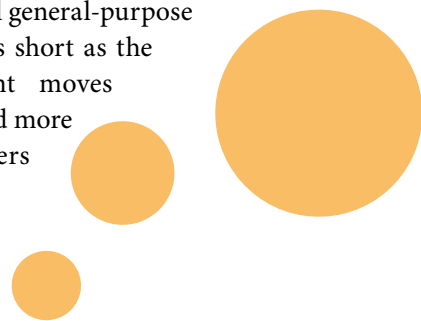
The teachers' and parents' skills regarding computer literacy are similar. They know how to handle office-related, mainly Microsoft products like Word, Excel and PowerPoint, surf and retrieve information from the internet, access social media like Facebook, the most popular among our respondents, and using services as Netflix and Skype. They buy tickets, make hotel reservations, holiday trips and use other shopping opportunities. Except for the OpenOffice from the Apache foundation they have little knowledge of free software alternatives. They also have little interest in how their computers work and they have little knowledge about internet governance and political struggles. They just take the ability to access the Internet now and in the future for granted.

## Discussion - digital skills and health/empowerment

The Norwegian Directorate for Education and Training (2012, 12) states in the Framework for Basic Skills that digital skills are seen as a prerequisite for active participation in working life and in a society in constant change. An active participation in working life and society is according to Lindström and Erikson (2010, 27) at the core of the Ottawa charter to function as "active participating subjects in our own life". This raises the question about whether those digital skills the way they are practiced in our project schools (and probably in many other Norwegian schools) are enough to secure such an active participation in their own lives, now and in the future.

In the empowerment concept education, knowledge and competence play an important role (Freire 1980). What claims of empowering the schoolchildren and preparing them for an ever more digitalised future do the digital competence goals express? As we can see in the above citations from the Basic Skills, the focus seems to be on "computer media literacy" the way Buckingham (2007) defines it, i.e. handling computer program products, retrieving information and handling digital media. Such skills point more to consumer activities, to retrieve and handle existing digital products like program packages, apps, using search engines, games and provided teaching material. There is little room for the children to be creative actors in the digital world; they are rather consequently guided into a consumer position. Using computer programs to write stories, paint pictures or compose music is, however, no more creative than doing those things without computers.

It is not enough to do creative things on the computer, using pre-made tools. In the context of the computer and of the user's digital life it is the mere consumption of those tools that ultimately someone else controls. Strong market forces guide the consumers into a position of helplessness where they have to accept the rules set by mainly Microsoft or Apple, two giants in the software market. To find alternative software and operating systems, computational skills are needed to understand functions and the capacity of your still general-purpose computers. But, time is short as the hardware development moves towards less general and more specialised computers



such as smartphones and tablets (O'Donnel, Reith, Saini & Shirer 2013) with which the capabilities are often limited by what the manufacturers choose to make available in their appstores, rather than the physical limitations of the machines.

Arguments from scholars like Papert and DiSessa for a new pedagogy, integrating digital technology cognitively through teaching the use of programming, and Richard Stallman (2010, 3–6) advocating the use of free software (referring not to price but to programs where the freedom to share, modify and run the program for any purpose has been guaranteed by its author) in order to shift the locus of control when using computers entirely to the individual users and their community.

However, development shows a strong tendency to make the consumers more and more dependent. With tablets where you can only install prefabricated and pre-approved apps or new generation laptops where you instead of installing the software use software as a service, typically marketed as the cloud, for storing your documents rather than storing them on your own computer or own private server (Stallman 2010, 209–213). To work and access your documents, you need an internet connection and electricity, the result being that the locus of control is placed beyond the individuals' reach, the self-efficacy to a large extent limited, with helplessness and stress likely to occur. Both teachers and parents reported stress and helplessness; they were talking about

frustrations with the lack of, or bad internet connection, bad software solutions etc. that

wasted both work and the learning situation.

Still, general-purpose computers are available to the children and present a wide variety of possibilities for creative use. Therefore, it is necessary to teach computational competence so children can understand and use all of the computer's capabilities to solve problems, and make it do work for them. As we saw, computational competence was low among our informants and since the 1980s the development has gone to ease the user position with more and more consumer friendly solutions, software and apps; programming competence has been left to experts. Our informants were unaware of the alternatives to proprietary software and emerging activities worldwide to regain common insight in what computers are. In addition to the earlier mentioned growing network of "kidsa koder" activities in Norway another growing computational activity are the Hackerspaces where people of all ages meet for sharing computational knowledge, programming and program development, experimenting with electronics, robots, and as Stallman (2010, 97) defines hacking: enjoying playful cleverness.

The power struggle for governance of the internet might also be a threat to individual freedom, independence, self-efficacy and good quality of life, and needs to be known to the users. So far the internet is still an organisation never seen before, organically developed by the users. However, there are both strong economical interests, with the enormous profit potentials of gaining control over the internet, as well as strong political interests in internet governance (Jonson 2010). Both the teachers and the parents

in our sample group were unaware of such a struggle. Unrestricted access to the internet is taken for granted. We believe it is important that the teachers and parents as well as the schoolchildren become aware of the need to take part in discussions with politicians about the future of the internet. Knowledge and insight is, however, needed and we recommend the schools to look into such challenges regarding the digital future.

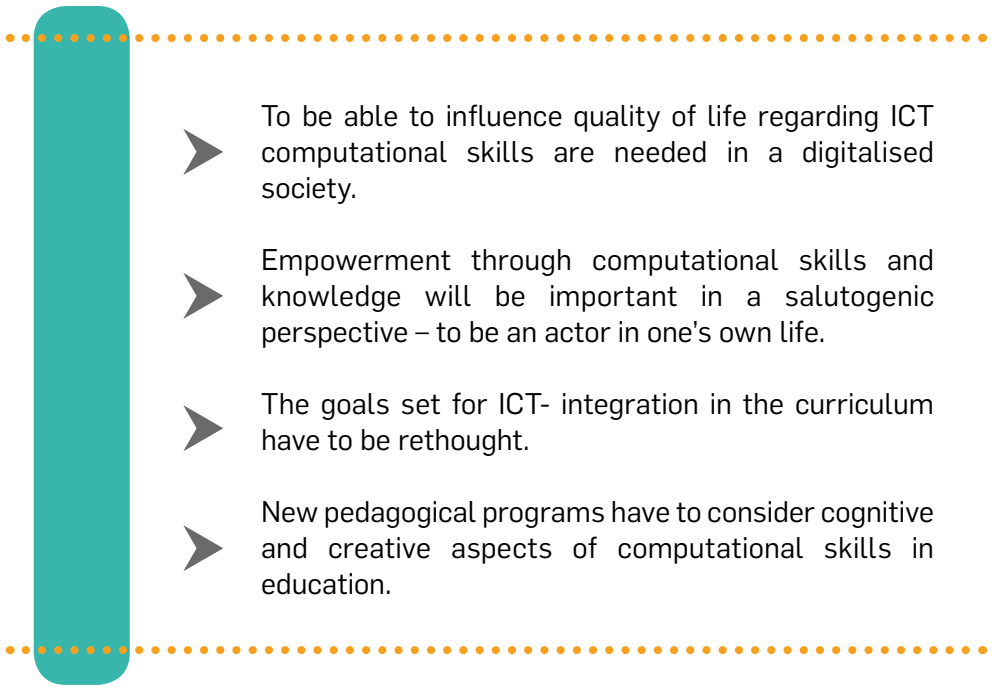
## Summary and conclusions

We have chosen the theory of Salutogenesis (Antonovsky 1979; 1988) as a theoretical framework in this article because we want to focus on eHealth in a broad perspective. In our efforts to analyse the health aspects in the digital age, Antonovsky's model of the health continuum (1979) might be useful. There he represents health as a continuum stretching from H-, a state of bad health or "dis-ease" towards H+ representing "ease" or good health.

Let us look at the digital life and mental health from an ease/dis-ease perspective.

In the results from our surveys and interviews ICT plays an important role in everyday life; it contributes positively to easiness and improves life quality in many dimensions. Easing workload both physically (industry) and mentally (intellectual activities like education and research) ease the access to knowledge for everybody. Social media eases connectivity and a wide variety of entertainment is made accessible. The public might not be fully aware of dis-ease factors in our digital world such as

surveillance, censorship, the earlier mentioned hegemony exercised by multinational enterprises in hardware and software production and copyright enforcement. Digital bullying, sexual harassment, drug communities, obsessive gaming and internet addiction are more obvious dis-ease factors. People encounter stressors daily regarding their digital life that might upset their position on the health continuum. Depending on the situation, the tension might either cause a breakdown or people find their resources to help them regain their mental health through salutogenesis and move towards H+. In a digital world computational skills represent such useful resources. From an empowerment perspective computational skills can be seen as salutogenic factors in handling stressors in an ever more digitalized everyday life to avoid a pathogenic development. Therefore, from a health perspective we will again emphasize the need for reconsidering the goals set about digital skills in school. The question is to empower the schoolchildren to be active participants in the digital development for themselves and for their future.

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- To be able to influence quality of life regarding ICT computational skills are needed in a digitalised society.
  - Empowerment through computational skills and knowledge will be important in a salutogenic perspective – to be an actor in one’s own life.
  - The goals set for ICT- integration in the curriculum have to be rethought.
  - New pedagogical programs have to consider cognitive and creative aspects of computational skills in education.

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# The Good Life and Health Orientation Compass of Schoolchildren

The purpose of this article is to search for an answer for school children's good life and health. The goal is to produce information about which point of views must be taken into consideration in school children's health promotion when developing online health services in a multicultural environment, for example in Finnish Lapland. This article is based on my way of thinking about life and health that I have scrutinized during the years (Seppänen 2010; Eirola [current Seppänen] 1996; 1999; 2003; Eirola [current Seppänen], Nikkonen and Pietilä 2000). I have applied this thinking to an orientation compass of school children's good life and health.

## Orientation to life and health – by looking for good life towards health

Human's good life and health — fitness and wellbeing — has been pondered when working in social and health care as well as in pedagogics among individuals with different ages. A good

life can be described as an orientation towards life. In that case it means describing good life, including fitness and wellbeing from a broad point of view. A starting point is a sociocultural and a historical context, where individuals' and communities' life is intertwined. A health-oriented point of view of the orientation towards life is based on this, too (compare Antonovsky 1979).

Concepts describing a good life have appeared for about 100 years. Creativity and a good control of life have bundled to each other. Riihinen (1996, 16) highlights in his article interesting observations made by Thomas, Park and Miller already in 1921 (1969) about immigrants. It was noticed that they had difficulties in participating in their new home country's activities.

Thus, it was thought that immigrants have to feel having control of their lives. Individuals were divided into three motivation types. "Philistine" is orientated rigidly towards life, "Bohemian" is lacking a firm or lasting grip of life, and "a creative individual" can lead his or her life systematically. This arouses thoughts if, for example, it is

possible to divide school children in this way, and how do they experience their readiness to control their lives e.g. during puberty.

Good life – control of one’s life – has been described as ways to handle difficulties and stressful situations that an individual encounters. Control of life has been described as a resource, when people trust in their abilities and have an influence on their lives through their actions. On the other hand control of life has been described as a goal of an activity, where individuals affect their lives by fulfilling themselves when deciding (Järvikoski 1996).

Also control of life has been described as an intentional activity, the aim of which is to reach wellbeing and to deal with obstacles in life. In this connection succeeding, orientation, and ways of acting have been brought out.

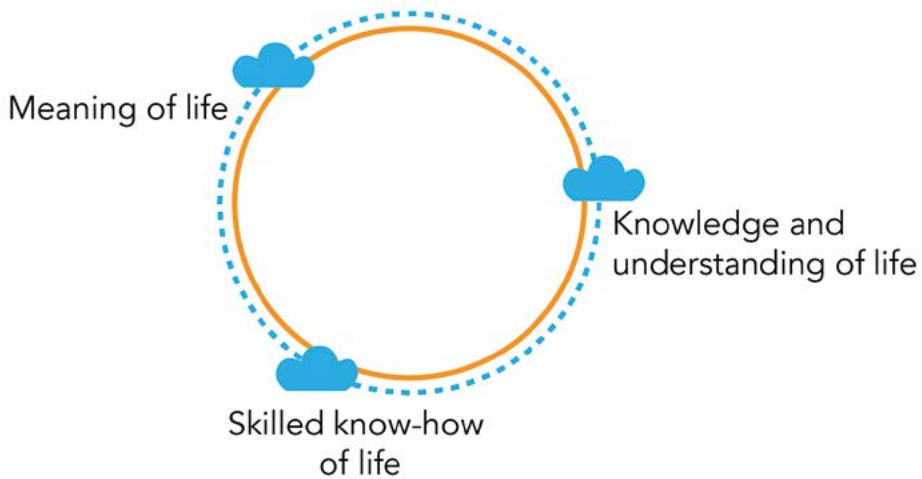
Thus, a good control of life is directed towards external and internal control. An individual acts goal orientated, if he/she has a will to reach a goal in his/her life (Poutanen 2000). This provokes the question of how goal-oriented children and adolescents can or are able to act in their everyday lives.

Hergenhahn (1990) has collected personality theorists’ opinions about this theme. For example, Maslow has expressed a thought about a self-fulfilling /accomplishing human being, when an individual acts as a champion of her/his life. She/he makes observations, is creative, notices problems, and solves them while being able to experience life profoundly. Roger’s completely functioning human being, Allport’s mature human being and Jung’s individualized human being resemble Maslow’s self-fulfilling human being.

Common for all of these is that capable persons govern and control life consciously (compare Riihinen 1996). It remains to be considered how those school children, who are not so competent and strong to act according to an ideal good life, survive.

The good life has also been described as strengths that seem to represent control of life (Carver & Scheier 2006). Strength is to stand solid in front of changes of insecure situations. In that case it describes flexibility, because of which an individual can comply in changes if necessary. In addition, she/he can change her/his life and plan the future. In general, winning in external life is emphasized, but at the same time losses are met, consequences of which have to be able to be dealt with. Thus, an individual has to hold on to her/his objectives, but at the same time be able to relinquish them. Researchers in question have suggested that strengths can be examined in three different ways. Resilience is perseverance, renunciation is a skill to relinquish from a complete unreachable, and growth is an ability to do something else and reach a feeling of control in one’s life. On the basis of this a question arises, how school children adopt and carry out favorable to ideal good life.

The good life has also been described as coping in social and health based research (e.g. Folkman & Lazarus 1980; Lazarus & Folkman 1984; Hansson & Ahlström 1999; Shaw 1999; Puotiniemi, Kyngäs & Nikkonen 2001; Tak & McCubbin 2002). Survival is based on thinking, where you can function in spite of different loading situations and losses of resources. Individual differences consist of that how a person can handle



**Figure 1.** Main themes of the orientation of a good life.

for example effects of changes in health. In that case problem-oriented individuals change their loading life situations for example by means of self-care or social support. They act rationally and deliberately when solving problems, making decisions, taking responsibility, searching for advice and knowledge, setting aims and obeying instructions. For their part, situation-oriented individuals solve loading situations being aware of and regulating their emotions. They try to search for their life a new meaning and purpose. Survival is also intertwined with a thought of empowering (Falk-Rafael 2001). Thus, it has been pondered, how individuals', in this case school children's empowering can be supported with versatile health promoting methods (compare Saranki-Rantakokko, Seppänen & Turulin 2011; Rajala, Saranki-Rantakokko & Sohlman 2013).

### **Orientation to a good life that promotes health**

Aaron Antonovsky (1979; 1987) emphasized health thinking (salutogenesis). Here sense of coherence meant general orientation towards life describing a feeling of trust. Individual's life consists of experiences that function as handlers of different positive and negative messages appearing as flexibility, personal bandages to other persons, relationships to community and cultural factors. This has been described from perspectives of understandability, controllability, and comprehensibility.

In orientation towards life comprehensibility describes the situation, how for example school aged youngsters perceive their assets and communicate in different living environments, and how logical and predictable they then experience their life to be. Manageability is experience of personal and

environment's assets. Thus, young persons can learn to trust that they can affect factors which have an influence on their lives. Meaningfulness or purposefulness indicates how young people experience their lives' meaning, and basis of values, and what kind of assets they can in that way use in different everyday life's commitments and responsibilities. In that case a feeling of coherence is not a mere means of control.

The feeling of coherence can be thought in a larger context, as main themes of the orientation of the good life (Figure 1). This includes for example school child's gradually internalized values, beliefs, everyday judgements and opinions. She or he can solve her/his life's matters in own sociocultural and historical context. When an individual experiences being healthy, she/he has a strong feeling of coherence, when she/he can make health related choices and solve health problems. (Antonovsky 1979; 1987; compare Pietilä 1994; 1998; Eirola [current Seppänen] 2003; Lindström and Eriksson 2010.) This supports the school child in taking care of her/his health, therefore, it is appropriate to think how do they internalize for example health related values, beliefs and judgements in the early life?

The orientation of a good life contains reverences, attitudes, acquired knowledge and know-how, self-concept, social relationships, and financial factors, which can be assumed to vary in different life situations. Moreover, for example family members and friends are related to school child's life, and their mental, physical and social growth and development change school aged child's experiences of life, too. When examining orientation towards life also communal,

cultural and ethical points of view are taken into account. An adolescent adopts for example her/his health habits as a result of individual and communal experiences and time. In health sciences health-promoting life control has been emphasized as a basis of young persons' health experiences. Factors that help forward school children's control of life have been observed to be one's good feeling, positive mood and experiences, relationships, course of life, subsistence, schoolwork and free time. Satisfaction to life and relationships, positive attitude towards the future, a good self-estimated health, healthy lifestyle, and minor experiences of stress as well as good subsistence and education strengthen control of life, too (compare Eirola [current Seppänen] 1999; Tervo 2000; Oikarinen 2001; 2006). Things of the same type have been investigated in Finland also with school health studies since 1996. In these studies school childrens' experienced health and health-related behavior, circumstances in everyday life and at school, and school health services have been studied largely (National Institute for Health and Welfare 2014).

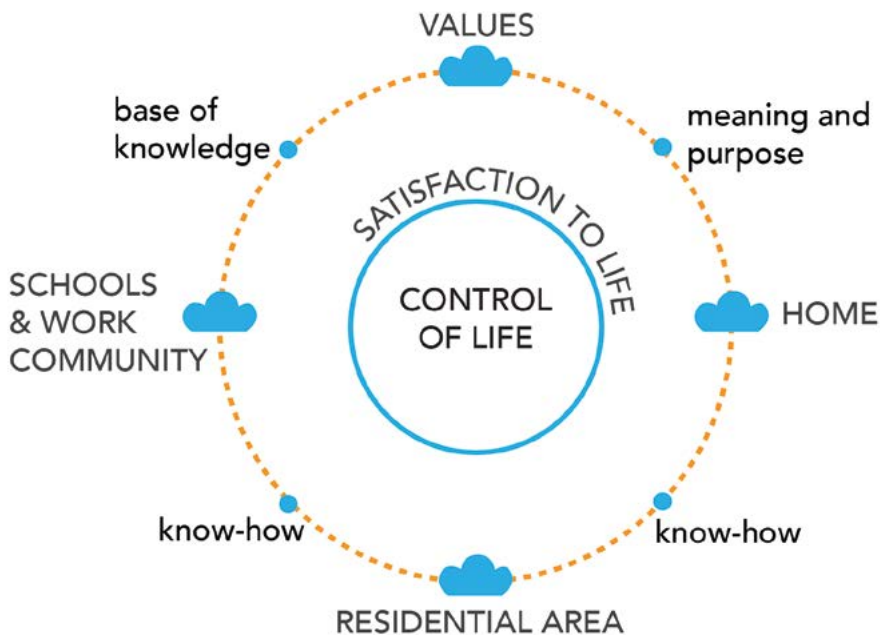
Control of life also includes the thought that an individual can influence on her/his course of life. It is divided into the first age, childhood, and youth, which are characterized by a dependence of others, socialization, immaturity, and upbringing. Usually the first important choices are made during adolescence, such as career and intimate relationship, and an active search of alternatives decreases when arriving at adulthood. Positive growth and development are possible, continuing far into adult age helping forward psychosocial wellbeing

(Antonovsky 1979; 1987). Children's and young people's cultural judgements are placed into the present and the future. Young persons are experienced as active, creating and interpreting culture. In that case, a school child's life and culture can be understood by means of this age period. (Compare Lyytinen, Korkiakangas & Lyytinen 2008.)

### Search for a good life promotes health

Health promotion is intertwined with thinking of control of life. The central part is what kind of aims school aged adolescents set themselves consciously or unconsciously. Control of life includes thus family situations, health questions, studying and working, and residential and small communities. This means

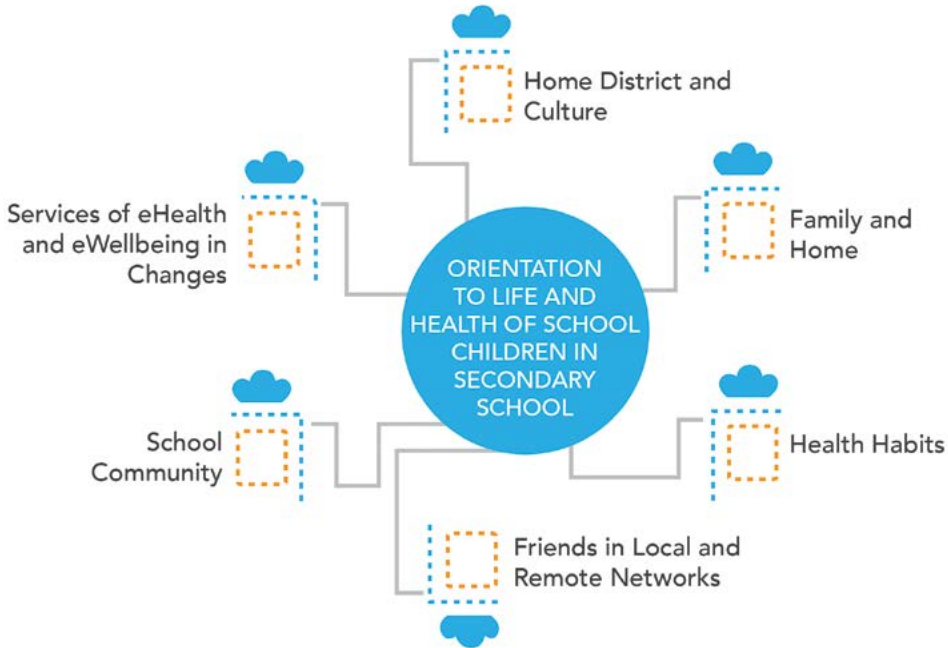
strengthening of individuals perceptions of control in the family, local and school community, and in the whole society. Individuals, who function and take care of themselves voluntarily making decisions and committing to their own choices are emphasized. Health care professionals act as tutors strengthening individuals' and local communities' assets. Observing results in health care requires systematical evaluation, because accomplishing changes in health habits requires long-term cooperation. In that case it is evaluated how for example young persons' health can be promoted by means of new methods. This means strengthening of health-related knowledge, developing different guidance methods, introduction of new virtual methods too. (Compare Saranki-Rantakokko, Seppänen & Turulin 2011; Rajala, Saranki-Rantakokko & Sohlman 2013.)



**Figure 2.** Main themes of health promoting life.



The adolescent understands the resources of his/her own life, s/he can function in changing life situations and find meaning in a health promoting, good life.



**Figure 3.** School children’s good life and health orientation compass.

The search for a good life leads also to the main themes of health promoting life. This thinking has been directed by my earlier research results, which I have collected together in figure 2. (Eirola [current Seppänen] 1999; 2003; Seppänen 2010.)

The main themes in figure 2 are values of life, home and residential area, schools and work communities. On the background of these effect dimensions of feelings of coherence, life’s meaning and purpose, know-how, base of knowledge, and in the center of these is the satisfaction to life.

## Conclusion

As a summary of orientation to a good life (figure 1) and health promoting life’s main themes (figure 2) I have collected a compass of school aged children’s good life and health orientation (figure 3). With the contents of this orientation compass can structured school children’s prerequisites for a good life and health with the help of home district and culture, family and home, health habits, friends in local and remote networks, school community and health, and wellbeing services in life’s changes be described.

School aged children can scrutinize their life and health independently or together with friends or school's professionals by means of the orientation compass. It acts as a health promoting instrument, by which school aged can be supported to self-empowering. We can also evaluate factors that intertwine with school children's everyday life and health, and if necessary support them with an eHealth and eWellbeing services.

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# Wellbeing within Art, Nature and the Internet



In my article I review the influences of art and nature on wellbeing and health by introducing examples from art and environmental activities done in schools for promoting wellbeing. I introduce the methods of art education developed at the University of Lapland that has aimed to find models to promote young peoples' well-being by multimodal art activities and at the same time produce sharable inspiring learning material for the eLearning environment of the ArctiChildren InNet project.

## Well-being from art

Several studies convince that art and culture promote and support well-being and health (see Hyyppä & Liikanen 2005; Liikanen, 2010). The practical art culture activities have taken place in the field of social and health care during the last years. This has mainly taken place by the artists following the traditional forms of expression. There are dozens of various projects in Finland and all areas of arts are well presented in these efforts. There has been operation in prisons, in nursing homes for people with disabilities and for elderly in serviced apartments of the

ageing and dementia section. (Branderburg von 2008; Jumppanen & Suutari 2013.)

The understanding that all have equal rights for culture has inspired to develop art to a more applicable direction. A good example of this is the applied visual art (AVA) master's programme developed on the environmental and community art education at the University of Lapland. The programme is targeted to bring art activities home to different communities and organization and several of the AVA students wrote their theses about the promotion of well-being of youth, immigrants or the elderly. (Jokela 2013; Jokela et al. 2013.) Art activities aiming at supporting well-being and health at school have also been started. The operation has been developed in the art education department at the University of Lapland based especially on environmental and community art. The focus of attention has been in the environmental relationship of the students and culture identity of the communities. The operation in schools in the Sámi region has required special dedication on the question of culturally sensitive art education. (Hiltunen 2009; Jokela 2008b.)

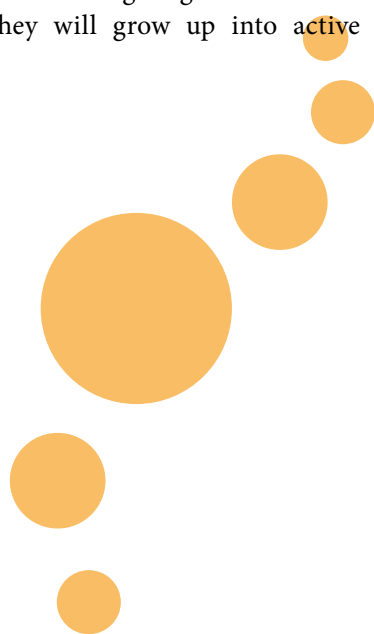
As a summary of operation done at schools, it can be stated that there seems to be two prevailing conceptions. Many think that art supports the learning objectives of health education by inspiring students to act, create visually interesting communications and offering the students an instrument to present health-related issues in a multimodal manner. The art is seen as an instrument and as a supplement to the objectives outside of art. It often leads to the weakening of the quality of art and art becomes secondary. Others believe strongly that art itself has a positive influence. Art promotes human health and well-being comprehensively. Here art is seen as an absolute value, and the art educator's own skills as the producer of creative processes is emphasized.

However, it is clear that when talking about art as the creator of wellbeing and health in schools, one moves away from the institutional and artist-centred speciality of art towards the application and ordinariness of art. At school, every student has the right for creativity and every student has a way to bring it out. Then the multimodal nature of art is emphasized. It is central to create what is significant and empowering for each student. The ability to express one's feelings protects the child and the teenagers, the instrument of art does not make a difference. Art aims at moving your senses and mind and to temp the experiences and feelings of a child. Artistic work offers a safe and symbolic distance to even sensitive issues, which may bring out something that is difficult to put into words in other ways.

It is often emphasized that artistic action supporting well-being does not need to start and search for the hidden

problems of children and adolescents. On the contrary, by sharing strengths they become stronger than before. Thus the active relationship with one's own life is increased. When new features and skills are found in oneself, also the self-esteem strengthens. These are the parts from where well-being and health creating influences are constructed.

The art education in schools is not only about expressing oneself. The well-being of children and youth mainly consists of psycho-social skills, such as interpersonal communication skills, tolerance of conflicts and problem solving skills. The community art activities offer interaction supporting instruments for learning these skills and at the same time, a way for social growth. The operations also help developing co-operative skills and positive feelings. The social methods of community art education are good ways to let the student's voice be heard and increase their opportunities to participate in school life (Hiltunen 2009). According to Bardy & Barkman (2001), children's participation is widely considered as a democratic basic question. When children and teenagers get their voices heard, they will grow up into active



adults. At its best, art education enables participation, the feeling of togetherness and engagement and provides an instrument for realizing these. Here is well-being created in the influence of art.

## **Well-being and health from the nature**

Recent researches assure that nature has influences that promote well-being both mentally and physically. Nature can be used for curing mental health. Spending time in nature has stress-releasing, relaxing influence and it also encourages for social interaction and participation. (Greenspace Scotland 2008; Tyrväinen, Ojala, Korpela, Lanki, Tsunetsugu & Kagawa 2014; Tyrväinen, Silvennoinen, Korpela & Ylen 2007.)

The nature as the children's social and physical environment offers an opportunity for winding down, relaxing, refreshing, strengthening self-esteem, clarifying self-image and easing stress symptoms. From the art education's point of view, it is significant to see that through developing senses and sensual experiences nature influences on children's and teenagers' well-being and health. The influences of nature come across multimodally through the kinaesthesia, sense of smell, sight and hearing. Nature also sharpens your senses and increases vigilance. It also activates the parasympathetic nervous system and increases calmness. (Salonen 2010; Polvinen, Pihlajamaa & Berg 2012.)

Operating in nature has been noted to have connections to the child's' cognitive and socio-emotional development. According to Salonen (2010) for example

the symptoms of hyperactivity will be alleviated when the child has an opportunity to sense elements connected to the natural environment, such as sounds and landscapes of the nature. The multimodal dimensions of senses should be noted better in education taking place outdoors in the nature.

## **Identity**

Northern forms of life have developed in close relationship with nature. We talk about northern environmental culture and psycho-social influences on people and their identities. Strong identities have a creative influence on well-being (Jokela 2008a, Jokela 2008b; Sava & Vesanen-Laukkanen 2000). However, identities are not static or stable, and they are never ready. Art and culture have a strong influence on their transformation. They are strengthened as we find a natural way to be ourselves and express it. We do not receive our identity as a ready-made package; it is a personal, more or less unfulfilled project.

The connection between artistic activities and identity is based on the idea of social constructivism. According to it, we live our life creating simultaneous narrative of it. As human beings we are simultaneously the product and the producer of our culture. Thus, identity is defined as a process and like a phenomenon. In other words, identity is considered to be a person's changing understanding of oneself in relation to the life narrative and changing environment. Art is a strong instrument at this point of the creation process of identity. Identities are represented and

constructed with images, words and stories. Identity narratives are central in the field of multicultural art activities as promoters of wellbeing (Oikarinen-Jabai 2010).

Internet has become a new forum for digital narratives. Today, producing digital material is simple and sharing it is easy. Recording one's own living world into photographs, sounds, spoken and written messages is easy and can be made with instruments from everyone's own pockets. This way one's own world can be moved digitally piece by piece to the virtual world and a digital self can be built (Heinonen 2001).

## Internet and eLearning materials

Today, children and youth play in the environments of game consoles and the internet instead of nature, and they chat in virtual worlds. These are new meeting places where more and less digitalized selves meet each other. The phenomenon has been reviewed worriedly and critically (Ruckenstein 2012). On the other hand, education is interested in the internet's world tempting children and youth. Also the new opportunities for teaching have been discussed eagerly (Metiri Group 2012). The services of social media enrich multimodal teaching by providing better opportunities for students to create their own contents to networks, either on their own or working together (Toikkanen & Kalliala 2012).

Typical materials produced to the web are for example image banks, assignment banks and different supplementary learning materials. E-learning materials

are the general name in the teaching context, meaning all online digital contents available (Ilomäki 2012).

The special target of the ArctiChildren InNet (2012–2015) project has been to develop new opportunities for promoting eHealth at schools by implementing new, empowering eHealth and web-learning methods. The art education at the University of Lapland has been responsible for developing the art-based multimodal workshops in schools and producing materials to the website of the project.

The challenge was not completely new, because the art teacher education started developing image archives and web galleries already at the end of 1990s. Archives were domains where students' pedagogic and visual documents of environmental and community art projects could be placed and which also aimed at an international exchange of experiences. The central aim was to find methods to document and record the well-being creating and dialogical processes of art. The archives were missing the current interactive dimension, such as the chance for commenting. Then, the understanding was strengthened that by saving art projects, you can share experiences and thus the knowledge could also be widened to schools. (Jokela & Huhmarniemi 2008.)

Environmental and community art was the instrument in the previous ArctiChildren project. The ArctiChildren InNet project wanted to try out other forms of art. Digital video was selected as an instrument for the reason that its format is already multimodal when combining image, sound, movement and body language. Even the movements of

**THE SPECIAL TARGET OF THE ARCTICCHILDREN INNETH (2012–2015) PROJECT HAS BEEN TO DEVELOP NEW OPPORTUNITIES FOR PROMOTING EHEALTH AT SCHOOLS BY IMPLEMENTING NEW, EMPOWERING EHEALTH AND WEB-LEARNING METHODS. THE ART EDUCATION AT THE UNIVERSITY OF LAPLAND HAS BEEN RESPONSIBLE FOR DEVELOPING THE ART-BASED MULTIMODAL WORKSHOPS IN SCHOOLS AND PRODUCING MATERIALS TO THE WEBSITE OF THE PROJECT.**

the mind can be represented with the movements of the camera at shooting a video. Only a few years ago, video was compared to a film production, now video can be shot by mobile phones and edited with PCs immediately. Because video art is digital, it can be shared in networks immediately, it has a great pedagogical potential to renew teaching (Hakkarainen 2007; Hakkarainen & Kumpulainen 2011). The workshops created models where the students told about their everyday life through filming their everyday environment.

Another development target was the diverse realization formats of a selfportrait. The nature of a portrait is building one's identity. Therefore, different individual and pair up-working methods can touch the youth's ideas of themselves, their identities, but also how they see themselves in the eyes of other students. A selfportrait is a classic form of identity work that has got a new expression in selfie images shared in the internet. The project tried to find dialogic, artistic options for selfie images. The third development target was the student's forest experiences and we looked into ways to bring students' nature experiences to be shared online.


The fourth target was to produce eLearning material for teachers to the ArctiChildren InNet website that gives stimuli for developing art activities

supporting the students' wellbeing in all seasons of the Northern school year.

## Conclusion

The special target of the ArctiChildren InNet project has been the promotion of eHealth by implementing new eHealth and eLearning methods. Regarding art, it shall be noted that the previous ArctiChildren project succeeded in developing operations for schools based on environment and community art which were empowering the school's operation and this way also students and teachers individually.

Regarding the ArctiChildren InNet project it must be mentioned that producing multimodal eHealth material through artistic activities was a promising opening, but the empowering influence of art was not sufficiently strongly presented. The reason may be that the role of art was subordinated to sharing the health education information and the empowering influence of art and the mindset of art could not be genuinely presented in the operations of the project or the website. A part of a developing artistic process is that it is very sensitive and requires commitment by the participants, and a common mindset.

- 
- Art is not only an instrument or a supplement in promoting health but has in itself the intrinsic value of increasing wellbeing.
  - Together with art the influences of nature come across multimodally through the kinaesthesia, sense of smell, sight and hearing.
  - Identities are not static or stable, and they are never ready. Nature, art and the surrounding culture have strong positive influence on the transformation of individual's identity.
  - Identities are often represented and constructed with images, words and stories. Today these identity narratives are shared through the internet as digital narratives.
  - These immediate multimodal and digital ways of sharing knowledge and experience with different digital networks, has brought great pedagogical potential also for renewing the teaching.

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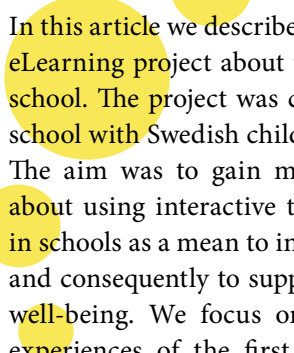


**CHAPTER III:  
THEORY MEETS  
PRACTICE**



# “We Did It Together!”

## – Teacher’s Experiences of Using Interactive Technology in Classroom



In this article we describe and discuss an eLearning project about using tablets in school. The project was carried out in a school with Swedish children in grade 6. The aim was to gain more knowledge about using interactive technology (IT) in schools as a mean to increase learning and consequently to support increase in well-being. We focus on the teachers’ experiences of the first year with the tablets, the aspects we have learned so far, and finally we focus on some implications for eLearning.

### Introduction

In the Swedish part of the ArctiChildren InNet project plan we emphasized the importance to describe and to explore the possibility of using IT to promote psychosocial health and well-being by listening to the experiences that children and youth have of health and learning in school. We wished to highlight their ideas on how IT can contribute to health promotion activities for greater academic

achievements. Empowerment and children’s voices served as the guiding stars and starting points for the project with tablets in school.

The university sent out a request to schools in Luleå, and Manda school was just about to start a project with tablets involving their schoolchildren in the sixth grade. This was a totally new project for the school and there was no former experience of working with tablets in the classroom. Manda school is situated just outside Luleå. It has about 110 pupils between the ages 6 and 13. The school had at that time 3-4 computers in each classroom, about 25 in all. Being that the number of the schoolchildren’s was 110, it was not always easy to get to use the computers. The school was very interested in being part of the ArctiChildren network, and the university was invited to follow the process with the tablets.

## The Swedish IT context in schools

For the last 20 years there has been a rapid development of supply and use of IT in the Swedish society. Not the least, the internet has revolutionized the way we work and act in our daily lives in many different ways. It has been a transformation from technological development to infrastructural changes (Riis 2000). Also in the European Union's key competences for lifelong learning emphasize on knowledge of computer applications related to a critical approach is highlighted (European Union 2006).

For seventeen years the availability of the internet among the Swedish population has increased each year, from 2 % in 1995 to 89 % in 2012 (Findahl 2012). People in the age group of 12-20 are more active in participating and commenting on various forums on the internet, downloading and watching movies, playing games and using voice over internet than other age groups. The rapid growth of the internet has, according to Findahl (2012) slightly stalled, but there has been a large increase in the use of the Internet for young people in the age of 8-13 years, between 2011 and 2012. This rose to 40 % among schoolchildren in lower school ages. Also the availability of mobile phones has increased in lower age groups and almost all teens have an access to a mobile phone, and about 50 % of children already in the age of 7-8. This increase has continued and Findahl (2013) shows that 90 % of the population between the ages of 12-45 in Sweden use smartphones, 75 % of them use it daily. The tablet is still quite a new tool and it is the young web-savvy parents with small children who are the most common

users. The use of tablets is, however, increasing rapidly also in other groups. From year 2012 to year 2014 the access to tablets among Swedes has raised from 20 % to 74 % (Findahl 2013; Findahl 2014).

The development of information technology in the society has also brought changes to the Swedish education system in different ways. The curriculum for primary school, kindergarten and preschool classes in 2011 emphasize that digital literacy should be part of the school's goals:

The school will be responsible for contributing to the goal that all pupils completing primary school can use modern technology as a tool for knowledge acquisition, communication, creation and learning. (The Swedish National Agency for Education 2010)

The school is supposed to contribute to future IT skills in work life, to reduce the digital inequality that exists between different groups in the society, to use technology as a way to increase teaching and learning (Hylén 2011; Valiente 2010). The Swedish National Agency for Education's monitoring of IT use in schools and preschools shows that the computer density among teachers has increased, but that the accessibility is not yet 100 % (The Swedish National Agency for Education 2013). The same trend can be seen among pupils whose access to computers has increased much due to directed investments in technology at schools, often in computers but also in tablet devices and mobile phones (Valiente 2010).

The teachers' needs for skills development has changed over time from software and technical skills to questions about ethical issues as well as pedagogical issues on how to use IT as a more effective

educational tool in the teaching and learning process (The Swedish National Agency for Education 2013). School children mostly use the computer to search for information online and as a typewriter and many school subjects underuse IT as a tool in the teaching and learning process. Some of the problems highlighted are the troublesome IT equipment and the lack of support. This is a barrier in the pedagogical development similarly to the unequal conditions between different schools concerning the accessibility to technology (The Swedish National Agency for Education 2013).

The school system is undergoing major changes in relation to IT. Accessibility to IT is important, but the focus in this article is what happens when IT enters the classroom. As described by Fairman (2004), the pupils often have greater knowledge about technical devices than the teacher which can lead to changing roles in the classroom (Alerby & Hertting 2011). We consider this as an opportunity to work with empowering learning processes in the classroom in practice.

## **The teachers' experiences**

During spring semester 2012, teachers from Manda school attended the conference Study materials of the future and listened to lectures concerning tablets at school. It awoke an interest and the teachers thought it would be a good way for their school to become more modern and to follow the curriculum that highlights that the schools must provide teaching in how to use modern technology as a tool for searching

knowledge, communication, creative work and learning. When the class had the opportunity to get tablets, the teacher saw it as a way of school improvement.

On one of the last days of spring semester the headmistress of the Manda school decided that the upcoming 6th graders were going to have tablets the following semester. It became a 1-to-1 project of one device for each schoolchild in the class and of the children having an instant access to the tablets. The school children and their parents had to sign a contract where they promised to take responsibility for the tablets and that every student in the class would participate in the tablet project. The school children could choose either to leave the tablets at school or to bring them home overnight.

The teacher thought that the school children's involvement from the very beginning was important so that they would feel empowered and part of the project. The semester started by thinking about what kind of apps they would need. The school children looked for appropriate ones in groups. It was not an altogether easy task because of the vast array of apps available. Furthermore, it was decided that the apps had to be free of cost. In case there was an app they really needed they could apply for the costs. One aggravating thing was that many of the apps that the schoolchildren wanted to use had an age limit of 13 and they were only 12. They downloaded quite a few different apps and after trying them out they either retained or rejected them. The rejected ones were in the majority. Finally the children settled for just a few apps.

During the year the schoolchildren and the teacher found new and better

apps. They discussed together which ones to download. The process about finding apps, trying them out and how to work with them was ongoing during the whole year and both the schoolchildren and teachers were engaged in it together.

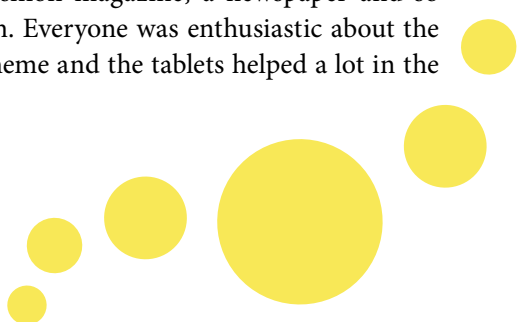
During the day all of the schoolchildren had the tablets in their desks. Before the 1-to-1 investment the pupils had to share four computers in the classroom and they could use a few more situated in other classrooms. Since each pupil now had his/her own tablet the pupils never had to wait for to access and learn a necessary technique. This created possibilities for each and every child to work in his/her own pace and, furthermore, to have the same access to information on the internet. Thus, the teacher could plan and carry on lessons in a new way, knowing the new conditions.

### Using the tablet in the classroom

Initially, the teacher's experiences of using tablets were non-existent, but as some of the schoolchildren had used them before, they learned together. Some of the schoolchildren had their own tablets and were thus accustomed to the technology. They became teachers, both to the teacher and to their peers. Some of them were schoolchildren who did not usually take an active role in the classroom. New competences became important for learning situations and traditional roles of teachers and schoolchildren where occasionally challenged in the class. The teacher thought that this created a sense of empowerment for the schoolchildren. It also led to a necessity to trust the schoolchildren's competences.

The tablets were used every day in different ways. Often the schoolchildren could choose if and how they wanted to use them. When the schoolchildren chose to use the tablets they often used them for surfing in the internet for facts. They also wrote notes and listened to music. The children all used the tablet in several ways during the school day. The tablet was a tool ready to be used for different purposes if the schoolchildren wished and if they had the knowledge to use it for that certain purpose. The schoolchildren had some restrictions in using the tablet and in terms of how to use it and what to download. Yet during the year the teacher and the children created their own common norms concerning school work and play on the tablets, based on common trust. The teacher experienced these common norms as well functioning. However, the teacher thought about the schoolchildren's degree of freedom with the tablets both during and afterwards she tested different strategies and thought that this was something important to have an ongoing discussion about, both with the schoolchildren and her colleagues.

Sometimes the children worked with exercises assigned by the teacher. One of the tasks in the English lessons was to create a magazine. The schoolchildren had to use a specific app in this exercise in order to achieve the goals in the curriculum. The school children were allowed to choose what kind of a paper they were writing: a sports magazine, a fashion magazine, a newspaper and so on. Everyone was enthusiastic about the theme and the tablets helped a lot in the





task. Since the schoolchildren had their own tablets each child could work according to his/her individual abilities. All the schoolchildren reached the goals for the assignment. Many of the schoolchildren expressed that this kind of assignment was something they would like to do even more in various subjects. Especially one student that was always very quiet and timid found a new way to express herself and show her creativity.

In addition to the newspaper task, the schoolchildren worked with creation stories from all over the world. This was also a group assignment and it required the use of tablets to make a movie as presentation. Each group solved the assignment by making paper dolls and other pictures with which they told their creation story. The schoolchildren were filming their presentations and showed it to the class. To be able to do this they had to get a cable to the Active Board and had to wait for that cable for a couple of months. All in all, these were good examples of working with multimodalities and the teacher saw them as positive learning experiences for the children.

One of the ideas from the teacher was to start a class blog for schoolchildren, parents and teachers where the schoolchildren could write about the activities and the teachers could publish homework every week. The municipality had decided that all schools were to use a special learning management system. In that system you could set up a blog, which the schoolchildren and the teacher did. It became a big disappointment when they discovered that the system did not work on tablets, and the blog was not further developed during the year. Both the schoolchildren and the teacher somehow lost interest in using the blog as intended.

During the two semesters that the Manda school class had been part of the ArtiChildren InNet project the schoolchildren gained a lot of experiences. From the project's intentions regarding the importance of the children's voice to be heard, the schoolchildren got an assignment that involved their experiences. The schoolchildren were divided into groups to create a presentation with the name of What would you like to tell? The purpose was to tell another class what they ought to think about if they were going to use tablets. The groups made presentations to the rest of the class. That was an important contribution to the focus on empowerment in the project. The teacher found it essential to involve the schoolchildren in the development process of tablets in school.

### **What has been learnt?**

The teacher observed that the communication between the schoolchildren in the classroom transformed in a sense that the children who had not talked to each other before now were starting to cooperate around the tablets. They also became more interested in reading the news on the internet and to talk about them together. The teacher did also communicate with each child by using the e-mail.

In retrospective there were some things that the teacher thought would have made this experience even better for the class. First of all she wished that a training course concerning how to handle the tablet had taken place as planned. The teacher had wished to get to know more about the tablet, its

possibilities and how to use it in different subjects. The first couple of weeks the class was learning to master the tablets, mostly by playing and trying them out in different ways. That was a good way to start the use of the tablets. But after a few weeks it would have been important to get education in its use to be able to move forward. The situation for the teacher was that she had to do it on her own together with the schoolchildren during both semesters. This worked out well but the use of the tablets did not reach all her wishes and intentions.

It is easy to believe that when schoolchildren get a lot of independence over the use of tablets the device is mostly going to be a toy. Something that surprised the teacher was the schoolchildren's attitude towards the tablets: they saw the tablet as a tool in schoolwork and not as a toy. The schoolchildren showed that they could separate leisure time from lessons. Something that did not surprise the teacher was that after the first sense of novelty many of the schoolchildren chose to work on the laptops instead, because the tablets' lack of keyboards.

The most positive aspect of this project, according to the teacher was that the access of all schoolchildren to a tablet leads to equality. Another positive aspect was that the tablets in some ways changed the social structure: schoolchildren who had not been engaged in each other before now found new ways of socializing. Both the teacher and many of the schoolchildren needed a lot of help in the beginning. They got it from the

experienced ones in the class. According to the teacher it is crucial to have the courage to let the schoolchildren have a prominent role in the development process.

## Some final reflections

As mentioned by The Swedish National Agency for Education (2013), lack of technical support and opportunities for competence development for the teacher was also evident in this project. It was also evident, in line with Fairman (2004) findings, that the school children had more competence in the technical devices than the teacher which also was highlighted by Alerby and Hertting (2011) and it affected the roles in the classroom. The teacher was very well aware of the lack of her own experiences and competences, but for her this was mainly not problematic. Instead, she let the schoolchildren become co-creators of the learning process which led to empowering learning processes.

The school is, as stated by Hylén (2011) and Valiente (2010), supposed to contribute to future IT skills in work life, to reduce the digital inequality that exists between different groups in the society, to use technology as a way to increase teaching and learning. Access to computers has increased, which is positive. But IT in schools is not merely a question of availability. The pedagogical questions are equally as important.

Hopefully this project can contribute with some insights to the further development of IT in schools in general. Therefore, we will highlight some key points, based on the experiences from the project of introducing tablets at Manda School. When eLearning is introduced in schools we think it is important to:

- Embrace the schoolchildren as co-creators in the learning process.
- See that variation promotes diversity and equality in school children's learning.
- Emphasize learning before control; as the teacher dares to let go of control but at the same time is responsible for the learning process.
- Have good supportive framework conditions; school administration, skills development and ongoing access to pedagogical and technical support.

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# Interaction of Family and School in a Common Information Space

This article reflects on the specifics of interaction between families and the school in a modern information space. It is exemplified by the best practices of the pilot schools within the ArctiChildren project in Murmansk and the Murmansk region. These practices are a good illustration of effective interaction between school and family communities.

Establishment of information educational environment of a modern school is one of the most important indicators of modernization in the Russian education system. The active use of modern information technologies naturally transforms the modern educational environment in general, including specifics of the interaction of the teacher and the parent community. Building new information field interactions, family and school, thus, are called to combine their joint influence and dialogue in real and virtual spaces.

## **Interaction between family and school: theoretical approaches**

Researcher O.V. Sementsova (2010) offers the following definition for the information educational environment: "... it is a systematically organized collection of funds data transmission, information resources, communication protocols, hardware and software and organizational methods, oriented to satisfy all the needs of users in information services and educational resources" (Sementsova 2010). Researcher O.A. Schekina (2006) emphasizes that "the phenomenon of information interaction of family and school is an ordered set of flows of social and educational information, which can help to solve problems of family and school education". Interaction of the family and the school is naturally understood as a holistic process involving not only the coordination of actions, but also mutual influence, while providing certain conditions; the integration of educational process subjects interaction (Schekina 2006). Note that in this context, social

and educational streams of information will include information about:

- school and family interactions as subjects
- legal basis of this interaction
- features of family and school education
- educational opportunities for the socio-cultural environment
- form of interaction between the family and school in various problem situations etc.

In the Russian educational tradition, the most active cooperation with the school in real space is usually performed by the selected group of parents of a particular class (parent committee), organizing a series of socio-educational activities and deciding on organizational issues concerning the life of the school community. Establishment of a school environment greatly expands the general field of such interaction and creates conditions for more effective involvement of a wider range of parents in the educational process.

## **Development work in the Murmansk region**

All the conditions for the development of information exchange between the family and the school have been created in Murmansk and the Murmansk region. "Conception of the Unified information educational environment in the Murmansk region in 2014-2020" (2014), based on the "Strategy of Information Society Development in the Russian Federation", has been developed. The document draft reflects the following prerequisites, or the basis for the

development of the concept: development of legal and regulatory issues of informatization; uninterrupted access to the internet resources for educational institutions; purposeful provision of educational institutions with modern equipment; creation of a system of professional development for teachers; implementation of the concept of "Introducing modern information and communication technologies in secondary education institutions of the Murmansk region", eSchool of the Murmansk region for 2011-2013", approved by the Government of the Murmansk region dated 24.06.2011. (See Concept of developing... 2011; Target indicators of efficiency... 2013.)

All educational institutions in the Murmansk region have their official websites. Since 2008, the educational portal of the Murmansk region has been operating in the region. Since 2012 as a regional repository of digital educational resources. One hundred percent of the priority services in the education system have been converted into electronic form. In addition, the following projects are implemented: an electronic journal and electronic diaries as means of interactive educational relations of all participants in the primary school, "Creating a secure educational network in the Murmansk Region", INTEL: training for the future, Microsoft: academy of teachers, etc. According to the data from the third quarter of 2013, the average number of learners per one personal computer in the educational institutions (PC) is 8. The number of pupils per personal computer in an educational establishment with an internet access is 11 people. The share of educational institutions with computer classes, consisting of not less than 7

personal computers running in a single local-area network with a broadband Internet access is 97, 7%. The share of educational institutions, using electronic educational resources in the teaching-learning process is 99.4%. (Target indicators of efficiency... 2013.)

## Good practices in the ArctiChildren pilot schools

As an example we can use the official site of the ArctiChildren project pilot school Murmansk gymnasium #5. The official website is [www.gymn5.wordpress.com](http://www.gymn5.wordpress.com). This site has an indication of what electronic services the parents of the students can get, including information on the organization of public and free secondary education; information on the results of examinations, testing, and other entrance exams; admission to the educational institution; information about the progress of students; the data of the electronic diary and electronic journal; information about the curriculum and programs of courses, subjects, modules, etc. In addition, there is a link to the hotline number where parents can address any questions related to the organization of the final certification of students, express their comments and suggestions, and discuss the problems and potential conflicts.

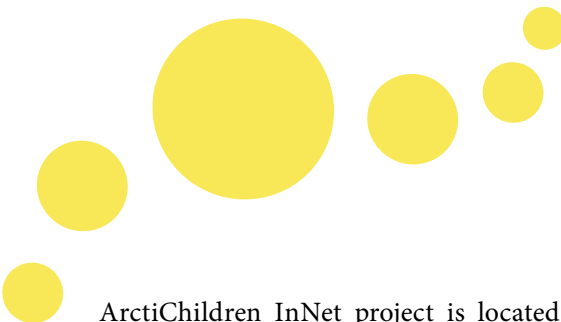
A special section of the website of gymnasium #5 is called "Students and Parents". This section has information on health and psychosocial well-being of students. For example, there is material on "What do you need to know about the flu", which explains what the flu is, what are the signs and symptoms of the

disease, methods of contracting influenza, as well as the prevention of it. In addition, it has material "My child - gamer", which describes the dangers of the virtual world, parental fears, the specificity of computer abuse, and the methods by which you can avoid becoming computer addicted. In addition to the above, there are materials on the characteristics of the polar night, school food and specifics of the school uniform. (To students and parents 2014.)

All of the topics indicated on the site were developed in the course of work within the ArctiChildren project and are part of the electronic health of the students. The administration and teachers at school say that these sections are the most visited by parents and by the students themselves. As practice shows, communication in the electronic space is combined with communication in real space which enhances the efficiency of interaction of the parent community and the school, and the quality of student learning in general.

**ArctiChildren InNet project's own section in the website of the Kandalaksha school no 19:**

Another good example of the development in the ArctiChildren project is the website of the pilot school number 19 in Kandalaksha (<http://kand19school.ucoz.ru>). The site of this school has a separate section dedicated to the project, where the presentation about the



ArctiChildren InNet project is located and where the model of electronic health is described as innovative (ArctiChildren InNet project introduction 2014). In addition, as a result of the work in the project, there is a section "Safety and Health", which contains the following topics: "Health- a Key to Success", "Priority - Health", "Physical culture – Hurray". Within the theme "Health - Key to Success" there is a questionnaire for students "Physical Education in the life of the student", materials of the target program "Priority Health", model of work of an educational institution "Desired conversation", in the course of which the prevention of psychoactive substances use is carried out (see Health! – the key to success 2014).

Thus, interactivity in terms of parent – teacher - pupil is presented in a diversified range. Parents can use the services of an electronic reception: submit an application for admission to the school, in daycare, provision of any additional educational services; express a particular desire of school administration etc. Through electronic resources one can get acquainted with the school schedule and the changes in it. In the electronic diary, which is similar to a paper version, each parent can see the daily evaluation of the child in all subjects, average grade, homework on the subjects, some comments and / or recommendations of a subject specialist, or the classroom teacher. We should note that all of these

services are provided free of charge to parents. To ensure confidentiality of the information to each parent at the parent meeting a username and password to access the information of the diary are issued. Parents can get acquainted with the child's academic performance. Subject teachers, in turn, may have access only to the page of the classes where they teach their subject. Director and / or the head teacher have access to view all the resources, but cannot change the term and the year.

Before long, the introduction of paid sms-notifications or information by e-mail about the arrival of the student in school, the outcome of individual achievement in subjects within specific problem areas, performance monitoring, analysis of tests, etc. (a system of parental control) will be part of the eSchool system.

We note that the introduction of the eSchool and the electronic diaries, in particular, was generally positively as evaluated both by the teachers and parents in the community. Naturally, the process of filling in the electronic diary, electronic journal, and inputting the information content are time-consuming and in some way increase the length of the teacher's workday. Such interactions are relatively new to the modern Russian school, but it is already obvious that we have found another way to integrate the school and parent community which in the near future will ensure the achievement of both qualitative and quantitative results.



In conclusion, we note the following:

- Interaction between the family and the school is an important factor which influences directly the schoolchildren's health
- The level of school health depends on the quality of organizing such interaction
- Forms and methods of interaction in the "family and school" system should be various, and the specificity of both the school and the family should be taken into account
- The best practices presented in the ArctiChildren project can be an example of an effective organization of interaction between families and schools.

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# Cases for Establishing Health Promoting Environment in Russian Schools

This article presents different components necessary for creating a health promoting environment applied in the modern Russian school. Special attention is given to forming a lifesaving virtual environment. Successful practical experiences of the pilot schools within the project ArctiChildren in the Murmansk region serve as an example.

## Introduction

In the course of a learning process, today's school focuses on protecting children's health. A positive solution to this issue leads us to the problem of education quality, because only a healthy person can fully assimilate and realize the knowledge. Despite the fact that in social practices the leading role belongs to the learning function of a school, there is a growing attention to students' health when assessing the extent and quality of education. That is why a school should be considered not only as a learning environment, but also as a special

environment with an impact on human health.

## Challenges to promote children's health in Russian schools

According to the Russian Ministry of Health, only 14% of children are basically healthy, 50% have functional disorders, 35-40% chronic diseases (Vainbaum 2005). Institute of Hygiene and Health of Children and Adolescents NTSZD RAMS notes that a significant number of students have several diagnoses: 10-11 years 3 diagnosis, 16-17 years 3-4 diagnosis, and 20% of teenagers have a history of more than 5 functional disorders and chronic diseases. Experts note that the most pronounced growth of diseases is observed at the age from 7 to 18 years, i. e. during studying at school (Kuchma, Sukhareva & Stepanova 2009).

Human health, defined by the World Health Organization as a state of complete physical, mental and social wellbeing and not merely the absence of

disease has been estimated to consist of the following factors: heredity (20%); environment (20%); health care factors (5-10%); individual lifestyle (living conditions, lifestyle, diet) (50-55%). At the same time school environment factors make 27% i.e. 2,7 times more than the health saving factors (Kuchma, Sukhareva & Stepanova 2009).

At the school there are many factors, which are affecting the state of the children's health: learning process intensification, new forms of training, school day duration, school stress, and lack of physical activity (Karaseva 2005). In today's schools there are many challenges for developing more methods to manage health promoting environment. In this respect, there are a number of contradictions that reflect objectively existing problem to find the necessary conditions for school activities aimed at developing a health promoting environment for students.

In Russian education there is a range of legal documents to develop a health promoting model. These are the laws of the Russian Federation "On Education", "On sanitary and epidemiological welfare"; "On the basic measures of health care in the Russian Federation"; a Presidential Decree "On urgent measures to ensure the health of the population in the Russian Federation"; Resolution of Chief State Sanitary Doctor of the Russian Federation (2010) "On Approving SanPin 2.4.2.2821-10" Sanitary requirements for the organization and training in educational institutions ", from December 29, 2010 №189; Order of the Ministry of Health of the Russian Federation from May 30, 2002 # 176 and the Ministry of Education of the Russian Federation "On Measures for Improving

Children's Health Protection in the Russian Federation" #2017 from 31.05.2002, Ministry of Education and Science of the Russian Federation of December 28, 2010 №2106 "On approval of the federal requirements for educational institutions in terms of the health of pupils, students"; an international document "Convention on the Rights of the Child" and others.

Constant work on seeking ways to improve the structure and content of general education involves organizations of health promoting educational environments based on health promoting technologies (Letter of the Ministry of Education of the Russian Federation 2002 № 13-51-104/13).

## **Components of a health promoting learning environment**

Compulsory directions of work on creating health promoting environments in Russian general education institutions are formulated in the letter of the Ministry of Education of the Russian Federation from 26.08.2002 № 13-51-104/13 "On work of experimental general education institutions within Health promoting technologies":

- Rational organization of educational processes in accordance with sanitary norms and hygiene requirements;
- Rational organization of physical activity of children, including physical education classes provided by the program, dynamic breaks and active breaks in the

daily routine, as well as sports and mass activities;

- The organization of nutrition of children;
- The system of work on the formation of health values and healthy lifestyles.

Taking into account the health promoting technologies specified in the letter, directions of health promoting activities in educational institutions, based on the above-mentioned legal documents regulating the process of preserving and strengthening the health of children, allow to distinguish the following components of a health promoting learning environment:

**1** Optimization of sanitary conditions for learning (physical position of educational institution; its premises, building, facilities, air temperature regime and, natural and artificial illumination, water and sanitation; premises and facilities of educational institutions situated in adapted buildings, its sanitary and maintenance condition)

For example, the building of an educational institution must be located in a residential area; its territory must be fenced and landscaped with greenery. Greenery must be not less than 50% of its territory. When the territory of an educational institution borders with a forest or gardens, its area may be reduced by 10%. The school territory should include areas for recreation, sports and maintenance. It is also allowed to have a zone for learning and experiments.

As for the buildings themselves, it is recommended to allocate a separate

block or building for primary school classrooms, rooms for first grade pupils should be located up to the second floor and rooms for the second and third grade pupils up to the third floor. For secondary school pupils it is allowed to allocate separate rooms for each school subject. In educational institutions located in rural areas, it is allowed to use one classroom for two or more subjects, also equipment should be placed with respect to good visual conditions, working posture and preventing posture disorders in children.

Buildings of educational institutions are equipped with centralized heating and ventilation systems that must comply with design and construction and provide optimal parameters of the microclimate and air. The air temperature in the classroom with normal windows must range between 18-24 degrees Centigrade and the relative humidity between 40-60%. In extracurricular time with no children inside the temperature should be maintained at not lower than 15 degrees Centigrade.

In order to maintain optimal air and temperature mode, which is necessary for normal performance of children it is important to keep a ventilation regime during the breaks, before and after classes. Duration of ventilation is determined by weather conditions. On warm days, it is advisable to keep the windows open.

There is a number of requirements for natural and artificial lighting. Classrooms should have a left side natural lighting. The main light should not be in front of or behind the students. Classroom windows should be oriented on the southern, south-eastern and eastern side of the horizon. To the northern side of

the horizon there can be classrooms for drawing, painting, and computer studies. It is recommended to have curtains of light-colored fabric with a sufficient degree of light penetration, good light scattering that should not reduce the level of natural light. Artificial lighting in classrooms is provided with appropriate light levels and light quality indicators in accordance to the hygienic requirements for artificial lighting. At schools fluorescent lighting is used with lamps of different spectrum: white, warm-white, and natural white.

The building of educational institutions should be equipped with centralized systems of domestic water supply, sewerage and drainage in accordance with the requirements for public buildings and facilities in terms of drinking water supply and sanitation. Educational institutions are provided with water that meets the hygiene requirements for quality and safety of drinking water (Resolution of Chief State Sanitary Doctor of the Russian Federation 2010).

## **2 Rational organization of learning processes and the study workload**

Indicators of rational learning process organization are: optimal amount of study workload - number of lessons and their duration, including the time spent on homework; minimum amount of extracurricular classes; physical activities, short exercises before classes, PT lessons, sport events (Resolution of Chief State Sanitary Doctor of the Russian Federation 2010).

## **3 Ensuring adequate nutrition for children in an educational institution**

Two hot meals a day (breakfast and lunch) should be organized for school pupils. Children attending a day care group should be provided with an additional afternoon meal. School catering should be organized in accordance with sanitary and epidemiological requirements for the catering organizations (Resolution of Chief State Sanitary Doctor of the Russian Federation 2008; 2010).

## **4 Improving the system of physical education (including proper distribution of students in medical groups for physical training)**

One of the most important aspects is proper distribution of students in different medical groups for physical training. School children are divided in different medical groups according to the following criteria: the level of health; anatomical and physiological characteristics of the organism (physical development); functionality; physical fitness (it is determined by the physical education teacher). Distribution of students in medical groups is held by a pediatrician or school doctor (based on the previous data from polyclinics or routine check ups) at the end of the school year. In this case, it is necessary to take into consideration opinion of the P. E. teacher. (Letter of the Ministry of Education of the Russian Federation 2002 № 13-51-263/123.)

## **5** Ensuring psychological comfort to all people involved in the learning process

Psychological comfort in the whole educational institution and in separate classes can be judged by the criteria that allow us to estimate the level of psychological well-being of the students. This above all is: the level of anxiety at school; formed learning motivation; social status of child in class (recognized or not recognized by peers, leaders or rejected children). A good psychological climate in class is reflected in the absence of rejected children and the presence of at least 4-leaders among 20-22 pupils; and an individual teaching style. According to the pupils' test results a teacher chooses the appropriate communication style. At the same time the following criteria are taken into account: sympathy, empathy, humanism, and the individual characteristics of the pupil.

## **6** The use of health promoting learning technologies

This means avoiding the forms of authoritarian pedagogy, which usually focuses on the "average" pupil. Desire to stick to those learning of technologies, which have a large health promoting effect: pedagogy of cooperation; developing learning of technologies using the potential of each child.

## **7** Widespread use of educational programs in the field of health

Since 1990 in pedagogy the concept of a "Promoting School Health" has been firmly established. This is a school which implements a system of activities with the leading role of health education. The problematic side of this issue is that the proposed "health" programs are recommended as extracurricular activities, which consequently increase the total academic workload and are an additional disease risk factor.

## **8** Integrating health measures in the learning process:

a) aimed at enhancing adaptive capacity of the organism: optimization of pupils nutrition, cold water treatment, massage of biologically active points and areas (BAP), breathing exercises; b) aimed at the removal of visual fatigue: use ophthalmologic training devices, gymnastics for the eyes during the lesson, teaching literacy in the mode of distance vision; c) measures to reduce the static tension of the musculoskeletal system: exercises that form a correct posture and strengthen the muscular corset, outdoor games; d) activities aimed at reducing emotional stress and improving functions of central nervous system (CNS): muscle relaxation, and the use of functional music.

## 9 Providing family counseling aimed at improving health and social adaptation

Family counseling is usually carried out by a school psychologist and by a recommendation from physicians, social workers and teachers. The main value of this kind of work is: providing psychological assistance to children and families, aimed at improving children's mental health, preventing and overcoming deviations in emotional state, personal development, and social maladjustment.

In recent years the number of online and other electronic forms of counseling through the use of official school website has increased. Very often, a school psychologist or a social worker receives questions, which need to be answered no later than in three days. The sender of the message gives his real name or a nickname thus making communication anonymous. After receiving a response, the question with detailed answer from a specialist is put on the website so other users who have similar problem situations could read it.

## 10 Organization works to improve teachers' health

A teacher, being a role model for the students, an example for them, should demonstrate his/her commitment to a healthy lifestyle. School teachers are regularly sent for medical examinations.

## 11 Training teaching staff on children's health

In order to increase the teachers' awareness and competence of factors that increase the possibilities for school health promotion, they are regularly sent to participate in various conferences, seminars and training courses.

## 12 Health monitoring

Monitoring is carried out in order to obtain information necessary to make justified management decisions to improve the health of the population; it allows to determine the causal relationship between the state of physical health, physical development of children, adolescents and young people and the impact of factors of the human environment (Resolution of Russian Federation Government 2001 № 916).

Health monitorings, conducted regularly by schools, allow identifying the dynamics of the health status of students, and thus carrying out the control over the implementation of the above mentioned measures, preserving and strengthening the health of children. In the future, it promotes the search for new means of preserving the health of children, applicable in schools, and keeping those that are effective at this stage.



## Internet use at schools in Murmansk region

It should be noted that the Murmansk region has accumulated some experiences in this field. It is an integrated systematic approach to preserving and improving the health of the schoolchildren. All the educational institutions in the Murmansk region regulate their health saving and health promoting activities in accordance to the established standards, documents of federal, regional and local significance, as well as local regulatory documents. In addition, the schools implement their own health saving programs, hold activities aimed at prevention of posture and vision disorders, deviant behavior etc., make aesthetic and creative designs of schools, develop virtual health-saving environments in official websites, social networks etc.

Official school websites represent a health oriented virtual environment. As a rule, they have one and the same design and format (a website design is strict and uniform for all the pages, a website contains many photographs of various school activities, animation and graphics, there are links to text documents, PowerPoint presentations, internet resources). The main objective of a school virtual environment is to ensure the learning and socialization process, as well as to reflect all of the above components of health-saving learning environment in the information resource. The website is oriented at the principle of openness and the availability of the information placed on the website (Resolution of Russian Federation Government 2012 № 343).

## Good practices in using virtual environments in the ArctiChildren pilot schools

Participation in the international research project ArctiChildren InNet (Empowering School eHealth Model in the Barents Region) helps to extend the health saving informational environment, actualize the schools' activity content in order to safe and strengthen the pupils' health, and adapt new ways of health saving technologies.

As an example, we can use the official site of Kandalaksha secondary school №19, which is a pilot school within the ArctiChildren project. The official website of the school is <http://kand19school.ucoz.ru>.

The site has a convenient interface, an extended heading menu. It sufficiently reflects the above mentioned components of health-saving educational environment in the electronic system. The site has the heading "School Tour", which shows photos of the school from the street, paying attention to the inner rooms, there is a plan of buildings and floors. The descriptions and diagrams are accompanied by photographs.

Rational organization of the educational process and the mode of teaching load are included in the category of the site "Electronic Resources." Among the various services this section contains information about educational programs and curriculum, working programs of training courses, subjects, disciplines (modules), the annual calendar of the training schedules (schools), and others. It also provides parents with information about the current performance of the

student through an electronic diary and an electronic journal.

The site is open for discussion and information on ensuring adequate nutrition of children, improvement of physical education, provision of psychological comfort to participants of the educational process. Through the category "Communication" parents and students express their opinions on improving nutrition, adjustment of timetables and many other issues. Information is provided for children and parents, not only in the form of information recital tape, but with the help of developing lessons using internet resources: "Conversation about Good Nutrition", "Health Lessons", "Strategies of Interaction of Teachers, Parents and Children on Health Promotion" and others.

The use of health-saving education technologies and materials, programs of education in the sphere of health in the school practice is reflected on the site through presentation of the ongoing school projects aimed at promoting health: "My health", "How to Become Neboleyka", "For healthy habits" "I want to live"; movies (eg, "Do I need to be healthy?"), electronic booklets (e.g. 'Flu and its prevention') and other means. The heading "Safety and Health", which appeared on the site during work on the ArctiChildren project brought together several provisions for creating a health-saving environment and reflected them in the school information space: integration of health activities in the educational process ( e.g. the project "Fizkult-hurray!"); reflection of the health monitoring results ( e.g. the project "Health - Key to Success!"); training pedagogical staff on protecting

children's health (e.g. the project "Antiterrorism: security is in your hands", including a memo of personnel actions upon detection of explosives and suspicious objects; "Legal education").

The site contains the heading "School Psychologist", through which you can arrange an appointment to a specialist or get counseling. This topic is divided into two sub-themes: 1) "School Psychologist" containing information regarding the timetable of psychologist (including his work with the students of specific classes); 2) "The psychologist advices" reflects psychologist's recommendations addressed to parents, students, graduates, teachers on a number of issues.

The site topic "Digital Resources" contains sections "Electronic Library", where you can find online materials for the preservation and development of physical health. This topic has also categories "Useful websites for students about health" and "Regional Portal". Information base of the schools in the Murmansk region, including Kandalaksha, comprises the categories e-mail, local network, Internet access. In addition to the official website, there are school or class groups in social networks (the most popular social medium in Russia is vkontakte.com) the links to which are on the website.

A school has at its disposal at least one computer class (in some cases – multimedia library) and networking tools that provide a swift e-mails exchange. There are also computers in some school rooms. E-mail is actively used for electronic document management, collection and exchange of administrative, statistical information. Computer technologies are widely used in administrative, educational,

psychological and pedagogical activities, and work with parents. In some libraries some methodological multimedia software is available: multimedia programs on various subjects, and extracurricular activities.

There is a link to the project's web site [www.arctichildren.com](http://www.arctichildren.com) on the Russian schools' site. AC-website represents the network for the materials exchange, which reflects the cross-border experience of creating health saving environment in schools. It also involves

discussions and planning of new approaches which can be implemented in all schools of the partner countries. Now, the experience of the Russian schools presented in forms of presentations, photos and notes. All the materials are available for views and comments, and so are the materials of the different countries. (Materials of Russian AC pilot schools 2014.) It is worth to note that all the headings are subject to regular updating.

In conclusion, we would like to note the following:

- A general decline in the health of children requires creation of health promoting environments in schools which would enable favourable and good quality organization of educational processes, and positively affect the health of the schoolchildren.
- School health environment is the integration of several components including sanitary standards, comfortable psychological environment, optimal level of workload in the classroom and homework assignments, various activities in the classroom and outside, school and extracurricular activities, catering, moderate alteration of study and recreation etc.
- Creation of a health-oriented information space allows us to implement, view, and manage these components through an electronic resource, to participate in a mobile dialogue to improve the existing school resources, aimed at preserving the health of children.
- Practical experience of schools in the sphere of using virtual environments as part of health promoting space presented in the ArctiChildren InNet project, may be an example of positive implementation of a health promoting process in a modern school of the XXI century.

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# Nature as Classroom

## – School Subjects, Physical Activity and Health Promotion in Outdoor Education

This article deals with outdoor education as an alternative in education for children in primary school. The background is the experiences of Talvik School in Alta ([www.arctichildren.com/materials-norway](http://www.arctichildren.com/materials-norway)), which is one of the Norwegian pilot schools in the ArctiChildren InNet project.

### Outdoor education: warrant and grounds

The concept “outdoor education” means that all training should be carried out outdoors one day a week. The background is, in addition to working with regular school subjects, that it is possible to integrate other compulsory activities that are warranted in the existing curricula. The slogan nature as classroom may be adequate for the philosophy of outdoor education. The foundation of outdoor education is warranted in the current Norwegian curriculum K06 (Utdannings- og forskningsdepartementet 2006). It is largely up to the individual school and/or the local

municipality to plan and carry out outdoor education. Outdoor education introduces and takes advantage of natural conditions located in the community where teaching takes place.

The history of outdoor education at Talvik School goes approximately 15 years back in time. It started with the enthusiasm of some teachers that saw the possibilities in the nearby area, inspired by pedagogical thoughts concerning teaching outside the classroom walls.

In the beginning, outdoor education was tried out on just a few classes, but soon all different age groups of pupils were included. The project had full support from most parents, who – like the teachers - quickly saw the benefits gained from the fact that the pupils could be taught different parts of the curriculum outdoors, and that being outside in physical challenging situations may be valuable in itself.

Today, Talvik school has outdoor education in a smaller scale than some years ago when all classes were included in being outdoors once a week. This is mainly because of the individual teachers’ views upon, and ability to do teaching

outdoors, but perhaps also because of a change in the curriculum, where some would say that the different school subjects have become more theoretical again, and that an indoor approach may be more suited for learning. However, this is a question, which we will leave for others to discuss.

A fact is that the situation at our school today is that every second week the pupils from the 1st to the 7th grade have a full day of outdoor education. We “fight the elements” by being outside in all seasons and in all kinds of weather. There is no such thing as bad weather, only bad clothes, we like to say in Norway, and this is a slogan matching the philosophy of teaching outdoors.

## **Pedagogical approach to outdoor education**

Adapted learning environment is a fundamental principle in the planning work for the primary school. It should be recognized that schoolchildren have different ways to acquire knowledge which leads to the assumption that the schools should contain a set of different ways of teaching. Children’s learning styles, described by Dunn and Griggs (2004), show that individual learning is an interplay of factors such as inter alia, environment for the teaching, who they’re with, level of difficulty and not the least modal preference. The past is all about those schoolchildren’s preference of the different perceptual channels such as auditory, visual, tactile or kinesthetic perception in their learning.

We established outdoor education also with reference to Howard Gardener’s

theory of multi intelligence; linguistic, logical/mathematical, music/rhythm, public perception, naturalistic, self-perception (intrapersonal intelligence). In retrospect, Gardener has added the interpersonal intelligence and existential intelligence in his theory (Chen, Moran & Gardner 2009). The idea is that outdoor education challenges the school children to make use of different ways of learning, and there is evidence for that children learn significantly better when they make use of learning styles that are customized to the individual (Dunn & Griggs 2004). Outdoor education is in concrete terms the definition of John Dewey’s statement ‘Learning by doing’ (in Befring 1994, 58).

Our experience has deepened our arguments for teaching outdoors as a great possibility to stimulate and reinforce learning across several areas of the curriculum. If you have a suited natural environment just outside the school walls that gives you the opportunities to learn about nature when you are actually in it, or let us say, if you can teach about historical events in the local area where they really happened, why not make use of this possibility? Our belief is that this will deepen the pupils’ learning and give them a more vital and genuine experience of the things that they are to be taught.

Being in an authentic environment may also create a more positive attitude to learning. If the pupil gets an experience that his or her actions have an impact in their “real life”, the pupil may be encouraged to take greater responsibility for his or her own learning. Implied in this pedagogical view is our strong belief in active learning through direct personal

experience: meet the challenge, find a way to solve it, and do it yourself!

## Health and physical activity

It is generally recognized that physical activity is beneficial to the development of good health. Norwegian health officials recommend that children and youth are physically active at least 60 minutes each day with the intensity of becoming sweaty and getting a high heart rate. Physical activity is also warranted in the national curriculum Ko6 (Utdannings- og forskningsdepartementet 2006) as a mandatory activity in the school, but it is not accounted for the more detailed provisions beyond a minimum time.

Physical activity is beneficial for both the physical and mental health. In 1998 the book "Physical activity - a resource in psychiatric treatment" (Moe et. al., 1998) was published. One of the articles goes through the research on physical activity and mental health. They conclude that physical activity has a beneficial effect on the symptoms of people with various psychiatric diagnoses. For people with depression it states: 'Physical training is more effective than no treatment and causes as big a symptom reduction that other forms of treatment such as various forms of psychotherapy'. (Martinsen 1998, 51.)

A survey of 290 students in the secondary school in Troms County, Norway showed a relationship between the lack of physical activity and mental problems. Furthermore, the survey concludes that there is a positive relationship between physical activity and the students' mastering and self-perception (Bremnes et al. 2011). In other words, there are many reasons why

physical activity should be considered health promoting and be held on a high level.

## Practical examples on how we arrange outdoor activities at Talvik School

As mentioned earlier in this article, we include all the school subjects that we find the most suitable in our outdoor education, such as general science, physical education, maths and social studies. Other subjects may be included as well, if the school administration and teachers see the possibilities that these subjects may give when you are outdoors. We try to find topics from the curriculum that are best fitted to be taught outside the classroom, while other topics might have to be more adapted into outdoor educational activities. This requires the individual teacher to have significant creativity and pedagogical knowledge about the methods and how to teach outdoors.

### General science and maths

General science is obviously one of the school subjects that is the easiest adapted to outdoor teaching, and therefore very suited for this approach. This subject includes different kinds of field work, for instance the studying of nature formations and different types of ecosystems, such as the mountain, the forest, rivers, lakes, the sea and so on. Out in the field, we also study the diversity of animals and plants that live there, and we teach about natural phenomena and natural forces such as

wind, rain, snow, thunderstorms and avalanches.

The school has quite a large amount of equipment that we may bring with us depending what we are going to do, such as aquariums, nets, books about plants and animals, binoculars, thermometres, pH-metres, tents, insect traps, knives and axes.

We also have the opportunity to borrow canoes for free from the Alta municipality. To see the nearby lakes from the water gives a greater experience of the closeness to nature. If we want to stay the night outside, we have three large tents (lavvos; sami tent) and some smaller tents that the pupils are free to use.

The pupils often have to write a report about what they have learnt, either by the end of the day, or as homework. When writing this report, some pupils may want to use a computer. There are several possibilities on how to include ICT in outdoor education, but very often this work will be done back at school.

Examples on how to use ICT can be when the pupils write about their personal experiences and what they have learnt. When they collect different samples, or make observations, they can put the data into forms, tables and diagrams. You can also give them tasks connected to the use of photos and images: an example can be that the pupils make files of pictures that have been taken, for instance, during a mountain hike. Furthermore, they can write articles about different outdoor activities for the school's homepage, make PowerPoint-presentations, and so on.

Maths is also a school subject that has great possibilities outdoors – often it only depends on the teacher's own creativity and ability to see those possibilities. In

our use of outdoor education in maths, we have a rather large variety of different approaches and methods. Here are a few examples:

- **You can teach about geometrical structures by building them in snow or sand. For pupils who learn best when they may use of their hands, to actually build the structure might help them to understand it better.**
- **Outdoors you can do different kinds of measurements. It is possible to measure volume, temperature, wind speed, weight, height, and so on. This information can later on be used in scientific reports.**
- **Finally, the pupils can calculate the distance we have moved, or you can combine maths with physical activities such as running, skating, jumping and throwing.**

## Physical education

This school subject is also very much suited for outdoor activities. Just being outside, moving a distance from A to B, will for some pupils perhaps be one of the biggest physical challenges they have throughout the whole week. Therefore, we rarely stay very close to the school. Instead, we present a destination for the pupils, and we put information about where we are going on their weekly schedule, so that they will be well prepared for that day outside.

The Arctic winter is long and in this season, when the conditions are good, we teach our pupils activities such as cross country skiing, ski jumping, ice skating



and other winter activities. The school has some equipment for these purposes if the pupils have not got any themselves. In addition to this, we have a cross country track nearby the school and this track is very often used during our outdoor days.

We also arrange sports days with different kinds of tournaments. As examples we can mention football, landhockey, softball, and track and field. We always have both a physical and a social aspect to these kinds of days – it is not just about being the best. A simple way to make this a social happening for the whole school is to make bonfires where the pupils make their own food and then we eat together. Very often these days end with a match between the pupils and the teachers. To play against adults, and even have a chance to win, is very motivating for many children.

### **Social studies**

In outdoor education, we teach pupils about traditional ways to survive and live in the Arctic. They learn about the traditional lifestyle of the Sami people; hunting and gathering, making a lavvo (a Sami tent), catching reindeer by throwing a rope (Sami language: suohpan), making a camp fire, and so on.

We live by the sea, so we also teach them about how people in our culture have used the resources from this ecosystem. The school can hire boats to go fishing in the Altafjord, so the pupils get to know a lot about the fishing industry in the local area. On fishing trips like this, we talk about how to take care of nature, and we include and discuss terms such as ruthless exploitation and sustainable development.

Another method that may be used with success in social studies is drama, and this activity is perfect to do outdoors. You can divide the pupils into groups and let them make a play or a role play. The play can be about historical events, perhaps something from the local area. You can also make smaller role plays about moral issues from their “real life”, such as smoking, drugs, shop lifting – anything really! If you want them to perform for each other, you can make “a stage” in the forest! Again, it is up to the teacher’s imagination and pedagogical creativity to find suitable topics and methods.

### **Other examples on activities that we do outdoors**

To build the pupils’ independence and their awareness of their own role in the outdoor activities, we always try to include the pupils in the planning, especially if the activity lasts for more than one day (for instance a mountain hike). They need to have thought through things such as what to wear, what to do, how they should pack their rucksack, where and how to sleep, and so on. They should also be advised on what kind of food they ought to bring; it should be healthy and suited for its purpose. In this planning, it may be a good idea to divide the class into smaller groups, so that each pupil is encouraged to be active in the process, and discovers that the decisions that are taken will have an impact on their personal experience of the trip.

Another activity that has been popular, when tested out on pupils, are the “survival days”. The pupils are given some information in advance about some


things to do in a survival situation out in the wild. Information about survival may be found in books or on the internet. After talking about different survival strategies, the pupils are divided into groups. Now you need to find a suitable area for “the mission”. Let the groups use the day to build a place to live, build a fire place and make their own food. They have to come up with plans on how to survive and how to be found by rescue teams. It is possible to make this a competition, where the winners will be presented by the end of the day; Who has done the best work and would probably have the best chances to survive the longest?

Finally, it is also possible to include arts and handicraft activities such as photography, film making, drawing, wood work and so on when you are outdoors. You can build different objects using things from the nature, such as

sticks, stones and branches. It is also possible to make art: In the winter you can make large pictures or formations in the snow and ice, in the summer you can do the same by using flowers, stones, or other suitable material. Again, it’s just to use your own creativity, find ideas from the curriculum and adapt them into outdoor educational activities.

## Conclusion

In this article, we have given some ideas and examples on how we as a school try to use outdoor education as a pedagogical tool, in order to promote learning, health and to avoid anti-social behaviour among our pupils. We have a strong belief that when pupils discover the joy of being outdoors, mastering physical and mental challenges that are given in an educational

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- Nature as classroom is possible to implement in the frame of national curriculum.
  - There are several possibilities to work with ordinary school subjects such as math, language, social science etc.
  - It is probable that outdoor activities have a preventive effect on anti-social behavior including bullying.
  - It is a proven fact that physical activity has a positive effect on health development.
  - Desire for the future is that nature as the classroom becomes mandatory in the primary and lower secondary schools.

setting, this will improve both their physical and mental health and also be helpful in order to prevent bullying and other unwanted behaviour.

Anti-social behaviour is maybe best avoided if each individual has to take part in a group, where he or she feels that they are important and significant members. With references to pedagogical theories mentioned earlier, our view on outdoor education is that it is the most

important approach when it comes to building a positive learning and psychosocial work environment (Dunn 2004).

We believe that the years of experience that we have with outdoor educational activities, and our pedagogical reasons for doing this, show that this approach is well suited in order to promote health of young people, and to provide our pupils with good skills.

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# Active@school

## – Promoting Physical Activity with Interactive Technology by Empowering Schoolchildren

In this article we discuss one health promoting intervention done in the ArctiChildren InNet project using interactive technology and empowerment to promote physical activity in schoolchildren. We start with a short summary of the Active@school intervention followed by a background on physical activity in general and the unfortunate trend of increased inactivity in Swedish schoolchildren. Finally, we present implications for health promotion in schools using an empowerment approach combined with interactive technology.

### **Active@school - a health promoting intervention**

In an effort to work in a health promoting manner as well as lead to sustainable school development change we planned a school-based intervention together with the schoolchildren and their teachers. The parents were also a part of the intervention as the schoolchildren

pointed them out as important in supporting them to be more physically active. One pilot school in Kalix municipality, a partner in the ArctiChildren InNet project was participating in the Active@school intervention involving 53 schoolchildren. The intervention consisted of four separate studies with the first one inviting the schoolchildren to participate in focus group discussions with the researchers. Three of the schoolchildren's main sources for support when making a healthy behavioral change were their peers, parents and mobile phones (Lindqvist, Kostenius & Gard 2012). Built on the children's ideas of supported health promoting activities an empowerment based intervention was developed.

This intervention included a peer contract with a classmate for sending encouraging text messages. Furthermore, a brochure for the parents was made by the schoolchildren in cooperation with the researchers and their teachers in a student-driven process. During one month the schoolchildren wore an

accelerometer measuring their physical activity. They also answered questionnaires on the amount they were physically active. Finally, both the schoolchildren and their parents were invited to share their experiences of participating in the Active@school initiative in individual interviews.

The empowerment process and the results of the intervention were studied in four consecutive studies and this chapter is based on two of these studies “Moving from idea to action: promoting physical activity by empowering adolescents” (Lindqvist, Mikaelsson, Westerberg, Gard & Kostenius 2014) and “Fun, Feasible, and Functioning: an Empowerment-Inspired Physical Activity Intervention” (Lindqvist, Kostenius & Gard 2014). The results show that this school based health promoting intervention helped increase physical activity in the participating schoolchildren and was experienced by the children as fun, feasible and functioning. Based on the experience of this research and development work in one of the pilot schools implications for school health are made, shown at the end of the chapter.

## **Physical activity for better health**

Physical activity provides fundamental health benefits for children and youth (World Health Organization 2010), including positive effects on the musculoskeletal system and cardiovascular health (Janssen & LeBlanc 2010) as well as self-image (Goldfield et al. 2011). Adolescents who are physically

active may be less likely to engage in drug use and more likely to participate in other health promoting behaviours (Delisle, Werch, Wong, Bian & Weiler 2010). Health might even be a critical partner for optimum education (Rothon et al. 2009) and studies have found associations between adolescent physical activity and academic performance (Fedewa & Ahn 2011; Rasberry et al. 2011). According to the World Health Organization the recommendation for health-enhancing physical activity for adolescents is to be physically active for a total of at least 60 minutes daily. The activity should include both moderate and intense activity, but can be divided into several sessions during the day (World Health Organization 2010).

There are some gender differences as boys are more physically active than girls in all age groups, and according to Health Behaviour in School-aged Children (HBSC), from the Swedish adolescents aged 15 only 13% of the boys and 9% of the girls achieve the recommended levels of physical activity seven days per week (Folkhälsoinstitutet 2011). There is evidence that the tendency to adopt sedentary behaviour may increase through adolescence (Dumith, Gigante, Domingues & Kohl 2011), and there has been a decline in cardiovascular fitness in Swedish 16-year-olds during the years between 1987 and 2007 (Ekblom, Ekblom Bak & Ekblom 2011). Living conditions affect the degree of physical activity in adolescents and higher education and higher parental income are related to greater physical activity (Ferreira et al. 2007).

Adolescents are more physically active if they can walk or cycle to school, which is known as an active transport (Andersen

et al. 2011). Physical activity is also increased if adolescents have access to recreational environments that promote physical activity such as sports halls and recreational areas (Davison & Lawson 2006). It is also important to consider where the time for physical activity is supposed to come from, as less sleep or time devoted to schoolwork may not promote health. A recent Australian study of adolescents showed that every additional hour committed to physical activity was associated with 32 minutes less screen time, and the relationship was more pronounced in obese adolescents, who averaged 56 minutes less screen time (Olds, Ferrar, Gomersall, Maher & Walters 2012).

## School-based interventions including technology

Children spend approximately half of their waking hours in school, which is an opportunity to promote physical activity for all children regardless of their life circumstances (Naylor & McKay 2009). The WHO and the United Nations have declared a need for continued accumulation of evidence concerning interventions related to health promotion in schools and improvements in the implementation process to ensure optimal transfer of this evidence into practice (Tang et al. 2009). School-based interventions that include multiple elements such as teacher training, changes in curriculum, assistance in behaviour change, increased health education, and involvement of parents have a positive effect on children and adolescents' physical activity during

school hours, and in some cases after school as well (SBU 2006). However, the Swedish Council on Health Technology Assessment notes that insufficient scientific data prevents conclusive determination of the impact these methods have on children's and adolescents' physical activity levels, and they ask for further research into which methods are most effective for different age groups, as well as studies that use modern technology to maintain behaviour change (SBU 2006).

Adolescence is characterised by a shift to independent decision-making that is strongly influenced by peers and technology (Gibbons & Naylor 2007). Adolescents use a considerable amount of information and communication technology (ICT) in their everyday life, and supporting health promotion with ICT is a promising approach to use for adolescents (Tercyak, Abraham, Graham, Wilson & Walker 2009). Short Messaging Services (SMS) are considered to be cost and time efficient, accessible, and convenient, and have shown promising results in increasing physical activity among inactive adolescents (Sirriyeh, Lawton & Ward 2010). The children who participated in our focus group study suggested that reminders via SMS and social support from friends and parents could facilitate health-promoting behaviour (Lindqvist et al. 2012).

**Check out Anna-Karin Lindqvist's talk about Children and technology:**

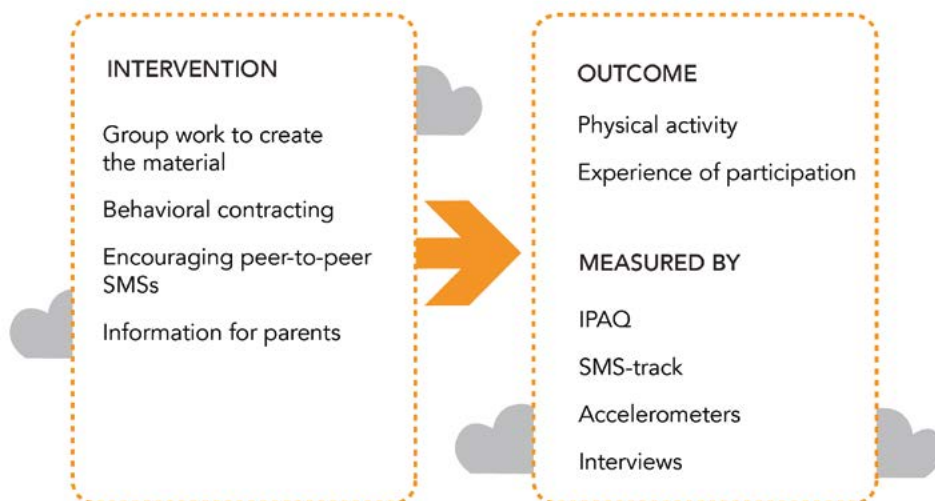
## Empowerment is a powerful tool

The intervention in this research and development work was created from the ideas of the children themselves as we mentioned earlier. Empowerment and the formation of partnerships with adolescents offer promising avenues for those who encounter the challenge of promoting physical activity among adolescents (Lindqvist et al. 2012). Empowerment is a multilevel construct, including both individual influence over one's life as well as participation in group activities and/or activities in the society (Rappaport 1987). Raeburn and Rootman (1998) highlighted five key components of empowerment: control, competence, confidence, contributing, and participating. In this context, empowerment is assumed to promote health through the different parts of the intervention, as depicted in Figure 1.

Collaboration between practitioners and researchers is essential to ensure that

relevant problems are identified and context-sensitive programs are developed (Durlak & DuPre 2008). The participatory elements of this intervention can contribute to its compatibility, i.e., the extent to which the intervention fits with the organization's and the adolescents' priorities and values. Flay (2005) states that shared decision-making enhances implementation and empowers individuals to exercise some control over local services. According to Durlak and DuPre (2008) community participation increases the likelihood that effective programs will be sustained.

Based on earlier findings of the ArctiChildren research and development work (Kostenius, 2013) we wanted to explore the possibility of conducting an empowerment inspired intervention and examine the impact of the intervention in promoting physical activity among adolescents. The study took place at the beginning of the 9th grade. The intervention group consisted of 27 schoolchildren (14 boys and 13 girls) and the control group of 26 children (7 boys



**Figure 1.** Model of intervention followed by outcome and how it was measured.



**Check out Catrine Kostenius' talk about Empowerment and Children:**

and 19 girls). Measures of physical activity were collected before and after the intervention using questions posed by SMS ([www.sms-track.com](http://www.sms-track.com)), a questionnaire (IPAQ) and accelerometers. We also wanted to describe the schoolchildren's experiences of participation in the intervention. Therefore 14 children (4 boys and 10 girls) were interviewed and the collected data was analyzed by using qualitative content analysis.

### **Involving the schoolchildren from the very first step**

The contracts, the content of the SMSs and the parental brochure were created by the schoolchildren, the researchers, and the teachers using an empowerment based approach. The children were divided by the teachers into pairs and were asked to make a mutual written contract including a goal for physical activity and a promise to support each other's physical activity over the course of one month. "Getting in shape and feel good", "build stamina and muscle", and "sleep better" were some examples of the

goals the children chose to write in the contracts.

In the contracts they also agreed to send one SMS to each other once a day for one month to encourage the recipient to take up physical activity. They were asked to talk with their partners to get a picture of what that person perceived as encouraging and at what time of the day they would prefer to get their message. They also sent a copy of the SMS to the researcher. "Remember to put in a little extra at the gym today", "Walk the dog or something :-)", and "Get out of bed and on the move" were some examples of the encouraging SMSs they sent to each other.

The main headlines of the parental brochure were decided by the entire group of schoolchildren in the intervention group; for example "Why is it good to be physically active?", "The relationship between physical activity and school performance", and "How can parents support physical activity?". The children worked in smaller groups to create the contents related to one headline per group and presented their contribution to the whole group the following day. Finally, there was an editing process to complete the brochure and it was sent home to the parents.

### **Schoolchildren's ideas became a health promoting intervention**

On average, the schoolchildren in the intervention group increased their physical activity per day by 4.9 minutes and the children in the control group decreased their physical activity per day



by 25.4 minutes. One explanation for the decline in physical activity in the control group might be the difference in the weather between September and November in the northern part of Sweden. A review that assessed the effects of weather conditions on physical activity notes that the number of published studies is small, but that in general the data confirms that the weather has an impact on physical activity (Chan & Ryan 2009). One might argue that the decline in physical activity in the control group is a natural development for the season and that the intervention managed to prevent the decline and even reversed it to a small increase.

The interviews showed that “fun” was a motivating factor for the children for being physically active and for joining the study. Most of the schoolchildren also experienced the empowerment-inspired intervention and the data collection as fun and feasible. Overall, the children had positive experiences from the empowerment-inspired intervention and reported that the intervention increased their physical activity. One child said:

*Well, I have actually gotten started, sometimes I was not so eager to go out for a walk and could feel like no I don't have the energy to do it but when I got a text message I thought, yes, I'll go anyway. (Laughter) It actually worked!*

The empowerment-inspired approach might imply that 100% of the schoolchildren should be satisfied with the content of the intervention, but the children reported that most, though not all, of the children experienced the empowerment-inspired intervention appropriate for them. Some of the children with deviant experiences stated that the intervention had no effect since they were already very active. Others didn't think that the intervention had worked for them since they didn't want anyone else to tell them what to do. Still others reported that the intervention would have been more effective if the encouraging peer-to-peer SMSs had been sent from an authority instead of a close friend.

The results also showed that the schoolchildren experienced the act of measuring as an important part of an

intervention aiming at promoting physical activity. The children mentioned that measuring their physical activity had served as a wake-up call and made them aware of their physical activity level. They also found the question about how many minutes they had been active each day to be a motivation to be more physically active. Some of the schoolchildren even experienced that the data collection by the SMS-track was more motivating than the encouraging peer-to-peer SMSs.

## **Implication for school health**

It is important to emphasize the associations between adolescents' physical activity and academic performance to facilitate implementation of physical activity interventions in a school context. Promoting health might seem as an added burden when the school's primary focus is to meet academic standards and physical activity is sometimes seen as a competitor to academic studies since time devoted to physical activity could instead be devoted to academic work. However, childhood and adolescence are critical periods for the acquisition of healthy behaviour (Naylor & McKay 2009) and as a recently published Swedish study concludes promoting physical activity in school may improve children's educational outcomes (Käll, Nilsson & Lindén 2014). Factors such as enhanced concentration, stress alleviation, reduced boredom and even biological effects such as increased blood flow might have mediated the effect of a successful intervention (Käll et al. 2014).

Ickovics and colleagues (2014) suggest that schools and families should work together to ensure that students adopt health promoting behaviors to realize higher academic achievements. Making physical activity more fun and enjoyable might be important for the long-term effectiveness of physical activity interventions for schoolchildren. Furthermore, we conclude that despite the fact that the intervention was created by using the children's collective ideas, it is not guaranteed that it will suit every individual from that group of children. It might be successful to have a basic concept with the possibility to customize some features of the intervention.

The knowledge gained from this study has strengthened our belief that empowerment could be a helpful approach for those who encounter the challenge of promoting physical activity among adolescents, regardless of whether the person concerned is an adult at home or at school. In our opinion, the most valuable contribution these studies provide is the knowledge that it is feasible to develop and conduct an empowerment inspired intervention to promote adolescent physical activity. Finally, we recommend effective interventions aiming at promoting physical activity to be an increased priority for schools and communities.

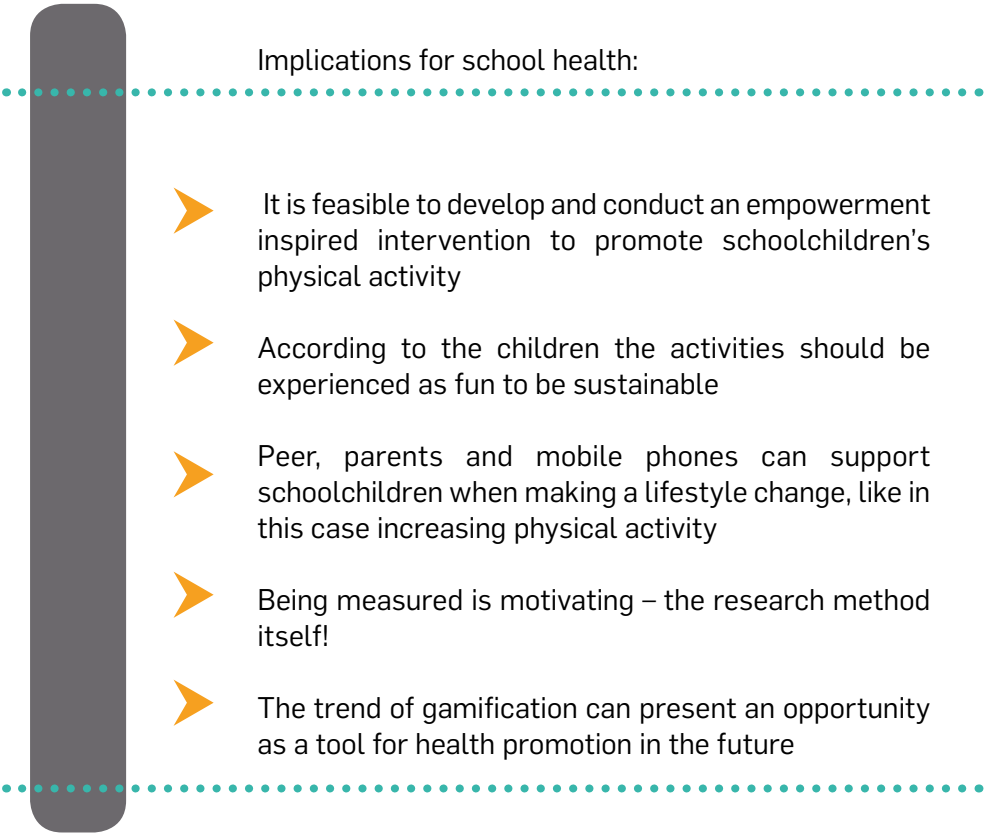
## **The future**

In recent years gamification and game based learning has received considerable attention. Gamification means using elements of game design in areas that basically are not games. Game based learning on the other hand is about using

games in educational practices. In the future we can see a combination of gamification and game based learning being useful in health promoting initiatives. Our previous research described in this chapter has given the key concepts “fun” and “measuring is motivating”. A possible game of the future can combine these principles so that the children’s physical activity is measured and the collected data is inserted into the game where it is transformed to “energy” that allows the children to build an avatar competing in an Olympic Game. Such a game will require cooperation among individuals, increasing the understanding of others

while also increasing self-esteem and physical ability. The experiences from playing a game like this can be used in school subjects such as physical education, mathematics, social science, physics, and biology where the results of the measurements are integrated into teaching.

We are convinced that interactive technology is here to stay and by involving and empowering schoolchildren they will help us lead the way in our efforts to increase health including physical, psychological, social and existential well-being in schoolchildren here in the northern part of the world.



#### Implications for school health:

- It is feasible to develop and conduct an empowerment inspired intervention to promote schoolchildren’s physical activity
- According to the children the activities should be experienced as fun to be sustainable
- Peer, parents and mobile phones can support schoolchildren when making a lifestyle change, like in this case increasing physical activity
- Being measured is motivating – the research method itself!
- The trend of gamification can present an opportunity as a tool for health promotion in the future

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# Promoting Schoolchildren's Health with Physical Activity

This article describes the possibilities of health promotion of schoolchildren at the Kandalaksha school no 19 through involving them into physical culture activities, introduction of innovation technologies directed at sports promotion, physical activities and bad habits prevention among the youth, by using an international eHealth model.

## Actuality of health promotion issues

Health is a fundamental component of human life and activity. Physical training plays a special role in maintaining and improving human health. Reduction in physical activity leads to different disorders in human health whereas exercise and other kinds of physical activities are the most effective way to stay healthy.

Russian scientists in their research analyze the concepts of general culture and physical culture of the person and point at the unity of physical and spiritual culture. (Arnoldov 1976; Byhovskaya 1996.)

In recent years new concepts and programs of physical education

(Lubysheva 2001; Lyakh 2000; Melnikov 1991), introducing new contents, technologies, forms and methods of physical education of children and adolescents, have appeared (Mustaev 2001). Of important significance are the works of researchers connected with forming a value attitude and motivation to physical training (Bakurova 1991) with the search for ways to involve students in regular physical training (Vlasov). Studies on the role of social media in shaping a child's personality and problems of its organization, development, and optimization in terms of socio-cultural environment are of great interest (Bocharova 2001).

## International significance of keeping and improving health of population

Strategic importance for solving the problem of preserving and improving the nation's health has a resolution in the "Global Strategy on Diet, Physical Activity and Health" (2004, 57th World Health Assembly), which encourages states to develop national action plans on physical activity and policies to increase physical activity among the population.

In May 2008, the 61st World Health Assembly adopted a resolution "Prevention of non-communicable diseases and their control: implementation of the global strategy and plan of action for implementation of the global strategy for non-communicable disease prevention and control." This action plan calls on the states to implement national principles for physical activity in public health work. (Prevention of noninfectious diseases... 2008.)

The relevance of the considered problem is also confirmed by the data obtained in the course of a sociological survey among schoolchildren in Finland, Russia and Norway in 2012, which showed a low level of physical activity among pupils in each country during the school week. In Sweden only 9% of the girls and 13% of the boys at the age of 15 and above are physically active (Folkhälsoinstitutet 2011).

For example, in Finland and Russia only approximately one of three pupils (34-39%) is involved in physical activity 5 days a week or more (34-39%), whereas in Norway the amount is one in four (27%). The question of pupils' self-assessment of physical condition is noteworthy. Only 26% of the Russian pupils assess their physical condition as "excellent", whereas similar responses were received only from 20% of high school pupils in Norway and from 12% of the Finnish pupils.

Poor physical condition of pupils can be stated in all the countries (3% of pupils in Russia, 2% of the schoolchildren in Norway, 4% of the Finnish pupils). At the same time while summing up the positive answers to the question "How do you assess your physical condition (training) at the moment?", we can make a

conclusion that the pupils in all three countries evaluate their physical condition as "excellent" or "good" approximately in the same way (Finland - 71%, Russia - 72%, Norway - 75%). At the same time, there is approximately the same number of answers from pupils in all countries assessing their physical condition as "average" (Finland - 25%, Russia - 25%, Norway - 23%).

The main causes for the decline in the level of health among Russian schoolchildren today could be:

- absence of the learning process of the required amount of physical activity for normal physical development (passive activity in the classroom, teaching in "closed" space)
- high teaching workload, mismatch between learning conditions and equipment, and hygienic standards
- unformed conscious attitude to one's own health, desire to be healthy
- low motivation in physical education and sports, indifferent attitude of parents to PE lessons
- lack of knowledge about school health-technologies among children.

#### *Tasks of the secondary school in maintaining and improving health*

We realize the need for a new strategy in modern comprehensive schools where health is seen as an essential component of education. One of the main tasks of the project ArctiChildren InNet was to create an effective eHealth model promoting sustainable interests in maintaining and improving schoolchildren's health.



In its core there is a set of guidelines, which we adhere to in our daily activities in preserving children's health.

- timely formation of stable value orientations to health and physical culture will prevent children from acquiring a negative experience of bad habits
- gymnastics, exercise, and walking should be present in everyday life of each pupil who wants to maintain good performance and health.

We are looking for ways to improve and preserve pupils' health, increase their physical activity, and create a sustainable motivation to a healthy lifestyle.

Physical activity is seen as a motivated human activity to achieve such a physical condition that is necessary for physical and health development; assimilating special knowledge and skills.

The experience of our educational institution in building a sustainable motivation for pupils to a healthy lifestyle has shown that one of the most effective ways to do that is to give priority to PT lessons in the school timetable, and by monitoring the health of the children.

In our practice the main indicators of health and physical development of a child are:

- data from the monitoring indicators of physical health of children (health information)
- the level of pupils' knowledge about personal physical culture
- formation of an adequate self-assessment concerning health
- need and potential for physical self-education: daily routine management, special exercises to create a positive mood, self-

massage techniques, regulating posture, gait and so on.

### *Experiences from the Kandalaksha school in developing physical activity of schoolchildren in order to improve health*

The most significant practical experience on physical activity as a factor in pupils' health was gained through participation in the ArctiChildren InNet project with the following contributions:

**1** The project significantly enriched the content of the educational field physical culture: new sports and wellness modules, and valeological educational programs were tested and introduced, areas and topics on hygiene and cold water treatment were expanded, and skills of health preservation were formed. During the two years of participation in the ArctiChildren InNet project the school curriculum was renewed by 50%, and additional physical culture classes were included taking into consideration the schoolchildren's interests and needs.

Forms from 1 to 4 - Fitness, Sambo, Fizkult - hurray!, Table Tennis, forms from 5 to 8 - Fizkult - hurray!, Mini-football, form 9 - Sports, Basketball, Volleyball.

As mandatory elements of the learning process in the forms from 1 to 7 "fizkultminutki" (shorts breaks during lessons) were introduced, aimed at teaching the children proper breathing, checking heart rate, and weak physical fitness correction. In grades from 1 to 4 in the middle of each day there are dynamic breaks.



Due to structural and content changes in the school educational program the pupils' motor activity increased up to four hours per week.

**2** Opportunities were created for recreational physical activity as an optional part of the curriculum at the primary school: training programs of good diet, lesson on health (grades 1-4), and useful habits, were developed with the additional educational program "my health" for pupils in grades 1-4, aimed at the formation of the value of health and healthy lifestyles, and testing, which was scheduled for the 2014 - 2015 academic year (Health! – the key to success 2014).

This programme comprises the following fields of education work

- rational organization of learning and extracurricular activities
- organizing mass PE work with parents
- educational work with parents on child growth and development, health, positive and negative health factors.

**3** Systematic work in forming a healthy environment through the implementation of the project "Priority - Health", and a complex target programme on psychoactive substance abuse prevention "Necessary Conversation".

During the participation in the ArctiChildren InNet we met the key project and program objectives as follows:

- we developed monitoring of children's health state
- we improved school facilities

- we implemented a monitoring system of pedagogical process effectiveness, where health is treated as one of the indicators and criteria for evaluating its effectiveness
- we introduced techniques of health-maintaining support for pupils
- we tested effective forms of prevention and education measures in enhancing the role of physical activity in preserving and improving pupils' health (Priority – Health 2014).

**4** School sports facilities were modernized as part of the development programme. An innovative physical environment was created represented by a modern stadium with fitness and sports facilities, two gyms, wrestling and fitness rooms, and safe zones for physical activity in the school recreation areas. Currently, various forms of extra-curricular sports activities involve up to 80% of pupils, with 60% attending sport clubs. (Fizkult 2014.)

**5** We developed and realized a number of activities using various methods to motivate pupils to lead a healthy lifestyle:

- Health Days, sports events
- thematic class hours, recreational games, contests
- events and projects developed by the pupil participants of the project ArctiChildren InNet (ArctiChildren InNet project introduction 2014.):
  - *We are for a healthy lifestyle*
  - *The whole family is for health*
  - *How to become Neboleyka*



- *For healthy habits*
  - *I want to live*
  - *My Health*
  - *Flu and its Prevention (a booklet)*
- videos developed by pupil participants of the project ArctiChildren InNet (ArctiChildren InNet web page 2014):

- *Do I need to be healthy?*
- *What kind of cup do you choose?*
- *Life without bad habits*
- *We are for a healthy lifestyle*

- presentations developed by the pupil participants of the project ArctiChildren InNet (ArctiChildren InNet web page 2014):

- *How not to undermine their health in preparation for the State Final Examination*
- *Proper diet during preparation for exams*
- *Monitoring of correlations between flu and factors such as exercise and vaccination.*

**6** We determined the pedagogical basis for efficient development of children and teenagers' physical culture in a specially organized social-cultural environment:

- we developed a model of "collaboration between teachers and parents on how to save and improve children's health: a strategy of interaction"

- we expanded the scope of partnerships with wellness and sports institutions through implementation of joint projects "Health is OK – thanks to exercise", "Do exercise, use cold water, smile", "Sport is the best teacher in the world!" when organizing sports sections, and clubs in the school premises.

**7** During participation in the ArctiChildren InNet project, in terms of interaction between school and non-school institutions, we jointly developed and tested personality oriented programmes on boxing, sambo, gymnastics, contemporary dance, covering about 40% of our pupils.

**8** We designed and implemented the first volunteer movement in educational institutions in order to engage students in sports i.e. the



recreational activities for a healthy lifestyle promotion:

- we formed a team of volunteers from 7-8 grade pupils
- we put a systematized information on “Sports as alternative to bad habits” on our official website
- we developed and realized a number of activities on psychoactive substances, alcohol abuse and smoking prevention (sports events, “We are for a healthy lifestyle” project, brochure “No to bad habits”).

In the ArctiChildren InNet project our volunteers held more than 20 events aimed at healthy lifestyle promotion. Workshop “Life without bad habits” with volunteers from Finland. During a period of 3 days Finnish students held workshops on making posters, collages for 8-9 grade pupils on psychoactive substance abuse prevention “Let’s together say no to drugs!”.

- Workshop “We are for a healthy lifestyle” - as a result the pupils developed projects “For healthy habits”, “I want to live”, a video clip “Is it necessary to be healthy?”, a brochure “Flu and its prevention”, presentations “Ways how to

stay healthy when preparing for exams”, “Right diet during preparing for exams”, “Monitoring of interdependency between flu and sports and vaccination”.

- Sport and Recreation Activities included “Healthy Youth - Healthy Nation”, “Drugs are evil”, “Smoking is a harm to health” and others.

## Conclusion

Experience in promoting healthy lifestyles resulting from participation in the project ArctiChildren InNet was interesting for our teachers, children and parents. This conclusion can be proved by the survey we conducted among the children. In the assessment, sports and recreational activities held at the school were highly appreciated.

Participation in the international ArctiChildren InNet research project (“Developing a school eHealth model in the Barents Region”) helped us to update the contents of our school activities, maintain and improve children’s health, and test new technologies.

Therefore, we are sure that the website «ArcticChildren» will be popular with young people, parents, and teachers. The possibilities of social networks in forming theoretical and practical knowledge in the field of health, and in promoting the values of a healthy lifestyle are as limitless as the internet space.



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# Internet and Gadget Addiction among Teenagers: Problem Situation and the Search for Preventive Measures

Digital technology extension significantly widens the functional opportunities and abilities of the personality. Authors of the article in detail describe the experience, collected within the ArctiChildren InNet project reflecting not only positive but also negative effects of the digital technologies distribution.

## Introduction

A gadget is a technical novelty. With the emergence of this device a new kind of psychological addiction appeared – a gadget-addiction, which has recently become both a dangerous social phenomenon and an internet addiction (Health 2014; Psychology is all! 2014).

Within the ArctiChildren InNet project we decided to interview pupils from Murmansk Gymnasia no 5 (9th -11th grades, with the total number of respondents 140) in order to identify the facts of addiction to different gadgets. After completing the questionnaire the

results are presented in Table 1 (next page).

As can be seen from Table 1, most questions have been answered "yes", which makes it possible to identify the facts of gadget addiction.

After analyzing the data, we can present a model of a teenager, who has more than 100 friends on the internet. He communicates with them every day and spends more than 4 hours a day in front of a computer. In recent years it has become quite easy, because the internet can be accessed not only from a desktop computer, but also from a mobile phone, or a tablet computer. These devices are always at hand.

It is undeniable that a computer and other modern devices can bring a lot of benefits - they are an invaluable source of information, training material, fascinating books, movies, a way to make new friends around the world etc. In the network it is easy to find rare and valuable books that a few people have at home. Many games have a fairly significant potential for development - for example,

**Table 1.** Results of the gadget addiction questionnaire.

QUESTION	YES ANSWER
If you left your mobile phone at home, would you come back for it even if you left for a short time?	82%
Is your smartphone always close to you (at work, home, at your friends', even when you sleep)?	73%
Do you check incoming messages when there are no sound signals?	37%
Do you follow new gadgets?	68%
Do you annually get a new gadget, accessory or a new model of the gadget you already have?	27%
Do you take a laptop, tablet PC, mobile phone, player with you when you go on holidays?	100%
Do you often upload your photos in social networks and follow the comments?	43%
Do you congratulate your friends through social networks, SMS messages instead of calling in person?	69%
Do you have more than 50 friends in social networks?	87%
Do you prefer gadgets to reading books in your free time	85%

logic games and puzzles excellently develop the skills to analyze, find connections and restore a logical chain. Social networking allows you to improve communication skills and learn new languages.

In spite of all the positive opportunities, gadgets have a downside in the form of a persistent addiction of teenagers to a

computer. Adolescents, due to their age, are most susceptible to development of psychological disorders.

We decided to continue the experiment and offered the pupils from grades 9 to 10 one day to refuse to use any gadgets, and then to describe their feelings. No one agreed to do it voluntarily.



We can speak of a true gadget addiction if a teenager:

- Feels good, happy and even euphoric when using a gadget
- Does not want to part from the gadget (does not notice the amount of time)
- Can not resist buying a new "toy"
- Does not control the costs related to use of the gadget
- Feels emptiness, insecurity, and depression without a gadget
- Neglects friends; learning problems emerge
- Suffers from headaches, sleeping disorders, there is dryness in the eyes, deteriorated vision, and an aching hand due to overwork of muscles.

## Causes of gadget and internet addiction

As well known, any activity is aimed at meeting the needs. The spectrum of basic needs of a modern teenager is quite wide. In addition to the vital needs (physiological and safety), a special place belongs to the social needs (communication, love, recognition), and needs related to individual development (knowledge, understanding, self-realization).

The study made by "Foundation for Internet Development" and conducted by Soldatova, Gostimskoy and Kropalevov (2014) makes it possible to determine the range of needs that young people meet on the internet. Among them are: the need for autonomy and independence (in socialization process this need requires, first of all, the desire to independence

from parents); need for self-realization and recognition; need for recognition and knowledge; satisfaction of social needs in communication, love, belonging to a group with the same interests; need to possess; cognitive demand, possession of new knowledge that contributes to recognition by peers and self-realization. As a result, the use of the internet gives a feeling of complete control of the situation that satisfies the need for security - one of the basic human needs.

## Danger of gadget addiction

**1** As with any addiction, dependence on gadgets is a violation of the mental state of the adolescents.

**2** Gadget addiction may cause harm in the case the student does not possess the skills of processing information.

**3** Passion for listening to music through headphones in the near future may result in total loss of hearing and deafness, today's youth are the main consumers of the "second ear."

**4** Long and not time-controlled use of gadget affects the visual analyzer and leads to eyesight deterioration (usually short-sightedness, dry eye syndrome).

**5** Tablet computers are not designed for long typing. Working on the virtual keyboard, you can not find a comfortable position for your body and arm, and as a result the musculoskeletal system is affected (posture, osteochondrosis of the cervical area, carpal tunnel syndrome etc.).

## Prevention of gadget addiction

Psychological prevention of the internet addiction among adolescents should be a complex process of developing personal psychological characteristics to ensure resistance to addictive behavior and sticking to a healthy lifestyle in order to prevent progress of addiction.

The main directions of the psychological prevention of internet addiction are:

- Spreading information about the mechanisms of the internet influence on individuals, causes, clinical manifestations, diagnostic methods and consequences of internet addiction
- Developing strategies of highly functional behavior: developing resistance to negative social influences; forming intrapersonal motives and values corresponding to a healthy lifestyle; expanding the range of alternative activities; developing personal resources and skills to achieve their goals in real life
- Systematic work on prevention of internet addiction is a psychological condition for ending its progress, as it contributes to formation of adolescents' conscious attitude to use of the internet.

The result of our work was a booklet in which we give advice to parents.

- Fill your child's life with all sorts of interesting things, and the need to limit the time for gadgets will disappear by itself. Make a smartphone or tablet an ally! This is possible if you work in the following areas:

**1** Gadget is needed for business. Most children use less than half of the gadget functions. Teach your children to make calls through the smartphone and to use tablet for planning affairs. There are many applications - timetable, diary, photo processing - let the child use them instead of just playing.

**2** You need to reduce the time spent in the game, online, or to block access to certain sites, install filters or software, such as "Parental Control". These programs will not give the child access to inappropriate content and they control the time spent in the network.

**3** Use the gadget when you really have nothing to do – when you wait for the doctor, or you are in a traffic jam. At the same time you should choose educational programs instead of cartoons. So, for preschoolers have a lot of games that can help learn letters, words, numbers, colors, shapes, learn to focus on objects that appear on different sides. After such games five year old kids speak 27% more and better than those who prepare for school in a traditional way, three-year old kids speak 17% better.

**4** Get your child accustomed to reading. Today's children do not like to read books, let alone the school "classics" - a stumbling block and despair for parents. Install in your tablet a "reader" programmer" (there are many of them and they are free), download a book and, as practice shows, the former "Dunno" starts reading in 87% of cases.

**5** Exercise with your smartphone. There is a huge amount of tablets and sports training applications. How to learn to make press ups and pull ups, play football, run and even dance. You don't need to think how to keep your child busy, the programme itself will show how to move. Of course, this is not a replacement for the sports section and a coach, but it is very useful as an entertainment

not to sit all day in a chair. For gadgets with a GPS program there is a sports tracker, they can record the walking route and when you connect to the internet they will put it on the map so, you can see how high your child climbed the hill, and how many calories he burned.

**6** Creative skills can also be developed. Teach your child to take pictures (it is desirable that the gadget has a more or less tolerable camera) to shoot videos, immediately put them in a clip adding titles, screensavers and music. Modern software allows you to do this maybe not with a professional quality, but in an easy and convenient way.

All these measures will not only really teach how to use modern devices, but they will also make the child more self-confident, experienced in exciting and creative projects. The problem inwardness



of some teenagers will cease to be as such, because they will be self-fulfilled and successful.

Love your children, give them as much as possible of the new and the better and the problem with the gadgets will be far-fetched and not terrible.

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# Anti-Bullying Workshop at Talvik School

## - An Example Conducted in 10th Grade with Emphasis on Cyberbullying

Cyberbullying is a relatively new phenomenon compared with the research done on bullying during the last almost 50 years. The schools' commitment to work against bullying also includes cyberbullying. This article describes a workshop carried out in one of the pilot schools participating in the ArctiChildren InNet project.

### Introduction

A definition of bullying is: 'Actions where someone persecutes others, making threats, attacking someone physically or verbally, spreading rumors, or trying to exclude them from social situations that the victims either are forced to be in, or wish to be a part of. Bullying is an unwanted, aggressive behavior among people that involves a real or perceived power imbalance. The behavior is repeated, or has the potential to be repeated, over time'. (Stopbullying.gov 2014.)

Cyberbullying is a relatively new and different way of bullying, and it affects the lives of many young people in their daily life on the internet. For some, digital media may be used as a tool to harass, threaten and bully others of the same age.

A Norwegian survey (Barn og medier 2012) claims that 30 % of the children asked say that they have noticed that cyberbullying happens, 15 % say that they have experienced it themselves, while only 6 % say that they have bullied someone on the internet. According to the ArctiChildren project own survey in 2012, in which Talvik school participated in, the result showed an increase of bullying from an average of 5% in 2005 to an average of 6% in 2012. About 3 % of the schoolchildren reported having been bullied on the internet once a week or more, but 13 % of the schoolchildren reported they were bullied on the internet once or twice during the last months (see another article in this publication. Johansen: Bullying. Results of Mapping in The Barents Region in 2005 And 2012).

In this article, we will present an anti-cyberbullying workshop, which we have conducted in the 10th grade at Talvik School (lower secondary school) in February 2014. The design was to organize an anti-bullying day with six pupils in this rather a small class. The targets were to --make the youth try to define what cyberbullying is, make them state their opinion about it, and make them come up with suggestions what might be done in order to prevent someone from being bullied on the internet. The superior starting point of the initiative was that the pupils should experience a good psychosocial work environment at school, but also learn that what they do and observe in their free time will have great influence on their mental health.

**The workshop was divided into three phases: 1. Explore, 2. Experience and 3. Expand.**

## Preparations

We used two videos from YouTube, which both contained definitions and examples on cyberbullying in our community.

- Fokus på nettmobbing [Focus on cyberbullying]: A video made by two famous Norwegian bloggers; anettemarie.no and sophieelise.blogg.no, where they give examples on cyberbullying and share their personal thoughts about it (see Fokus på nettmobbing 2013).
- Når slutter du å le? [When do you stop laughing?]: A role play made by students at Elverum Upper Secondary School. Their special

focus is on bullying in social media and on mobile phones. (See Når slutter du å le 2012.)

We also used an article about Amanda Todd (Svendsen 2012); a young Canadian girl who ended up committing suicide due to years of cyberbullying, and included a quotation from her mother Carol Todd; “I have lost one child, but know she wanted her story to save 1,000 more” (Bleaney 2012).

Finally, we used a questionnaire about cyberbullying, which originally had American students in New York as its target group: Wired Safety Student Cyberbullying Survey (Student Cyberbullying Survey 2014). We adapted and translated the questionnaire into a worksheet for our schoolchildren, and also made a worksheet for ourselves where the pupils were supposed to rank people on a list, based on who they thought could have the greatest opportunity to influence young people’s attitudes to cyberbullying.

## How the workshop was conducted

### *Phase 1: Explore*

At first, we held a short lecture about cyberbullying in our community. Then the pupils did the adapted and translated American questionnaire. After this individual work, the pupils were divided into groups of three. In these groups they discussed the contents of the questionnaire, tried to define what cyberbullying was. They were encouraged to say something about what they would define as bullying, and on the contrary,

what they would regard as OK comments that everyone should accept.

We saw the YouTube videos, where cyberbullying was presented and defined, and we read some articles about cyberbullying, including the story about Amanda Todd. Most of the pupils had heard about her before, and we used this material in the further discussions. We also discussed the quotation that Amanda's mother stated after her daughters' tragic death, and it made a deep impression on most of the pupils. After a short research on the internet, we discovered that there were many cases of cyberbullying also in our local community; For instance, a local online newspaper, Altaposten, had several articles about young people who had been harassed on the internet.

### *Phase 2: Experience*

The purpose of this phase was for the pupils to develop ideas and make materials that might help prevent cyberbullying. In other words, to do active work that would be of some value in a campaign against cyberbullying. By dividing them into small groups, every one of them would hopefully have to take an active part in this work and contribute with their own personal thoughts and experiences. A pedagogical target behind the task was therefore that each individual should be encouraged to reflect upon cyberbullying, and to be able to express some opinions about it.

The groups were asked what they, as young people themselves, could do in order to prevent cyberbullying. They were encouraged to try to be as concrete

as possible and to write down key words during the discussion.

The main activity in this group work was for each group to make a presentation of their work; something that could be used as material to prevent cyberbullying. This was an open task; the pupils were given suggestions on what to make, such as posters, small video films, role-plays or Power Point presentations, but eventually it was up to them what their final product would be.

### *Phase 3: Expand*

In this final phase the pupils were handed out the worksheet where they were going to rank different groups of people, according to who their believed would have the best opportunity to influence on young people's attitudes towards cyberbullying. The groups of people they had to rank were politicians, celebrities, people with high status on social media, health care professionals, parents and people at the same age as them (their peers). The pupils were told to rank these people from 1 to 7, where 1 would be the ones with the greatest influence, and 7 the ones with the least chance to have an influence on young people. Afterwards, the pupils compared their ranks and discussed them in class.

As a final discussion in class, these questions were asked:

- What have you learnt from this work?
- Why is it important to work with this topic?

## Our experiences and thoughts after the workshop

### Phase 1: Explore

When the topic for the workshop (cyberbullying) was introduced, most of the pupils made comments like:

*«If you by any means put yourself on display on the net, you must cope with the reactions.»*

*«The only one who is responsible for what you publish, is yourself. You cannot blame others.»*

*«Most of the comments are just for fun; they are meant to be funny.»*

*«Cyberbullying is out of control already, there is nothing you can do about it. The only thing you can do is to try to protect yourself.»*

*«What is cyberbullying? It depends on who made the comment and what he or she meant by it.»*

The pupils liked the questionnaire about cyberbullying. They thought the questions were good and straight to the point, and that the survey was not in any way inconvenient; they did not get a feeling that the ones behind the survey wanted to find their identity. They claimed that the questions made them think through what bullying in social media really is, and they liked the fact that there was a possibility to write their own comments to most of the questions.

Among the information that the survey provided, the pupils expressed

that cyberbullying happens all the time, and that it also happens to them and to other pupils in our school. No-one said that they themselves felt bullied on the net, but all of them said that they had written bad comments to others. But, at such occasions, the pupils claimed that they did not mean any harm by writing the comments.

2/3 of the pupils said that they have friends who experience bullying on the internet on a daily basis. All of the pupils said that something has to be done in order to prevent this, they said that cyberbullying must be illegal, but they had different answers to what they actually thought could be done. Some of them suggested a cyberbullying police squad to investigate cyberbullying, while others thought that a youth helpline where students could go to get help, could be a good idea.

The video clips from YouTube and the article about Amanda Todd's death seemed to represent a turning point for some of the pupils. They had heard about this case. They knew that Amanda Todd had published some pictures of herself naked on the internet, and that she had



been bullied because of this, and that she had committed suicide at the age of 15. What they did not know, was that she was only 12 when the pictures were published. After a short discussion about what children at the age of 11-12 are capable of when it comes to understanding the consequences of their actions on the net, everyone agreed that it was not only the children who were responsible for showing caution, but that the responsibility lay more on those elderly people who choose to make comments. The pupils also said that the children's parents are responsible for what their kids do on the internet.

When the pupils discovered that we have some similar stories about cyberbullying in Sweden and Norway too, and that there are almost countless articles on the internet about people who suffer from this type of harassment, the discussion changed thematically from being about whether this is a problem, rather than to what cyberbullying really is and what we can do in order to prevent it.

## **Phase 2: Experience**

In the phase where the pupils were supposed to make something for a campaign against cyberbullying, both groups decided to make a Power Point presentation. They chose to use examples on what cyberbullying might be, either by using short video clips from YouTube, or cases of bullying which they found on the internet. Both presentations were held in class when they were finished, and followed by a short discussion about their contents.

One group chose to have pupils between 9-12 year old as their target group, while the other group wanted to make a campaign for pupils attending a lower secondary school (aged 13-15). The pupils worked concentrated and put a lot of effort in their work.

The group that made a Power Point presentation for the younger pupils claimed that having anti-cyberbullying campaigns on "pupils like themselves", is too late. Instead, they wanted an "early effort", as they called it, meaning that the anti-bullying work must start early. The pupils had this opinion due to the fact that children enter social media on the internet at the age of 9-13, and that they are naive and easily influenced at this age. One of the pupils remembered how she was herself when she was 13, and she concluded that she had a much more mature approach to the internet now than then. She claimed that if she had been more mature at that age, she would never have published some of the things that she did at the age of 13. This group's presentation contains a definition on cyberbullying, ideas on how to prevent it from happening, and some thoughts on what you may do if you are a victim of it. They have also added some websites you can go to if you need help or you want to talk about cyberbullying.

The group that had chosen pupils of their own age as their target, made a Power Point presentation where they tried to define what cyberbullying was. They showed some examples of it (the Amanda Todd video and examples on harassment using sms or comments to blogs), and they gave a warning about what they called "the cyberbullying virus". They also added a slide to their

presentation, where they presented some posters against bullying on the internet.

### Phase 3: Expand

On the worksheet where the pupils ranked different groups of people, according to their believed opportunity to influence on young people's attitudes towards cyberbullying, the pupils had rather different views, but when we studied their answers, we found some interesting facts.

The pupils believed that it is their peers (people at their own age) that have the greatest opportunity to influence young people's attitudes to cyberbullying, after that comes celebrities and parents. Teachers and people with high status on social media represent a lower score for the pupils, while health care professionals and politicians are at the bottom of the hierarchy. According to these results, it would be a good idea to let pupils hold their Power Point presentations for other pupils, since they really feel that if they are lecturing their peers, it may have an impact.

Working as a teacher it is also interesting for us to notice that the pupils, according to the survey, do not have a great belief in the teachers' possibilities to have an influence on young people's attitudes towards bullying. However, in the final discussion, most pupils wanted the teachers to do something if they discovered cyberbullying. To us it seems that the pupils may want to show that they are reflected and independent individuals, but when reality hits in and bad things happen to them, they want the adults, also the teachers, to intervene.

In these final discussions, the pupils showed that they had acquired new knowledge and changed their opinions on several issues regarding cyberbullying. They explained this due to the fact that the workshop had made them more aware on some issues they had not thought so much about earlier. They expressed that the topic is of great importance to work with, since cyberbullying is a major problem and everyone knows that it happens.

At this stage of the workshop, the pupils had changed their opinions about who there is to blame for the comments made on social media on the internet. They did not anymore hold only the ones who publish something on social media responsible, because of the fact that he or she could be a minor. Now their opinion was that not all children really can understand the perspective of the consequences of their online activities, and that their parents should keep an eye on them and intervene when necessary.

By contrast, to their previous opinion that no one could do anything about cyberbullying, the pupils now claimed that you can try to influence, create awareness and perhaps change attitudes, and thereby do something in order to prevent cyberbullying from happening. According to the pupils, the anti-bullying work has to start already at the age of 9-12, and that the information should be given by young people like themselves, in order to make the biggest impact.



## Conclusion

As mentioned earlier in this article, the superior starting point of the initiative of this anti-cyberbullying workshop was to do something that could contribute to school work in order to create a good psychosocial work environment for our pupils. To create awareness about the impact their actions on the Internet may have on their own and other's mental health will help them to express opinions about it, and perhaps prevent some of the cyberbullying that young people experience. If we as a school can give them more knowledge about the problem, and give them advice on where to find help if they experience bullying on the internet, it may contribute positively to their mental health, which will be of great value in our effort to seek a good psychosocial work environment.

A class of six pupils is obviously a very small group, and might not be very representative for how this workshop would work in a larger class, but - in our opinion - some of the experiences this project provided were interesting to notice. Among them, we would emphasize the fact that most pupils showed a change in attitudes about whether there is a possibility to do something about cyberbullying. At first, they claimed that there is nothing that you can do about it, but after the project, they were more engaged about the possibility they have in order to make an impact on others.

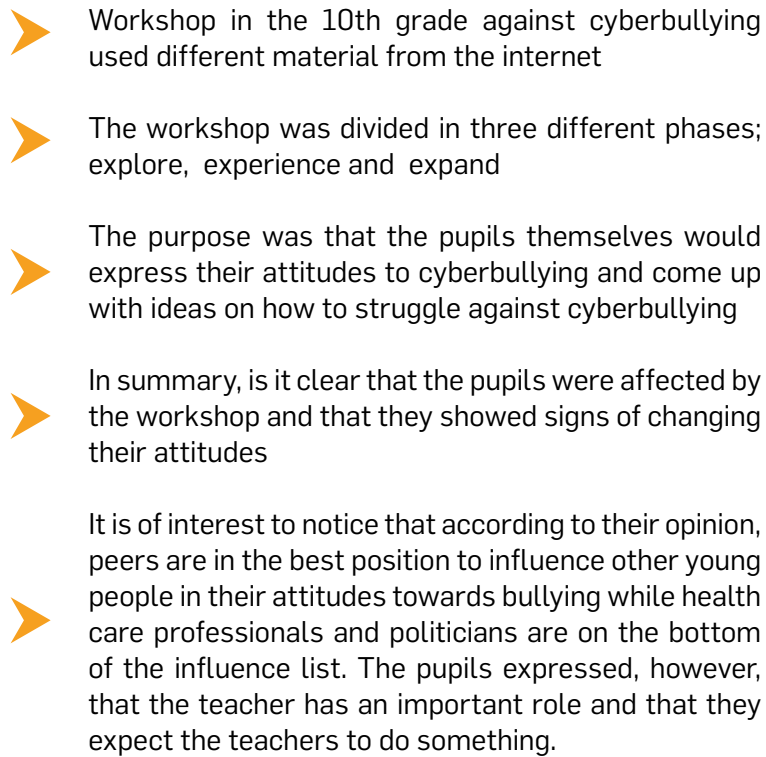
The overall objective of the ArctiChildren InNet project is health promotion among schoolchildren. In other articles in this publication, there is evidence that bullying can cause psychosocial problems, and in the worst

case cause disablement in the long term. Subsequently, there are many reasons to keep a sharp focus on bullying.

The example from Talvik is founded on the principle that students should be heard because they are entitled to give their opinion in matters concerning themselves. In addition, in this example, we can clearly track the principle of action research/action learning. This means that empirical data is transported back to the source, in this case, the pupils. This gives them the opportunity to exchange views, discuss, learn and, not the least, be constructive in the solution of the challenges they are confronted with. In this example, schoolchildren's own approach to anti-bullying work plays a central role.

Nevertheless, we believe that there are many challenges in how the school should manage a digitization of the media world that seems to provide limitless possibilities for all kinds of communication. The operational use of ICT is a skill that schoolchildren are learning very fast. The students have less expertise in reprogramming and the ability to have control over their own PC.

In addition, we will draw attention to universal media expertise that is among other things an ability to critically evaluate the different text forms, writing genres and analyze messages in images and texts. Media literacy is all about separating information from malicious messages, anything that would be considered as the basic knowledge in order to resist bullying on the web.

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- Workshop in the 10th grade against cyberbullying used different material from the internet
  - The workshop was divided in three different phases; explore, experience and expand
  - The purpose was that the pupils themselves would express their attitudes to cyberbullying and come up with ideas on how to struggle against cyberbullying
  - In summary, is it clear that the pupils were affected by the workshop and that they showed signs of changing their attitudes
  - It is of interest to notice that according to their opinion, peers are in the best position to influence other young people in their attitudes towards bullying while health care professionals and politicians are on the bottom of the influence list. The pupils expressed, however, that the teacher has an important role and that they expect the teachers to do something.

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# Physiotherapists join social media – Implementation in the ArctiChildren InNet project

This article describes the ways how physiotherapy education at the Lapland University of Applied Sciences is using online technologies, implementing them in the ArctiChildren InNet project. First, information is given about how and for which purpose young people use online technologies; concepts social media and chat are defined, and their possibilities in health guidance are highlighted. In the latter part of the article projects in the Physiotherapy Degree Programme are introduced and their significance discussed.

## Diffusion of technological innovation and ArctiChildren InNet project

No one has been able to predict the rapidity with which children and young people are gaining access to online, convergent, mobile and networked technologies. Technological innovation and diffusion pose parents, teachers and children the significant task of acquiring, learning how to use, and finding a

purpose for the internet in their daily lives. (Ólafsson, Livingstone & Haddon 2013, 6.)

Children and young people search their way to use the internet and look for things of which they are interested in. They search and build their identity and conception of the world with the help of all the information technology applications. (Jokinen 2014, 21.) In the same way, according to Rahja (2013, 7), by publishing pictures and videos, and by sharing experiences and writing blogs young people build their identity. At the same time, children and young people have started to exercise their most basic participatory rights in the internet: the right to freedom of expression and information, freedom of organization and participation as well as the right to privacy (Staksrud 2013).

Of European 13- to 16-year-olds, 80 % use the internet for communication and social interaction by visiting social networking sites, SNSs (Livingstone, Haddon, Görzig & Ólafsson 2011b, 34). Across 25 European countries, only a quarter of children use activities as blogging, spending time in a virtual

world, visiting chat rooms and file-sharing (Livingstone, Haddon, Görzig & Ólafsson 2011a, 44).

In Finland, the daily communication through internet (56 %) is already more common than making phone calls (51 %). Still, among under 10-years-olds, 71 % don't contact their friends by internet. But about 94 % of 15 to 19 years old people use social media almost daily. In this population more girls (93 %) are active than boys (85 %). (Myllyniemi & Berg 2013, 24, 34–35.) In summary, under 10 years old children are in contact with their friends by phone (including Skype and other internet phones), whereas contacting through the internet in a real time chat begins to be more common after this age (Myllyniemi & Berg 2013, 25–26).

As we all know, online and mobile technologies give us huge opportunities when it comes to learning, participation, creativity and communication. Thus, in both public and private sector, diverse and ambitious efforts are currently being carried out to promote digital learning technologies in schools, e-governance initiatives, digital participation and digital literacy. (Ólafsson et al. 2013, 6.)

In the ArctiChildren InNet project the target group is 13 to 16 year old adolescents, who actively use social media. According to Livingstone (2010, 55), the most popular social media sites among young people in Europe are Facebook, YouTube, IRC-Galleria, Blogger, Instagram, Twitter, Google+, Timbur, Kuvake.net, Suomi24, Findance and Demi. Weissenfelt and Huovinen (2013) add to the same list Instagram, and all of here listed sites were also the most popular over long term among young people in Lapland, Finland, in surveys by

Maunuvaara (2012) and Kinnunen and Uljas (2013). Services are mostly used by smart phones (75 %) and young people produce actively podcasts, texts, and photos, too, and publish them usually in YouTube and Flickr (Leppälä et al. 2014, 7–10). The number of smart phone users is rising and might be higher at the time when this publication comes out.

## Social media and chat

In general, social media means services and applications that function in the internet, and by which users can communicate and produce their own content. It is accessible through different information technology applications. Users can be in many different roles in social media: they can be plain receivers of the information, but they also can produce and share contents in different ways, for example by following, liking, sharing, and poking, depending on the possibilities that the application gives. (Jokinen 2014, 19.)

This is the biggest difference between social media and traditional mass communication, where one person communicates to several others and thus the communication is from its starting point of one-way type only. Through different possible roles social media produces socialization, networking and a sense of community. (Jokinen 2014, 19–20.)

Online communication between the users and the receivers takes place in different discussions, called chats, mainly by writing. Chatting in the internet and a spoken discussion have exactly the same principles. Thus, a chat — whether it is an



online one or a traditional one — is defined as a dialogue of two or more equal participants, who are thinking and getting acquainted with a matter of interest. Thinking together means working the information in a way that all roles in the discussion are equally important. (Jokinen 2014, 14–19.)

According to Aarnio et al. (2001, 26) by an online chat a person is able to create a discussion with another person, and try to understand the other one's feelings, thinking and actions. It enables the bringing of your own thoughts for the use of the group, and at the same time you can learn from others when they bring their thinking to the discussion. In this way the group builds a larger joint understanding of the issue, which includes different perspectives into it. Maybe even more importantly, this process gives the person a possibility to change his or her opinion. If this happens, attitudes will most probably be changed too which leads to a change in deeper values. (Jokinen 2014, 26.)

Thus, in a chat participants are active, committed, interactive, respecting, open and sincere. Also, the participants should be without any aspirations to power, no losers or winners exist. (Jokinen 2014, 16.)

### **Possibilities of online guidance in health promotion**

By creating and taking actively part in online discussions, private and public organizations and other institutions can help young people in their own environment. It is sometimes useful that for example in online chats, which deal with health, an adult expert is taking part, too. As a member of the group they

can bring their own expertise to other participants and at the same time prevent incidents, which are hazardous for the health. Importantly, they take part in the discussions as equal members giving reliable information, but taking notice of their responsibilities as adults. (Jokinen 2014, 26.)

Health guidance aims to support on the one hand health promoting behavior and on the other hand interacting activity in a group or individually between two persons, where customer's resources are paid attention to in a best possible way (Poskiparta 2002, 24). Physiotherapy education at the Lapland University of Applied Sciences has developed and produced evidence based material and contents in the ArctiChildren InNet project for health promotion which can be used through the internet. Also, realtime guidance and consultation has been piloted.

Because Kiilakoski (2011, 83) has noticed that adults, experts and young people use different concepts in their language, health guidance and education material have been produced together with the young people and partly on their terms. Online and mobile applications, these modern time building places of values, are meaningful meeting places also for physiotherapists to carry out health guidance and education, and thus to be from their part involved in the development values related to health and functioning in children and young people (Aalberg et al. 2007, 65–67).

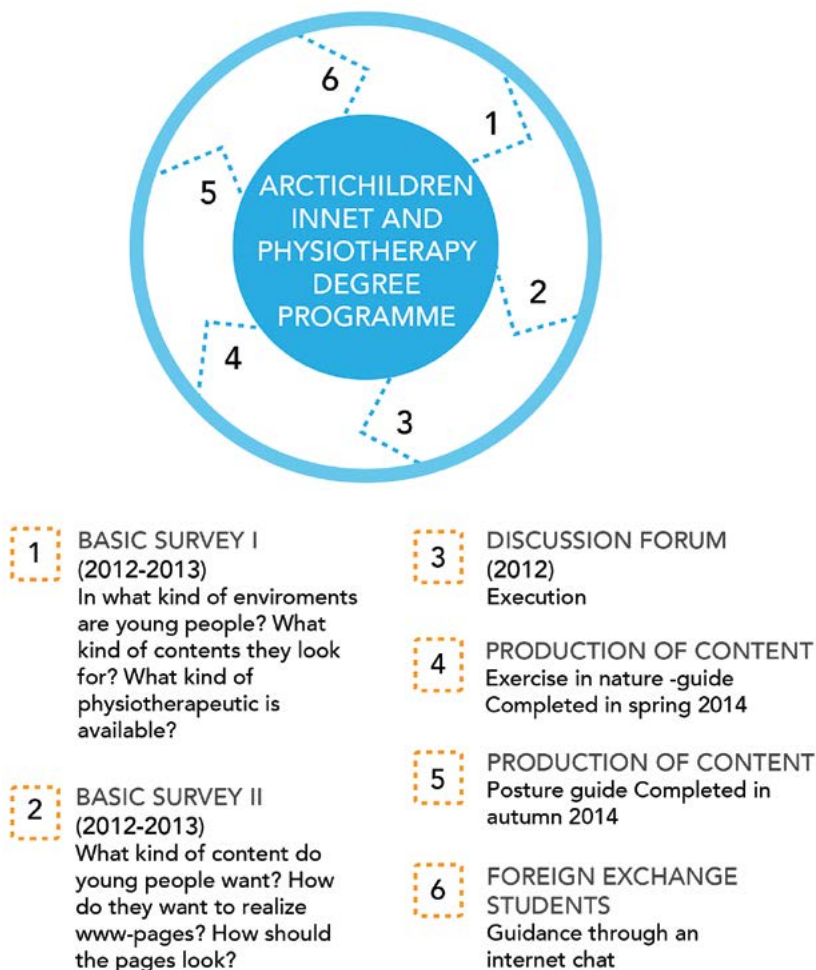
Nevertheless, it is important to recognize that during the periods of youth the needs and places of grouping are different. This must be taken into consideration when developing physiotherapeutic sites targeted for

young people. During puberty, where the ArctiChildren InNet sites are currently directed, it is important to invest in spontaneously arising mass groups. In the next phase of youth groups they become smaller and are directed towards hobbies or ways of thinking. (Aalberg et al. 2007, 66.)

On the other hand, it has to be remembered that information is produced and changed at a fast pace and in real time in social media (Scoble et al. 2006, 65–66). This places a very big responsibility for the expert when

producing material and giving reliable advice in an ethically correct way.

A discussion forum and a chat has been developed in the ArctiChildren InNet project, where it is possible to discuss as a group or dyadic about interesting issues with a health professional. In spring 2013, a physiotherapy student accomplished an apprenticeship in this project, where a part of it was to implement a chat with a theme called physiotherapeutic health guidance. Even if the contacts during that chat were not so many, the



**Figure 1.** Physiotherapy Degree Programme’s different projects and activities in the ArctiChildren InNet project.

functionality of the chat was confirmed. The next step is to enable physiotherapy students to train their verbal communication and guidance skills in order to receive valuable experiences about the chats' possibilities to convey information regardless of long distances.

In November 2014, physiotherapy students gave online guidance and advice through the ArctiChildren InNet chat. Gained experiences are used in developing online guidance education in the physiotherapy degree program.

## **Physiotherapy education and cases in ArctiChildren InNet project**

### **Basic surveys I and II**

For several years at the Rovaniemi University of Applied Sciences (since 1.1.2014 Lapland University of Applied Sciences) it had been mulled over how possibilities of an online (operational) environment would help to maintain and develop functional capacity, especially among children and adolescents. The Finnish Association of Physiotherapists (2012, 18) has announced in its program that in the future a physiotherapist's expertise includes preventive work and utilizing new technologies. According to Talvitie et al. (2006, 178) one joint task of the physiotherapists is health guidance and health promoting advising, by which they aim to effect health-risky behavior. Since health habits and health behavior are built up during childhood and youth, it makes sense to consider how

physiotherapists reach this age group in the best possible way.

In spring 2012 the above mentioned issues were developed further together with the ArctiChildren InNet project (figure 1). The aim was to investigate young peoples' habits using the internet in Finnish Lapland, and to find out what kind of content the young people would like to have in online physiotherapeutic guidance (Basic surveys I and II), and how the www-pages should look (Basic survey II).

A master's degree student at the Rovaniemi University of Applied Sciences, Maunuvaara (2012) made in the Basic survey I, a study about matters of which adolescents — who worked in the ArctiChildren InNet project together with the project workers — were interested in regarding health promotion in physiotherapy. Both Maunuvaara (2012), Kinnunen and Uljas (2013) in the Basic study II, reported about topics such as musculoskeletal health, nutrition, and exercise about which adolescents had searched information in the internet, and in addition in Maunuvaara's (2012) work human development and intoxicants as interesting issues emerged, too.

Physiotherapy students Kinnunen and Uljas (2013) made their Bachelor's thesis (Basic survey II) at the ArctiChildren InNet project investigating issues in physiotherapy that were interesting for young people in Finnish Lapland. Their pre-investigation was targeted at professionals working with children and adolescents (n = 43), such as public health nurses, school social workers, teachers, and student counsellors. It indicated that exercise instruction, nutritional advice, and advice about musculoskeletal injuries were the most common issues in health

promotion work. Interestingly, the same issues are central in physiotherapists' preventive work.

Especially the reduction of the voluntary exercise among children and adolescents (Aira et al. 2013, 13) and accordingly an increase in musculoskeletal diseases and obesity (Vanhala 2012, 49) require fast and effective health conducive channels/means, of which social media is certainly a noteworthy alternative. Moreover, Kinnunen and Uljas wanted to know what kind of content on the www-pages the adolescents were interested in. They wanted the www-pages to be easy to use, functional and nice-looking. (Kinnunen & Uljas 2013, 31.)

The actual target group in the study of Kinnunen and Uljas (2013, 39–40) were school children in the ArctiChildren InNet partner schools (n = 232). According to the study, 35% (n = 80) found easily and 30% (n = 68) found reasonably well guidance related to physiotherapy. One hundred (42%) of the respondents thought the physiotherapeutic guidance in the internet was quite useful, but no one thought that an online physiotherapist was useful or very useful.

### **Production of content for the ArctiChildren InNet webpages**

Based on the findings from the above mentioned studies, during 2014 we have been able to produce and develop ArctiChildren InNet www-page content, and have gained experience in using the discussion forum and chat.

The webpage content deals with exercise and posture, and the ideas were taken from Finnish, Swedish and Russian

adolescents who took part in the Basic surveys I and II. At the end of this process it is easy to agree with Kangas et al. (2008, 4–5) who stated that creating contents for adolescents on public sites is not too complicated but rather becoming an everyday activity.

Through the ArctiChildren InNet (2014) webpage Materials -section it is possible to access an outdoor exercise guide that was planned and realized by physiotherapy students Heidi Pauna, Reija Saarenpää and Päivyt Jortikka in 2014, together with 7th to 9th grade pupils in the Rovaniemi area.



### **Outdoor Exercise Guide:**

The guide gives information about exercising in nature and suitable places for exercising around Rovaniemi, Finland. Pupils' parents and teachers too can use the guide when searching for, or planning different ways of carrying out physical education lessons. During the planning, piloting and execution phases of the study, the aim has been to listen to the adolescents' opinions so that the guide would be as understandable and practical as possible.

Further, physiotherapy students Korjonen and Palojärvi (2014) have in their Bachelor's thesis made a posture and ergonomics guide with the help of interactive methods. They have been working with Finnish and Russian 8th grade pupils in workshops with mind

maps, receiving valuable information about posture related problems and ergonomics. This posture guide will be published on the ArctiChildren InNet webpages.



**Posture Guide:**

## Discussion

Unfortunately physiotherapists have not found all the possibilities of the internet and social media as excellent tools for their work. Nevertheless, lots of webpages can be found where physiotherapists help with problems related to functioning of the musculoskeletal system. They mainly give guidance one-way only, without discussing easily online with customers, although we are convinced that this is a

fruitful way to act in the modern times social media.

Of course it has to be taken into consideration that health professionals have to share current, evidence based and reliable information and that they obey the ethical principles of the profession (Ahmed et al. 2012, 2). Ethical principles include among others protecting privacy, ensuring information security, unbroken confidentiality, and reliability, which must unconditionally be obeyed in social media, too.

The ArctiChildren InNet project at the Lapland University of Applied Sciences has created among others an excellent learning environment for physiotherapy students, where they have been able to develop their abilities in producing content for the web-page as well as know-how in guidance and advice. The ArctiChildren webpage is a good example for professionals, such as physiotherapists and other health educators, who work among health promotion with children, about how to adopt new ways of acting and profiting from scopes enabled by new technologies.



### Implications for school health:

- posture guidance
- prevention of injuries
- exercise guidance
- nutrition
- relaxation

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# From Thoughts to Words to Pictures

## – How to Express Yourself Visually and How to Audiovisualize Your Teaching

### Case 1 – ArctiChildren InNet films; Lapland, Finland

“And action!” shouts the director. Elementary school’s cafeteria wakes up and the leading actresses start their dialogue about the next weekend’s plans: “to go or not to go to disco and more importantly with whom to go”, those are Shakespearean questions in cinematic drama in 2014. When actresses are done with their dialogues, the director shouts out again: “Thank you!” He seems to be pleased with what actors have done so far. So what’s going on in this Lappish school cafeteria? Hollywood invasion or at least a national Finnish film production? Answer: student film production and more precisely, “ArctiChildren InNet” – film production.

The main idea of the ArctiChildren InNet – short films was to tell stories about young peoples’ lives and their possible health related issues (both physical and mental). And what would be a better way to boost the impact and interest towards those stories than to

make movies about them and uploading them to internet. The fact is, that the youth of the today are more visually and media technologically oriented than ever, both in their everyday life and in the school. Whereas earlier generations have typically been defined by political or economic events (think of the World Wars, the Great Depression, and the Civil Rights Movement), this generation of young people are defined – and, more importantly, defines itself – more by the technologies they use. (Davis 2014.)

Therefore, schools are also facing a situation where they have to change their teaching methods, because their students study habits have moved from literal sources (e.g. books) to visual mobile sources of information (internet and mobile devices).

We found that certain dimensions of creativity, such as originality, experimentation, and complexity, have diminished in the literary domain while they have increased in the visual domain. With respect to the visual art findings, we note that digital media provides a

(Photo: Sofia Ketola)



(Photo: Tiia Hyvälä)



wider, easier,  
and cheaper array of tools  
for youth to express themselves creatively.  
In addition, the internet has expanded  
access to sources of inspiration as well as  
opportunities to receive feedback and  
recognition for one's artistic  
productions." (Davis 2014.)

In our case students were improving  
both their literal and visual skills. So,  
how did those stories then actualize to  
five movies? The process is always very  
simple even if you are producing short,  
non-budget, amateur films or big budget  
professional movies: first you get the  
main idea (aka theme) for the film, then  
you write the screenplay, shoot the  
screenplay, edit filmed and recorded  
material and finally you distribute the  
final product. In short: from thoughts to  
words to pictures. Through all these steps  
we have also created a perfect example of  
multimodal learning experience where  
classical learning methods of thinking,  
reading and writing have also got added  
practical audiovisual processes and team  
working.

What made our productions different  
from normal school productions was,  
that there were students from different  
educational institutes and even  
educational levels: from Lapland  
University of Applied Sciences and two  
local Lappish elementary schools. So

members of the  
production teams were from 13  
years to almost 30 years old.

The process began in the Lapland  
UAS's faculty of culture and business in  
Tornio where we started to discuss  
during our media studies about possible  
themes for films: sexuality, alcohol,  
energy drinks, social media, social media  
addiction video game addiction,  
relationships, loneliness, isolation,  
depression, parental expectations causing  
stress, social stress and so on... it seems  
that happy themes don't make good  
films. We also did some research on  
similarly-themed films in internet: what  
kind of approach they had on the chosen  
subject and how we could tell our stories  
a bit differently. Films that had the  
strongest impact on us were produced by  
the Lasinen lapsuus – Fragile Childhood  
– project. Initiated in 1986, Fragile  
Childhood has persistently sought new  
and efficient methods to secure a less  
troubled life for children suffering from  
their parents' substance abuse. One of  
Fragile Childhood working methods is to  
offer thought-provoking materials for  
public spaces in the form of quality  
posters and postcards. In addition to  
traditional print media, Fragile

Childhood has also produced videos that have been shown on television and distributed online via social media. (Fragile Childhood 2014.)

**Check out the film "Fragile Childhood Monsters":**

All the films were visually strong and original, storywise simple but striking and characters and themes were easy to identify with. The most important thing was, that all the stories were very

believable and "true" (as much fictional stories can be): films were based on the actual stories written by children with a background of an alcohol abuse in the family. Like I said before: from thoughts to words to pictures.

After the research and several discussions we had a list of over 20 themes and health related issues. How to choose the "right" ones for our target group audience of 12-15 years old teenagers? The solution was simple: to ask assistance from those teenagers. A list of possible themes was then sent to elementary schools of Rantavitikka in Rovaniemi and Karihaara in Kemi. Five themes got selected and we moved on with UAS students to the next step: screenwriting. For the actual screenwriting we used again the same

(Photo: Sofia Ketola)



tactics and we sent draft versions of screenplay to our elementary school students. Feedback was sometimes surprisingly harsh as our ideas were “cliched, lame and even false”. That’s what I call a reality check and a great learning experience: you have to do your homework and not to pretend to know what teenagers nowadays think and do. Eventhough you are now 25 years old your teenage years are long gone. But after some rewriting both camps were satisfied and we were ready to move on to production.

All the films except one were shot in the elementary schools of Rantavitikka and Karihaara and the actors were the schools’ students and staff. The personnel behind the camera (director, camera operator, lighting engineer, sound recordist, boom etc.) were depending on the film either first, second or third year media students of the Lapland UAS. For me as a senior lecturer and also professional filmmaker it was very rewarding to see first-time filmmakers in front and behind the camera working together enthusiastically; even though filming equipment was very light and practical working days became long and demanding. One of the reasons why we tried to avoid “too” professional equipment during the production was to show, that films could be produced without expensive cameras, sound and lighting equipment and therefore films could easily be done with the basic educational equipment the institution has.

When the films were shot the post-production began and that was the only part of the production that was fully accomplished by the Lapland UAS students. After the post-production the

films were ready to be released on the ArctiChildren InNet YouTube channel.



**ArctiChildren InNet  
YouTube channel:**

So, what did I learn from this experience? Lots of things but first of all I learnt that young people nowadays, The App Generation, are both willing and able to express themselves by photos, selfies, animation and videos etc. They also have gadgets, devices, apps and free distribution networks which they know how to make use of to actualize their ideas. They aren’t shamed to share this creativity with millions of users around the world. So where does it leave us as educators, parents and adults; to go with the flow and to encourage young people to express themselves or to stick with the “old school” methods by saying, “that it’s bad for kids to hang out in internet”? But if we want to encourage them we also need to know the possibilities of the modern day technology as an everyday tool to express oneself. What I usually hear from teaching staff when talking about possibly updating their media skills is that everything is so complicated in the “digital world” even though things have actually got easier and simpler. So, I decided that it was time to demonstrate teachers how easy it could be to produce material for this “complicated digital world” together with new-found media geniuses aka students.

## Case 2 – ArctiChildren InNet workshop; Tornio, Finland

During three days (16.-18.9.2014) an international workshop called How do I produce digital material with my pupils both teachers and students from Finland, Russia, Norway and Sweden learnt about the benefits of visualization as a creative teaching method. “The innovative use of educational technologies provides higher education institutions valuable opportunities for their staff to design media enhanced, interactive, more inclusive and engaging learning environments. The key motivation for incorporating educational technologies into the curricula is unquestionably the desire to improve the engagement and learning of students. To assist with this the increasing use of

multimedia in teaching has provided many opportunities to present multiple representations of content (text, video, audio, images, interactive elements) to cater more effectively to the different learning styles of an increasingly diverse student body.” (Sankey, Birch & Gardiner 2010.)

The main workshop was divided in three smaller workshops and I was responsible for the one called “How to audiovisualize your teaching” in which we produced 4 short films again



about the same themes as before with the students.

What made the process different than our previous productions was that the production crew was formed from an international group of teachers, most of them first-time filmmakers. The other interesting point was the chosen camera and lighting technics: two basic Samsung tablets, flashlights, cheap handy sound recorder, no budget and all the locations in a walking distance. The reason was again to point out, that filmmaking is always about good ideas and working together and not about the technical issues. Nowadays actually most of the mobile phones and tablets have pretty decent cameras with video recording function; at least good enough for a small-scale production with an online distribution. It was also good to show, that filmmaking is not so time consuming as many might imagine: during the 3-day workshop we wrote, produced and edited four short films. The process was again the same as before: first day we talked and discussed about possible themes and then we wrote the screenplay, second day we shot films and third day edited them and had a nice gala premiere evening.

All participants were happily surprised and proud of their final results: very first films. Also the film making process became clear to all of them and many of them promised from now on to produce such short films with their students in their own educational institutes. The goal of the workshop was to find new innovations and learn how to use audiovisual productions (in our case movies) as innovative, activating and motivating teaching methods, and we succeeded very well. “The increasing use of multimedia in teaching has provided

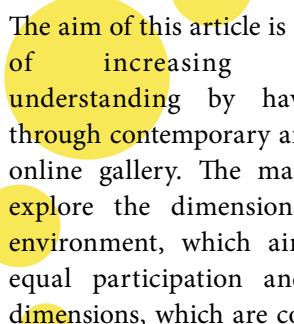
many opportunities to present multiple representations of content (text, video, audio, images, interactive elements) to cater more effectively to the different learning styles and modal preferences of an increasingly diverse student body“ (Sankey, Birch & Gardiner 2010). Also the older participants were surprised how simple the technical equipment was to use to express their ideas and imagination. So it’s never too late to learn new things if you believe in and foster lifelong learning.

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# Art Evokes!

## – Use of Online Environments to Promote Pupils' Wellbeing



The aim of this article is to explore ways of increasing transnational understanding by having dialogue through contemporary art and using an online gallery. The main focus is to explore the dimensions of the web environment, which aims to support equal participation and agency, the dimensions, which are connected to the pupils' self-esteem and wellbeing. The aim of the development work is to promote dialogue and open a space for different voices to share and reflect different identities in a transnational context.

### **Pupils' voices in web environment**

The web environment offers pupils an opportunity to communicate through both visual and text-based multilingual "voices". One of the aims is to enhance participation at the individual, community and societal levels. At the same time it is a question to promote well-being and health by means of art.

We are following the priority areas of Art and culture for well-being program (Liikanen 2010), i.e. culture and art in promoting social inclusion, capacity building, networking and participation in daily life and living environments, in our case at schools.

We will examine two projects that are combined by the use of web environment to promote pupils' well-being. In ArctiChildren InNet the project supported and developed the pupils' knowledge in health and well-being with a multifunctional web environment including an interactive learning space to look for information from produced materials, other pupils' projects and a forum to pose questions anonymously to health care professionals. In figure 1 you can see the main page of the ArctiChildren (2015) website. On the right side there is an integrated window with a Facebook page and YouTube -channel which makes it possible to post images and videos of the school projects and to comment them. Google Drive shares the slide materials.

**Figure 1.** ArctiChildren InNet website main page.

Creative Connections was a three-year collaborative research project (2012—2014) involving six partner universities and 24 schools in six European countries (Creative Connections). The consortium worked with teachers to provide an active inter-country dialogue, specifically among pupils of primary and secondary schools, age 7–18. Creative connection's topic was to explore the identity and citizenship themes through contemporary artworks and art projects. The topic of identity as health and a way of life, touched the pupils everyday life and motivated them to discussion and work. They were given a place and a voice

to tell about their culture and lifestyle to their international peers due to the blogging in the online learning environment.

Blogging and other social media are one of the eventual realizations of web 2.0 technologies. Using an online environment makes learning independent of time and place. It gives a chance also to shy pupils to participate with their peers and get their voices heard. Blogging gives students an ownership over their own learning and an authentic voice allowing them to articulate their opinions and inform their learning. Using a web environment



contributes to identity-formation in students. It fosters the development of writing and research skills as well as digital skills and visual expression. (Richardson 2006, 27–29; Holmes & Gardner 2006, 62–64.)

Both blogging and a game like learning space aim to support an active role of the learner and to motivate to explore the subject. It offers a space for agency, which comes into existence in social interaction, as a part of interrelationships, cultural norms and conceptions. (Mäkitalo & Wallinheimo 2012, 11–13.) The web environment in both projects enables the learning to continue outside of the school and the pupils' works get a wider audience outside of their classroom. It also provides the pupils with skills to future work life where they are surrounded more and more by different media and information structures, and most of the communication happens in the internet.

A web environment can create a sense of belonging to a group, for also the ones that normally see it difficult. The use of images, videos and online translation machines makes the web environment a potential place to communicate across the cultural and language borders and to increase transnational understanding.

## **Contemporary art and agency**

Images are never innocent. Contemporary art observes and deconstructs the means by which images and media portray the world. Art is constantly commenting on and at the same time constructing and reconstructing the current world situation, communal and personal issues.

It is commonly agreed today that arts can be a powerful tool for social change. Art plays an important role in sustaining, developing and regenerating communities. Art evokes, it can promote understanding, and result in a shift in the attitudes of the participants and audiences, and - it can promote wellbeing. (See Hyyppä 2007; Liikanen 2010; Konlaan 2001; Matarasso 1997.)

Contemporary art seeks to make room for interaction and participation; it is often work conducted with various groups and communities. Contemporary art emphasises dialogue. (Hiltunen 2009; Varto 2012.) That in mind we started to create the online Gallery for the Creative Connection. The Gallery works as a model for analysis of contemporary art which allows for collaborative activities and dialogue in a multicultural environment. Pupils from the six partner countries created artworks based on the Gallery and communicated with one another via blogs on the website. The Gallery offers various approaches to art so that teachers can deal with the themes of personal, local and national identity and 'European connectedness' from different perspectives.

The Gallery was instructed to be used for exploring different approaches to learning which is required by the different roles of art. The database developed by Mirja Hiltunen (Table 1) was divided into five categories: Art as Cultural Self-Expression, Art as Cultural Interpretation, Art as Cultural Reporter, Art as Cultural guide and Art as Cultural Activism. The categories were developed on what Susan Lacy (1995) describes as the different roles of an artist. The intent was to cover the large range of contemporary art from the different

materials and techniques to the different approaches and ways of working which artists use today. Besides the traditional self-expression and visual reporting, the Gallery presents also community art, site specific art and environmental art as an artistic and art pedagogical strategy (see Coutts & Jokela 2008; Hiltunen 2010; Adams 1997; Felshin 1995; Kester 2004; Kwon 2002; Lacy 1995; Neperud 1995).

With the given guidelines, the six national teams each proposed around 20 artworks for the gallery. The Finnish team coordinated the creation of the gallery and made the final selection from almost 120 pieces of works to 74. The aim was to have a balanced selection of topics, different media and nationalities presented. The topics for the categories also developed their final form in the collaborative selection process together with the six partner universities.

An important but critical question, which should be examined is whether contemporary art or community-based art education practices in multicultural projects can actually yield genuine dialogue, and whether such projects can steer us towards non-exclusive participation. Reflexivity must be linked with the very essence of contemporary art and art education. Reflexivity requires willingness and an ability to face and understand the world outside the community. Reflexivity should form one of the central aspects from the very first moments of planning and brainstorming, all the way to the final evaluation of art activities. This end is pursued by means of a collaborative, participatory methodology and dialogue. (See Hiltunen 2008; 2010.)

According to art historian and critic Grant H. Kester, whose research focuses

**Table 1.** The five categories of the roles of contemporary art – Finnish examples of using the categories as a help for collecting the art works.

Artist's strategi	private ..... .....public	private ..... .....public	private ..... .....public	private ..... .....public	private ..... .....public
Country/ Region	Dimension A Art as Cultural Self-Expression	Dimension B Art as Cultural Interpretation	Dimension C Art as Cultural Reporter	Dimension D Art as Cultural Guide	Dimension E Art as Activism
Finland	1. 	3. 	5. 	7. 	9. 
	2. 	4. 	6. 	8. 	10. 

on socially-engaged art practice, what is essential in dialogue is the extent to which an artist has succeeded through the dialogue to activate and initiate emancipatory points of view. This calls for a critical understanding of the ways in which emancipatory points of view might be limited or threatened. (Kester 2004, 69.) Embedded in a large array of cultures, art challenges established orthodoxies, reflecting on the transition of cultures, and providing a focus for exploring social issues. Contemporary art challenges the belief system within art education, too. However, as philosopher Juha Varto (2012, 82) states: “We simply cannot say that we follow the path the path marked by art, as if imitating art procedures would deliver the needed change.” Change is needed – and change involves strategic thinking.

The art education research and development projects in the University of Lapland are an important addition to this strategic thinking in art education but also to the broader discussion of wellbeing and cultural policy, and the analysis of art’s significance in affluent societies. The analysis and development of art’s role is accomplished in a performative manner, through interaction and dialogue with those involved. Such an analysis requires reflexivity – self-awareness and appreciation of the processes involved in producing meaning and formulating artistic knowledge – and the ability to relate the meanings encompassed in artistic processes and products to a broader socio-cultural context. (Hiltunen 2010, 135–136; Jokela 2008.)

In this development work we see contemporary art as a means of ‘making visible’ or initiating discussion – an activity that can take place in several

different forms. Contemporary art is indeed an open space. In the Creative Connection -project the process of collecting the art works was a good example of contemporary arts ability to promote a reflexive, dialogical space. The significance of art instruction is in its ability to create a situation where people have more power over the world in which they live. In that meaning contemporary art has a political function and it thus means to collect people together and create a platform of communication. After creating the art work database we invited 25 schools from six different European countries to share and develop this platform with us further.

## **Dialogues in ArctiChildren InNet and creative connections quad blogs**

Dialogue emphasizes equality and interaction and learning as a process (Hiltunen 2009, 54–57, 70–73). The Creative Connections and ArctiChildren InNet produced experiences of the use of online learning environment and digital materials. The conclusions and recommendations of these experiences and feedback can be applied generally to the use of online environments in schools. The projects also developed models how to use methods of art education to explore cultural identities with pupils.

Reported in case studies from the Creative Connections schools in six participating countries the database artworks promoted discussion and inspired projects to explore and express pupils’ identities. The pupils explored the

artworks' topics of language, minority status, dressing, food, family and sports from individual and national perspectives. In ArctiChildren InNet health education was approached with workshops, projects and presentations. Using multimodal learning methods and visual arts, pupils have planned activities and produced videos, posters, collages and comics.

In the Creative Connections pupils analysed the artworks through discussion, questioning and writing, but also by making their own versions and

imitations of the images. Using the same artworks in different countries and schools raised the question of how the same image can be seen and understood from different perspectives and cultural backgrounds. The blogging environment enabled sharing of these different interpretations. The topic has brought to defining, while being presented to others, also what being Finnish is and in multicultural groups the delicacy to draw an open-minded and broad conclusions through the commune things without pointing out the differences has been

The screenshot shows a blog post on the Creative Connections website. At the top, there are navigation links for 'Country', 'Theme', and 'Getting Started'. Below the navigation is the school's logo, which consists of a grid of colored squares (yellow, red, green, blue, white) and a blue cross, with the text 'Institut Torras i Bages, Muurolan Peruskoulu, Gortnor Abbey and Chenderit School'. The post title is 'My Europe', dated February 22, 2013, by author Muurolan. The main content is a vibrant drawing with a blue bird in the center, a grey wolf to the right, a brown bear to the left, and a white doll in the middle. Handwritten text in various colors is scattered around the drawing, including 'Hävi!', 'Gortnor', 'God used', 'Guar-togit', 'Coof', 'Hävi!', 'Gortnor', 'God used', 'Hävi!', 'Gortnor', 'God used', 'Hävi!', 'Gortnor', 'God used'. To the right of the drawing are sections for 'Translation' (with flags and an 'Edit Translation' link), a search bar, 'Recent Comments' (listing comments on 'Signes de bandes', 'Kate', 'Paris', 'XD lol :D', 'THE' art of the' Sport', and 'My Europe'), and '14 Responses'. The first response is from Muurolan on February 22, 2013, at 8:21 am, saying 'I can't believe how you can draw so good!'. The second response is from Chenderit on February 26, 2013, at 10:44 am, saying 'Great drawing: It makes me think of something out of a fairytale: lots of mystery and magic!'. The third response is from Muurolan on March 1, 2013, at 7:56 am, saying 'very nice 😊'. The fourth response is from Muurolan on April 19, 2013, at 7:59 am, saying 'This work is really good! You are a great artist. You have a clearly imagination and good ideas! What inspires you to create artwork?'.

Figure 2. A pupil's posting in Creative Connections blog.

needed: what is the everyday life here for our age, in this town or village and in this school.

The experience to be able to publish something on the web was raising enthusiasm especially with younger pupils. As an exception to the normal schoolwork, this emphasized the importance of the pupils' background, their experiences and the community that they are part of. Sense of community, belonging and identity have a supporting effect in the well-being.

Figure 2 presents an example of the blogging in Creative Connections (2015) -web environment. A drawing posted by a pupil and discussion the image has evoked with comments from other pupils and teachers. On the right side the small flags indicate the selection of the languages for the web-translator.

In the ArctiChildren InNet the common northern living environment created cultural connections, when there was no need to explain the life in the arctic area to others. One of the pupils commented that she has to deal with stereotypes when communicating with a native fellow from the south but in co-operation with another school student in the project there was the common shared experience of the everyday living in the North. Even though the others were from another country.

## Conclusions

In our article we have concentrated on the experiences of the use of online learning environment and digital contemporary artwork database. In the two projects the pupils have had an open

space to consider and practice the ways of expressing themselves, and they have also crossed and discussed the elements of cultural understanding and being understood. They have explored how to interpret images and how the others might interpret them from their cultural background. This was done by utilizing multimodality for example physical movement, nature, acting/theatre, and different expressions of art in learning.

In ArctiChildren InNet the aim was to improve the common challenges of the schoolchildren's physical, psychological, emotional, social and spiritual health and wellbeing, security and cultural identity through Information and Communication Technology (ICT) applications in the Barents Region. Based on our experiences, to express one's ideas and opinions and to communicate in an international context in a web environment can be seen as learning active citizenship skills and agency. It is a question of equal participation. The aim is to foster reflective thinking and dialogue and to support agency, the dimensions which are strongly connected to the pupils' self-esteem and wellbeing.

The Creative Connections web environment will be open for public in the end of 2014 and the models how to use contemporary art and methods of art education to promote pupils voice, agency and well-being, are easily accessible in others, like in the ArctiChildren InNet context. The national curriculum and the local curriculum development in the Barents area should recognize the possibilities the web environment will offer pupils from both cities and especially in the rural areas by using an online gallery and having dialogue through contemporary art.

Implications for school health: the use of an online environment promotes pupils well-being by offering a space

- *with cross curricular opportunities and multimodal learning materials*
- *between informal and formal learning*
- *to express themselves through different art modes*
- *for reflective thinking and dialogue*
- *for equal participation and agency,*

the dimensions which are strongly connected to the pupils self-esteem and wellbeing.

The results of the two projects show clear benefits both in national and local stages to the use of the web environment for learners in the context of northern or other sparsely populated areas with long distances. Based on our experiences, it is recommended to include cross-curricular opportunities whereby contemporary art is used to explore ways of increasing transnational understanding, with a focus on enhancing understanding related and diverse perspectives of active citizenship and well-being. **Art evokes!**

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# eHealth Material in the ArctiChildren Web Pages

In this article we will introduce different internet channels used in the dissemination of the ArctiChildren InNet project results and activities. We will give an overlook on the contents of our main web pages and highlight how the contents produced in the project can be further benefitted from by different parties involved with schoolchildren and health issues in schools.

## Various web pages in the project for different purposes

We have altogether four websites that we have been using in the ArctiChildren InNet project: 1) [some.lappia.fi/blogs/acthree/](http://some.lappia.fi/blogs/acthree/), 2) [www.arctichildren.fi](http://www.arctichildren.fi), 3) [www.arctichildren.com](http://www.arctichildren.com) and 4) [www.narfu.ru/arctichildren](http://www.narfu.ru/arctichildren).

### Blog for internal project use

We first decided to open a blog (<http://some.lappia.fi/blogs/acthree/>) for our project's internal use but also to inform partners and the Kolarctic ENPI CBC

financier about the activities done in the project. The blog was opened in April 2012. When we opened the [www.arctichildren.com](http://www.arctichildren.com) website in March 2013, we started to post most of the news there and the blog was less used.

### Finnish web page

The [www.arctichildren.fi](http://www.arctichildren.fi) website that was developed in the previous ArctiChildren InNet project funded by the European Social Funding was mainly used within the activities done in Finnish. We used the website's forum to have delayed online dialogue with the pilot school pupils. Some of the topics were for example nutrition, bullying and loneliness, sexual health and online safety. The Finnish website was also used to produce multimedia health material together with the pupils of the pilot schools and the students of the Lapland University of Applied Sciences (Lapland UAS), for example about sexual education, good sleeping habits, and snuff use using iPads in material production.

## English web page

Some of the activities were done in English at the [www.arctichildren.com](http://www.arctichildren.com) website and the material produced was either in English, Swedish or Russian. Student of the Lapland UAS conducted for example surveys to the Russian pilot schools about the needs for online physiotherapy and carried out delayed online dialogue with the pupils for example about physical activity and health. The students of the Lapland UAS and the University of Lapland also implemented workshops and thesis both at the Finnish and the Russian pilot schools. Some of the Finnish material has been translated also in Russian.

## Russian web page

The Russian version of the website, [www.narfu.ru/arctichildren/](http://www.narfu.ru/arctichildren/), was developed by the Northern (Arctic) Federal University. The Russian website is slightly different from the Finnish and the English versions. There we have for example video lectures from experts, presentations and scientific articles about children's health and wellbeing. It is mainly directed to teachers and experts working with children.

## Health related material for the core target groups

We have produced lots of materials to the Finnish, English and Russian websites. Some of the materials have been produced together with the pilot school pupils and

most of them have involved thesis work of the university students. The main aim has been to provide versatile material primarily for the school communities in the Arctic to deal with health and welfare related issues in a new form and with new resources.

The ArctiChildren website material is intended for all and it is free to access and use. At best, it works in class rooms as a trigger for discussions and ideas concerning health issues. Of course pupils and other target groups are free to explore the produced content also independently in their free time.

In the Finnish site the materials are divided into four categories: pupils, teachers, parents and school staff (see *Materiaalit 2014*). All of the material content is divided in a way that all categories include only those materials that are the best suited for the target group. Some of the materials can be directed to all of the target groups, some can be suitable for only one target group. In this categorization, our main aim was to provide an easy way for each target group to access the material that they can utilize in teaching, welfare work and everyday life.

## Materials for the pupils

The pupils' section (*Materiaalit – Oppilas 2014*) is done in a flash format. The users can move in a school hallway and explore different materials by opening for example doors and windows. As the target group is pupils, we wanted to introduce the materials in an innovative way that highlights the experience of discovering information from the animated platform. At the same time, the

pupils can find important views and facts concerning health issues.

The materials consist of pictures, PowerPoint presentations and videos and the topics range from nutrition to bullying and from sexuality to internet safety. These materials have mainly been produced by the pupils of the ArctiChildren InNet project pilot schools. On top of this, there are several videos that have been produced by the students of the Lapland UAS. These videos are meant to serve as starting points for health related conversations between for example the pupils and their teachers.

### **Materials for the teachers**

The teachers' materials (Materiaalit – Opettajat 2014) consist of ten different categories 1) Northern identity, 2) self-esteem and relationships, 3) bullying, 4) exercise, 5) mood and coping, 6) internet and media use, 7) intoxicants, 8) nutrition, 9) sexuality and 10) research papers and theses.

Northern identity is a special section produced by Elina Härkönen (teacher at the University of Lapland) and it is an art educational material for teachers. As art produces experiences and meanings by tuning our senses and enriching experiences of the world, art and culture are connected to good health, work ability and good life experiences (Northern identity 2014).

Art educational material features visual arts assignments and tasks suitable for secondary and high school students to be done independently or in groups. The purpose of the tasks is to increase the students' well-being by emphasizing the

interactions between the environment and the individual and the importance of culture to one's identity and well being. Workshops and the final products are made by the students and staff from the Faculty of Arts in the University of Lapland. (Northern identity 2014.)

The Northern identity section has five topics to choose from: snow and ice, me and us, polar night and light, spring in the town, the woods and autumn colors. All the topics have instructions on how to for example make snow sculptures, videos or quick environmental art works. (Pohjoinen identiteetti 2014.) The Northern identity material has also been translated into English and can be found from the materials section in the website [www.arctichildren.com](http://www.arctichildren.com) (Northern identity 2014).

### **Materials for parents and school staff**

The parents' (Materiaalit – Vanhemmat 2014) and school staff's (Materiaalit – Oppilashuolto 2014) materials consist of

the same categories as the teachers' except the Northern identity part. The materials consists of pictures, PowerPoint presentations and videos.

For parents these materials can provide perspectives on what kind of health related issues are current in their children's lives. As most of the materials are made by pupils themselves, they can give a unique view on the most discussed health matters among youth of today.

For the school staff, on the other hand, the provided material can be used as a support tool while discussing and dealing with pupils' health and welfare issues in everyday school life. The materials can be used as a basis for conversations or even a source for finding information – produced from pupils to pupils.

### **Cross-border experiences of shared learning**

In September 2014 ArctiChildren InNet organized a three-day workshop called "How do I Produce Digital Material with My Pupils? – Multimedia Material, Arts and Storytelling into Learning" in Lapland UAS's Tornio campus, Finland. There pupils and teachers from the pilot schools worked together in three different workshops with the help from the teachers and students from the Lapland University and the Lapland University of Applied Sciences and produced eight

short films, which are published in our website. (See Multimedia methods for dealing with health matters in secondary schools 2014.)

In addition, a lot of useful material has been produced by the students of the Lapland UAS and the University of Lapland as a part of their thesis work. The cooperation between the students and the target group, pupils, has been strong and ongoing. The pupils' point of view has been taken into consideration and seen as a valuable asset.

### Examples of the thesis products

A Guide for Nature Exercises is one of the products made for the ArctiChildren website within a thesis work. The guide offers tips for different sports and exercises that can be done in the nature either alone or in a group. The aim of the guide is to encourage and support pupils to exercise in the nature and find the benefits of nature sports as well as find the opportunities that the Rovaniemi area offers. The material was produced by the students Heidi Pauna, Päivyt Jortikka and Reija Saarenpää. (Luontoliikuntaopas 2014.)

The thesis called "Sexual Health Education for the 8th Graders of Rantavitikka Secondary School" was Hannele Hirvaskoski, Tarja Karjalainen and Erika Mäkikyrö's (2014) input for the ArctiChildren InNet project. They developed the ArctiChildren website by producing material with the pupils and for the pupils. (Hirvaskoski, Karjalainen & Mäkikyrö 2014, Abstract.) As a part of their thesis, students made a presentation where a young boy and a girl, Henry and Krista, offer information about sexual

health for the youth (see Klikkaa Henryä ja Kristaa! 2014).

Lapland University of Applied Sciences' students Karoliina Pylkkönen, Anni Kotilainen and Johanna Keränen are writing a thesis concerning snuff and its health risks. They organized a workshop for the Rantavitikka school 6th graders in which the pupils created comics with an iPad application. The comics and other information about the workshop can be found from the ArctiChildren website. (Nuuska puhutti Rantavitikan koululla 2014.)

Minna Korjonen and Alma Palojärvi (2014), students of the Lapland UAS, conducted a thesis called "Posture And Ergonomic Guidance for Students by Using An Interactive Method – A Posture Guidebook". The aim of this thesis was to use interactive methods as a means to collect information about students' thoughts regarding posture and ergonomics and to put together those thoughts in an online posture guidebook (Korjonen & Palojärvi 2014, Abstract). The Posture Guidebook was published in the ArctiChildren InNet project website in the beginning of 2015 (see Ryhtiopas yli rajojen 2015).

### Online guidance forums

There are also online guidance forums both in Finnish and English in the ArctiChildren websites. Their main function of the forums has been to serve as a learning environment and meeting point for the pupils and the university students in Finland. As the pupils get answers to health issues that concern them, the students learn how to deal with

sensitive matters with the youth, and how to do it online.

The forum has this far worked as a platform for delayed guidance; pupils leave their questions when they have time and students answer the questions during their school work, within one week. Some topics have been for example internet security, bullying and loneliness, nutrition and intoxicants. (Keskustelut 2015.) These existing conversations can be utilized in the class rooms or in the parent-child-discussions as a starting point or background information for a health dialogue.

We also had online guidance between Finnish and Russian pilot schools where our students from Lapland UAS answered questions sent to them from the Russian pilot schools. Topics included health promotion and posture, neck and shoulder problems, ergonomics of the workspace, self-care of the body (e.g. stretching, relaxation, sleeping habits). (Forum 2015.)

## Dissemination and social media


We used social media together with our websites to inform about ongoing activities and share what we have done in the project. We had a Facebook page, YouTube channel and Google Drive for sharing for example presentations. We also used SlideShare to share PowerPoint presentations, but the service turned to be too unreliable and we had to stop using it.

It has been a learning process for all of us within the ArctiChildren InNet

project to develop new eHealth approaches. Creating and updating a website is a time consuming job for anyone and keeping up with the latest trends in online health promotion is challenging to say the least. Making our students and the pilot school pupils work together and create something new has been an exciting and empowering journey. We learned from each other and the work continues even after the project in some form or another.

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# ChatSimulation – A Learning Environment for Practicing Online Guidance

ChatSimulation enables the students of social services and health care, also working life representatives, to practice online guidance in real time in a secure learning environment.

ChatSimulation was developed in the ArctiChildren InNet project at the Lapland University of Applied Sciences. The requirement for this service arose from the needs of both students and teachers. Soon after the project started we realized that before our students go out in to the real world and work via online guidance services with people with real issues and problems, we need them to practice online guidance in a safe environment. ChatSimulation enables students to study online guidance ethical,

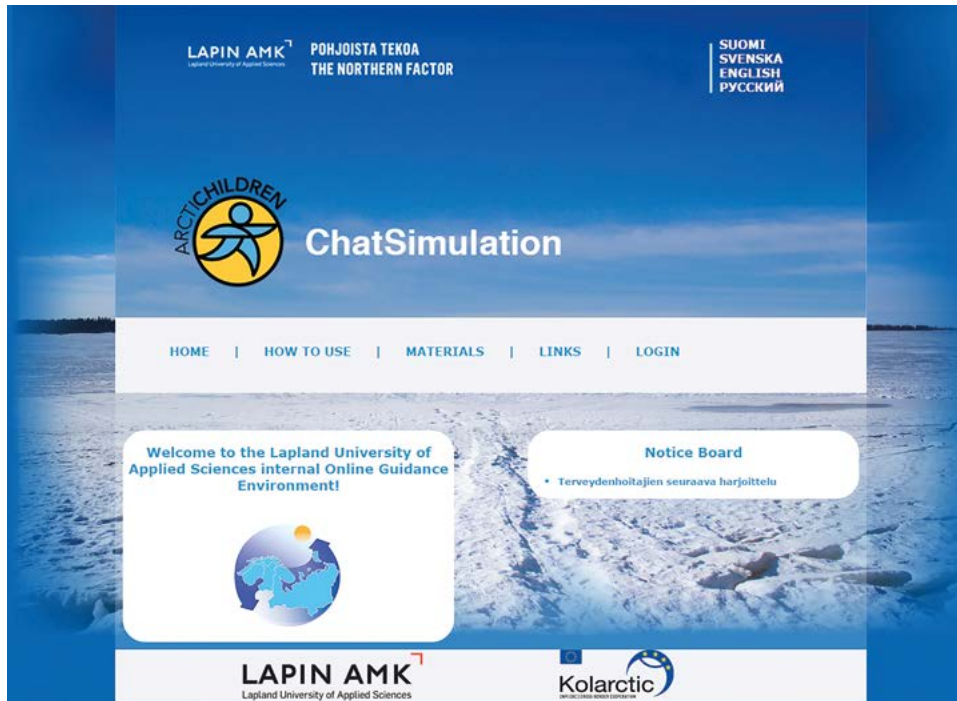
substantive, communicational and information security related matters.

## Dialogue through written text

Ohtonen (2011) mentions, pointing at Kääriäinen (2005, 162), how an effect of a written message happens at the very moment when the message is read. The reader encounters his/her interaction partner in the text. The receiver enters the world of the message and “discusses” with the writer of the message. A written text remains to represent the encounter between the customer and the worker. (Ohtonen 2011, 28.)

Language and textuality are in the center of the online interaction in a worker. We can talk about “personal online writing language” which is based on a short and pithy text. Social hintlessness, in turn, is a point of view, according to which online communication allows conveying less social hints, such as non-verbal communication. Hints can be related to

**View a ChatSimulation demonstration video:**



**Figure 1.** Landing page of the ChatSimulation.

an individual's social status (age, gender, clothing) or to an interactive situation (facial expressions, gestures, movements). This means that hintlessness makes interpretation difficult and that interpretation barely based on a text can be made in different ways, which in turn can cause misunderstandings. (Matikainen 2003, 64–66.)

However, every online worker works in a personal way in the internet, too, although the internet changes the individual's way to express his/her personality. Ethicalness and information security issues as well as maintenance and development of information technology skills are essential skills required from an online worker, and which have to be mastered (Matikainen 2003, 64–66).

Among other things all these arguments above were as a base when the ArctiChildren InNet project team started to think over how to make it possible for the students to practice all these exacting skills already during their studies.

### Development process of ChatSimulation

Deploying third party software involves accepting certain integration risks. We therefore decided to develop our own platform, which we could control and further develop as needed. The software development of the ChatSimulation started in the spring 2013. The first version was written by students working in the pLAB, which is a Software

Engineering Laboratory at the Lapland University of Applied Sciences. Three students were responsible for the coding and the visual lay out. The project team worked together with the students to apply all the necessary features. The first extensive revision was made in the summer of 2014 which included a new user interface layout for the home page, designed by one of our students in Tornio campus. Additional feature requests were added and superfluous features removed.

## Use of ChatSimulation

Teachers at the Social Services, Health and Sports unit operate as the administrators i.e. online guidance experts. The online guidance – dialogue through written text - between the customer and the expert takes place in an authentic, real time chat environment. The teachers formulate cases of a variety of customer situations, which are then used in the real time training session. Students may also plan cases before they start the conversation, for example health promotion cases where a mother is asking advice how to take care of her febrile baby or a teenager is looking for advice about sexual health or a school-aged child is contacting a school nurse asking about sleeping problems.

During the online guidance, the students practice both the expert's and the customer's role. Teachers can follow the conversations and also give instructions to the students. Altogether 30 students, 15 pairs can practice online guidance at the same time. Students can train in a classroom or they can do it remotely for example from their home.

After the students have practiced both roles, they reflect their experiences either in their online conversation rooms, face-to-face in a classroom or in a Moodle learning environment.

The conversations are automatically saved for later use. The teacher can also save the conversations to his/her own computer and print them out, and discuss later on with the students for example about substantive, ethical and communicational issues of the conversations. Teachers can use the ChatSimulation also to grade studies.

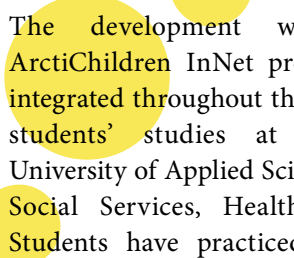
ChatSimulation has been used with physiotherapy, nurse and public health nurse students. The students' feedback has been used to further develop the ChatSimulation. Their ideas and suggestions have been very valuable in the process of making the user experiment as easy and effortless as possible. A special thanks to you students – we made it together!

At the Social Services, Health and Sports unit, Lapland University of Applied Sciences ChatSimulation is used as a learning environment for practicing online guidance, and learning paths of online guidance through all studies, is under development. ChatSimulation has been translated in Swedish, English and Russian, and hopefully it will be also used in future EU projects dealing with development work of new innovative online guidance applications and practices.

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# New Learning Approaches for eHealth Promotion at Lapland University of Applied Sciences



The development work in the ArctiChildren InNet project has been integrated throughout the project to the students' studies at the Lapland University of Applied Sciences School of Social Services, Health and Sports. Students have practiced for example delayed online guidance in health promotion, real time guidance in the ChatSimulation environment, produced multisensual material together with pupils of the pilot schools to the project's website and done numerous theses in different health themes.

## Student involvement in the project

In collaboration projects between the working life and educational institutes it is important to produce researched information. In the Universities of Applied Sciences this creates a great opportunity by connecting thesis work (15 ECTS credits in a Bachelor degree and 30 ECTS credits in the Master's degree programme). For example in the

ArctiChildren InNet project the research information has been produced in creating eHealth material together with the pilot school pupils and the development processes of virtual online material. The Polytechnic Decree (VNa 423/2005) stipulates that the purpose of the thesis is to develop and strengthen the student's preparedness to apply professional studies knowledge and know-how in practical expert tasks. The theses work as bridge between studies and working life and it improves both communicational and cooperation skills. At the same time it facilitates the shift from studies to becoming a professional employee in different work communities. The students that have worked with the ArctiChildren InNet project have gained versatile information and practical experience about schoolchildren's eHealth promotion.

For example nursing and public health nursing students have with distinction produced their theses about virtual data sets by creating material together with the pilot school pupils. A few of them can be mentioned here, also in this publication.

Tiina Saunavaara and Pauliina Pikkarainen produced a short info package about the effects of polar night on mood and also some video material to the project's website. They also carried out delayed online guidance on the website's forum with the pilot school pupils and got experience about studying online nursing guidance.

Anne Seppälä and Maiju Saarinen were inspired by youth toxin usage. They wanted to discuss these matters with the pupils in the forum via delayed online guidance.

Johanna Sieppi and Elina Takkinen were interested in youth nutritional guidance. They also wanted to learn how to guide young people online by trying delayed online guidance with the pupils from Ivalo upper comprehensive school pupils in the project's website.

Online safety is an ongoing debate. This subject got a few public health nurse students excited. They had delayed online guidance with pupils from the 9th grade of the Rantavitikka secondary school in Rovaniemi.

Pupils (8th grade) from Sallatunturi school worked together with public health nurse students Emilia Karjalainen and Heidi Kettunen to produce posters about good night sleep. This proved to be a good way for the students to learn about health promotion techniques with pupils. The posters can be found on the ArctiChildren website.

Public health nurse students Karoliina Pylkkönen, Anni Kotilainen and Johanna Keränen talked about the usage of snuff with the pupils of the Rantavitikka secondary school in Rovaniemi. The pupils produced material using iPads and the end results can be found on the

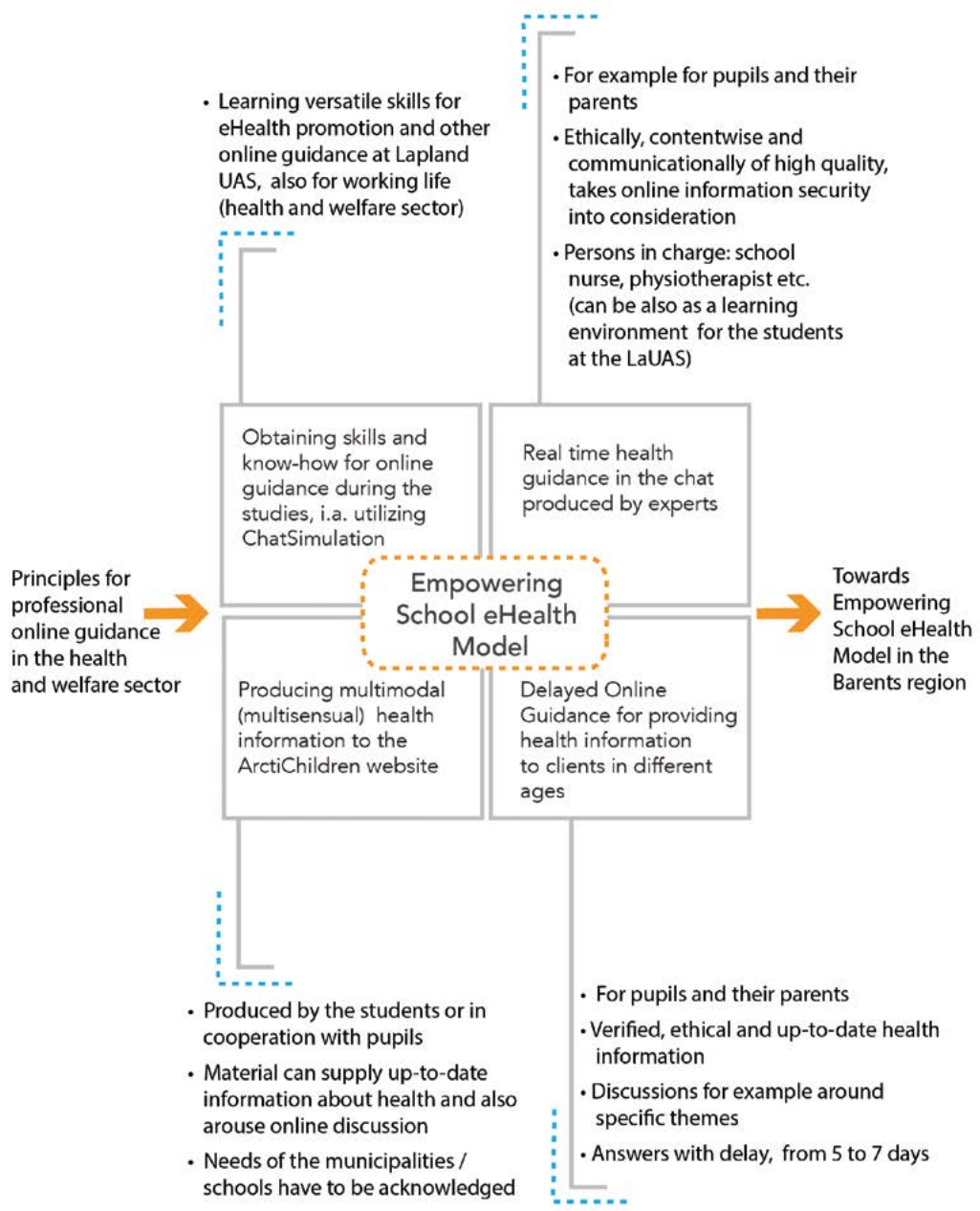
ArctiChildren website. Their article can be found later in this publication.

Understanding sexuality is important in the different developmental phases of the pupils. Public health nurse student Hannele Hirvaskoski and nursing students Tarja Karjalainen and Erika Mäkikyrö wanted to do their theses based on this theme. They produced a new kind of sexual health material "Click Henry and Krista!" to the project's website. The material makes it possible to become familiar with sexuality in a safe way. This subject is also featured later on in this publication in the Practical Experiences chapter.

## **From project experiences to the learning model for eHealth promotion**

After different learning experiences a learning model for online health promotion was outlined. In the preliminary model the new different practices of eHealth promotion are described in the way the students implemented them as part of the project. Once the model was clarified, it also started to structure in a time wise manner thus creating understanding how the students from the School of Social Services, Health and Sports could learn new practices of eHealth promotion in their studies. The model also describes a new online knowledge competence in nursing that is needed in the future practices of health promotion. The construction of the model has influenced both the professionals work with the youth and also the teachers guiding the students.

# Online health promotion at the Social Services, Health and Sports Unit at the Lapland University of Applied Sciences



**Figure 1.** Learning Model for Online Health Promotion.

Learning Model for Online Health Promotion (Figure 1) includes the following parts:

- 1** Obtaining skills and know-how for online guidance during the studies, i.e. utilizing ChatSimulation
  - learning versatile skills for eHealth promotion and other online guidance at Lapland UAS, also for working life (health and welfare sector)
- 2** Producing multimodal (multi-sensual) health information to the [www.arctichildren.fi](http://www.arctichildren.fi) website
  - produced by the students or in cooperation with pupils
  - material can supply up-to-date information about health and also arouse online discussion
  - needs of the municipalities / schools in material producing have to be acknowledged
- 3** Delayed online guidance for providing health information to clients in different ages
  - for pupils and their parents
  - verified, ethical and up-to-date health information
  - discussions for example around specific themes
  - answers to the website with delay, from 5 to 7days
- 4** Real time health guidance in the chat always produced by experts
  - for example for pupils and their parents
  - ethically, contentwise and communicationally of high quality, takes online

information security into consideration

- persons in charge: school nurse, physiotherapist etc.
- can also be as a learning environment for the students at the Lapland UAS

After the learning model for online health promotion was developed, the ArctiChildren InNet project team with teachers at the Social Services, Health and Sports were inspired to develop the online guidance studies further on. The goal has been to develop guidelines for the curriculum in which stages the students study different online guidance skills. New practices of online guidance have been implemented after the initial testing. The development work of the ArctiChildren InNet project has been integrated into the education of the Lapland University of Applied Sciences School of Social Services, Health and Sports in an excellent manner. It is a pleasure to continue further on development work of eHealth promotion applications and practices.



# **CHAPTER IV: PRACTICAL EXPERIENCES**





## With Gratitude to the Schoolchildren



My participation in ArctiChildren has definitely enriched my life as a teacher and teacher trainer! Since I have been working at the Luleå University of Technology for the last four years, the distance between me and young schoolchildren has, unfortunately, increased. However, at the Teacher Educational Programme the students and I have conversations and seminars on a daily bases where we discuss and learn how teachers can design teaching and how we can develop and evaluate education in elementary schools. And honestly, we all have the children's learning and wellbeing as important and necessary elements when we approach all different issues. This child perspective (that I call child-friendly perspective), where we all have the best for the schoolchildren in mind, is valuable. But - something is always missing; The voices of the schoolchildren themselves! The teacher's knowledge about what children in general need in order to develop their skills and abilities in school is not enough. I'm quite sure that we all believe that children of all ages must be regarded as subjects of their own agendas and perceptions of what is important and meaningful in their lives, including

school. How can this statement then be a natural part of, and be included in teaching and education in our elementary schools? I think that in order to achieve a real exchange of views between adults and children, we need to establish understanding by meeting and listening to each other. We have to give voice and space to schoolchildren as co-researchers, showing how the partnership between the children and the adults is favorable (Kostenius 2013). By approaching children's lives the way they experience these we have to do research with, not on schoolchildren!

My study in the ArctiChildren InNet project has verified all the expectations I had before, and made me even more certain of how capable and creative children are if we let them! By working with different digital tools, the schoolchildren were able to try out and develop different modes of expression and feelings. The scientific term for this is methodological creativity; in the classroom we call them multimodalities. The frame for the study, the schoolchildren's assignment, was worded: Tell each other about a time when you felt well and create a multimodal presentation together in the group to tell the rest of us

your experience of feeling good. Read more about this in chapter Empowering child perspective in this publication. The pupils were able to share their experiences, thoughts and feelings regarding wellbeing in school. This is not a specific school subject, not even a part of a school subject, but when realizing the importance of the content in the schoolchildren's presentations and the result of their analysis – this should be discussed in every classroom!

By participation in the ArctiChildren project I had the opportunity to research with schoolchildren, having them as partners, where the children's perspective, participation and voices were the starting point for all activities. I wanted to work

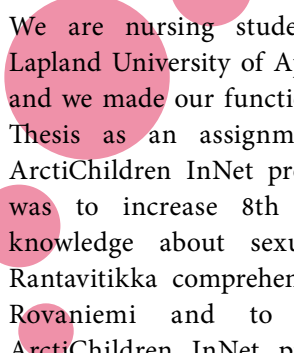
with empowerment-oriented health promotion and therefore we adopted an empowered child perspective agreeing that children are trustworthy and competent (Ghaye 2008). Through the whole process (group assignment – presentations and feedback – thematising – analysis and pedagogical implications) the schoolchildren and I worked as a team, researcher together with the co-researchers. I could not have done this without the competent and trustworthy schoolchildren and therefore, to all the children in the class I would like to say: Thank you so much for letting me into your classroom. I have learned more than I could have ever imagined, and I miss you all!



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# Sexual Health Education for Rantavitikka Comprehensive School 8th Graders



We are nursing students from the Lapland University of Applied Sciences and we made our functional Bachelor's Thesis as an assignment from the ArctiChildren InNet project. The aim was to increase 8th grade pupils' knowledge about sexual health at Rantavitikka comprehensive school in Rovaniemi and to develop the ArctiChildren InNet project internet pages about children's and adolescents' health promotion. The theme of our Bachelor's Thesis was related to a study module in health education for Rantavitikka comprehensive school 8B grade pupils and it dealt with sexual health education.

## Background of sexual health education

Sexuality belongs to the development of a human being during the whole course of a person's life. Sexual personality develops according to how human basic needs become satisfied. An essential part of sexuality is a desire for intimacy,

expression of feelings, feeling of pleasure, receiving/giving tenderness and love. (Rinkinen 2012, 34–35.)

The aim of the sexual health education to 8th graders in the city of Rovaniemi is to support young person's sexual health and support him/her and his/her close relatives in relationships. In addition, the aim is to teach behavior that is consistent with values and norms, and to give information about sexually transmitted diseases and their prevention, and pregnancy. Furthermore, the aim is to support a young individual to take responsibility of him/herself and take care of their own health, as well as to inform about diseases caused by an unhealthy lifestyle. (Rovaniemi 2011, 194.)

We wanted to give our contribution to promoting sexual health and making a Bachelor's Thesis with young people, as in this way we can affect young individuals' attitudes, strengthen their self-esteem and give a positive and a realistic picture for them about sexual growth and development.

**Figure 1.** Virtual characters Krista and Henry invites pupils to study themes that are related to sexual health.

## **Pupil-oriented development and research work**

We carried out our Bachelor's Thesis as pupil-oriented as possible, by listening and respecting the needs and aims of the pupils, and by bringing material they produced to be used in the ArctiChildren InNet –project.

Rantavitikka comprehensive school 8B grade had 22 pupils in total. During the health education lessons the pupils made posters in teams that dealt with sexual health. The posters were made under our guidance. As the posters were completed we organized an informative exhibition walk for all 8th-graders in the school. During the exhibition walk we gave information about contraception and gave condoms for the pupils. After finishing the walk the pupils were allowed to choose the two most interesting themes from the themes of the posters, of which we gave them an informative lesson in December 2013.

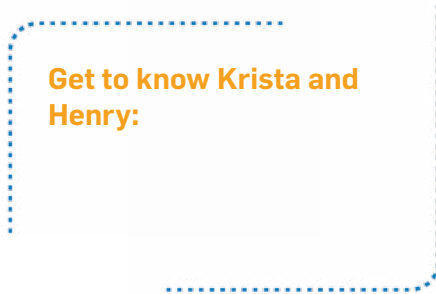
In addition to the posters, the pupils sent questions related to sexual health to

the ArctiChildren InNet project discussion forum. We replied to the questions within a few days. We received a lot of questions, and part of them concerned the same topics. In the end we replied to 26 questions written by the pupils. The answers were published on the internet pages of ArctiChildren InNet project after a teacher had checked them.

We used several guidance methods when implementing the functional part of our thesis. According to our experience making the posters and online guidance were the most important ones from point of view of the pupils' learning. Modern information technology enables production of material in multiple ways, when www-pages of projects can be made structurally and functionally more interesting. Our opinion is that the ArctiChildren InNet project should inform young people about its pages, in a manner in which an adolescent would easily find the necessary information for his/her needs.

In May 2014 we made material for the ArctiChildren InNet project www-pages

(see Figure 1). We ended up using the posters the pupils had made and we created virtual characters, Krista and Henry (2014).



By clicking the characters it is possible to study themes that are related to sexual health. We added links to different quizzes, the topics of which were related to sexual health and which we think are interesting to young people. Our work was published on the ArctiChildren InNet project www-pages in the beginning of June 2014.

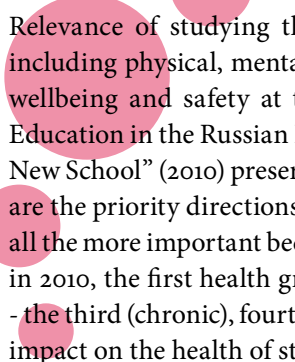
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# Significance of Nutrition for Health and Development of Schoolchildren



Relevance of studying the problem of improving schoolchildren's general health, including physical, mental and emotional state is determined by the value of general wellbeing and safety at today's schools. In accordance with the Federal Law "On Education in the Russian Federation" (2012) and the national education initiative "Our New School" (2010) preservation of the health of schoolchildren and their development are the priority directions of the state policy of Russia in the field of education. This is all the more important because, according to official Russian Ministry of Health (2014), in 2010, the first health group had 20.7% of schoolchildren, the second - 59.2%, 18.3% - the third (chronic), fourth and fifth (disabling disease) - 1.8% of the children. Negative impact on the health of students has increased in the Far North.

## **Program "Health" as a resource for promoting a healthy way of life for schoolchildren**

Based on personal experience gained through participation in the ArctiChildren InNet project our school, Murmansk Gymnasia no 5, developed a program "Health". This program includes a promotion and organization of a healthy lifestyle, bad habits prevention, work between family and school, the correct physical activity regime, organization of annual medical examination at educational institutions,

introducing an additional academic hour of physical training, following sanitary standards, and providing hot meals.

Introducing new school meals and the use of modern equipment allows to provide meal to 90% of schoolchildren in accordance with today's requirements at a minimum cost. Educational process at schools means that the schoolchildren spend 5-6 hours a day at school, so it is a priority task to provide them with adequate nutrition in addition to educational objectives.

In our school we created and developed a system of a healthy lifestyle promotion among schoolchildren, enhancing schoolchildren and teachers' knowledge

of healthy diet and promoting the attractiveness of a balanced diet. Dissemination of experience in organizing and conducting project research contributes to making students more interested in these issues and conscious of practical value of their work. School teachers actively encourage schoolchildren to take part in research work, using project-based learning for developing their critical thinking, independent knowledge, design skills, skills of free orienting in information environment, and data analysis.

## **Projects of Gymnasia #5 devoted to healthy nutrition**

Our gymnasium is an active participant in the program of the Ministry of Education and Science of the Russian Federation "A Conversation about Good Nutrition", in the regional children's art competition "Merry lesson about what is tasty and healthy", and in the Murmansk conference "Influence of nutrition on human health."

Since 2011, the students of the 10th profile "Rosneft-form" under the direction of I. G. Bolshakova, chemistry teacher, have begun a research project on basic food products.

The theme of the project "Nutrition ecology" was not chosen by chance: it promotes ecological culture among schoolchildren, improves attitudes to their health as a special value, and it is connected with the possibility of mastering universal (meta-) knowledge, the ability to apply them in different situations. For this purpose our school constantly updates its material and

technical facilities. The school purchases the necessary research reagents and the chemical glassware, a digital laboratory called the "Archimedes". During the project, the students conducted a study of the quality of bread, milk and ice cream using methods of chemical analysis. Victoria Shukina conducted an analysis of tea under the title "Vitamin P in tea is the key to healthy blood vessels."

Research done by Alexandra Kiseleva and Maria Lebedeva "Bread for the benefit and harm" took the 1st place in the Murmansk conference.

The aim of the project of Alexandra Kiseleva and Maria Lebedeva "Bread for the benefit and harm" was to reveal the presence of acids in various types of bread and bakery products. Students hypothesized that if the bread causes heartburn, it is composed of acid. They identified the object of study - bread and bakery products, and the subject of study - acidity of bread and bakery products. At the beginning of the project the students conducted a public opinion poll on their research among workers and students of the Gymnasium #5. They asked the questions "Have you tried to eat leavened bread?" and "Do you ever experience negative symptoms (heartburn, heaviness in the stomach, digestive problems)?". From all the respondents 100% of students and 87% of the school employees regularly eat bakery products. 94% of the students and 75% of the employees admitted that they sometimes experienced negative symptoms such as heartburn, heaviness in the stomach, and digestive problems, especially when eating black bread.

The next stage was a theoretical study of components (water, flour, yeast, fats, salt, sugar, food additives) and chemical components (fats, proteins,

carbohydrates, starch, dietary fiber, minerals, vitamins) of bread, as well as the technology of its preparation according to literature and internet sources. Each project contained an experimental part of the refinement of methods, sample analysis, comparative analysis of the samples' acidity with the standards of the State Standard for different kinds of bread and bakery products.

In the course of the study various samples of bread, which were sold in the Murmansk shops, and were the most popular products, were acquired. Research results have led to the following conclusions: despite the fact that bread is very useful, it is necessary to limit the use of rye bread for people suffering from acidity of the stomach i.e.gastritis. It would be good if the manufacturers warned about the consequences of ingestion of high acid content products on the packaging of the product. Pupils developed a memo "Bread is the head for everything" which can be useful when developing a healthy diet.

Thus, using available techniques, the students were able to explore the quality of the bread and they acquired practical experience in determining its qualitative indicators.

Implementation of this research project allowed the students to shape their learning and informational



competence, develop an interest in creative, experimental research, which is very useful in further studies at universities.

### **Forms of work with schoolchildren on healthy nutrition**

Positive experiences from Irina Bolshakova's work with creative students made other teachers interested. Romanova Natalia Petrovna, a primary school teacher, has worked with Demkov Artyom, a 4th form pupil, who made a qualitative research of honey.

Every year our school organizes research and practice conferences. In the "Science" section the schoolchildren present their research, which shows that the quality of food is directly related to human health and immunity.

Class teachers carried out extra-curricular educational activities to contribute to the schoolchildren's food culture and their responsibility for their own health. Thematic class hours such as the following are held at our gymnasium: "My friend is a vitamin", "Myths and truths about healthy eating", "The tree of health", "Secrets of a healthy diet", "Peculiarities of national cuisine," "Secrets of the tea ceremony" etc .

Our teachers pay attention to nutrition problems in their courses of academic subjects such as chemistry, biology, technology, the world, and life safety.

In the city of Murmansk a system of school catering was created and developed. This system allows the schoolchildren to be provided with full hot breakfasts and lunches that meet the requirements of sanitary regulations. Parents have the opportunity to pay for meals for children using bank cards. This allows you to control what and when your child eats. For schoolchildren of unprotected social categories meals are provided free of charge. In our school we promote school nutrition. We annually hold days of "School Canteen Open Doors," we discuss the menu and the quality of food at parents meetings, and update the web pages on the gymnasium website.

Participation in the ArctiChildren InNet project aimed at developing a crossborder model of eHealth makes it possible for students from different countries to consider and discuss in an

online community about their experience in forming a new approach to health, well-being, security and cultural identity in the Barents region through ICT technologies.

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# Of Friendship – Workshops in Murmansk

Bachelor of Social Services students from Lapland University of Applied Sciences took part in the ArctiChildren InNet project in order to organize workshops in Murmansk, Russia and in Rovaniemi, Finland as a part of a larger health promotion theme. The students organized functional workshops in two schools, Murmansk school No 5 and Rantavitikka secondary school in Rovaniemi. The themes were friendship and social relationships. Preparation started in cooperation with other students from the Lapland UAS.

The workshops were designed to be versatile and participatory in order to make the children work together and interact with each other. Students worked either in pairs or in small groups so that no one would feel as an outsider or rejected. The games in the workshops included games that activated the children to interact, discuss, move and play. After the introductions, the workshop started with a blind folded game that aimed at the students to learn to trust each other. Two other games; a mirror game and aggression march worked as ice breakers between Lapland UAS students and the pupils. A learning café session worked as a more relaxed working method: intention was to get the

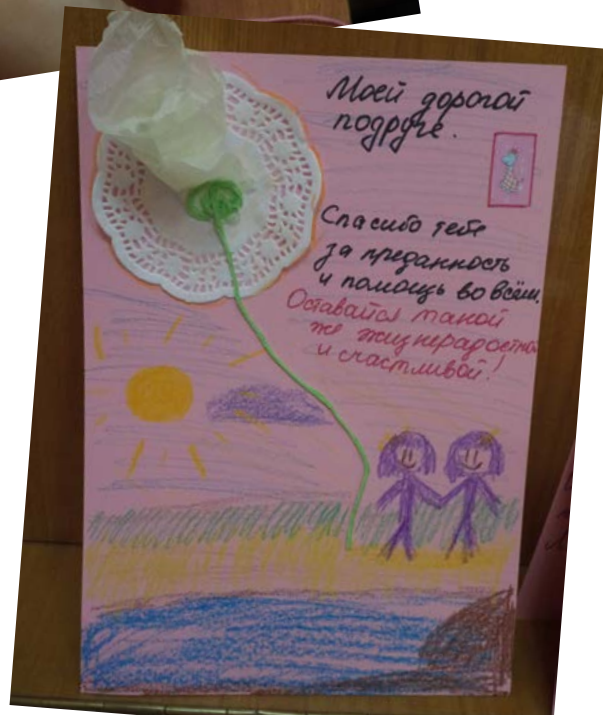
pupils to think together about what friendship means to them. They had table cloths with questions in Russian and different color markers. Pupils could work together, by themselves or share their thoughts about friendship with their friends in their native language or in English. Drawing was also allowed. Table cloths had the following questions:

1. What does friendship mean to me?
2. How do I get a friend?
3. What sort of friend I would like to have?
4. What can break a friendship?
5. What is a good friend like?
6. Where do I find a friend?
7. Who is my friend?
8. How do I take care of friendship?

All the pupils were genuinely excited. They wrote, drew and discussed about the themes about friendship. After they were done with their table they moved on to the next one, where they found new questions regarding friendship.

The meaning of the friendship cards was to make and write a card to a friend. The making of a friendship ribbon was intended to relax the pupils as they worked with their hands and also the ribbon symbolizes friendship. The pupils

gave feedback using emoticons and the feedback was positive. Students said that taking part in the project by organizing workshops has improved their professional, group guidance and customer service skills and also raised their awareness of different cultures.



### **MIRROR IMAGE GAME**

Pupils work in pairs and stand up facing each other. The other person moves slowly and the other tries to imitate those movements in a mirror image. The game starts with easy movements and gradually become more difficult. Instructors then urge the pupils to change roles after some time.

### **AGGRESSION MARCH**

The intention of this game is to work as a wake-up call for pupils at school. It also works as a way to disassemble anger through vocalizations and physical effort. The group is divided in half and the pupils stand in two rows holding arms. The purpose is for the two rows to march through each other and at the same time to scream and try to prevent the other row from passing through. At the end the pupils will discuss and reflect their feelings.

### **BLIND FOLDED GAME**

This game aims to increase trust between the group participants. The group is divided in half and the other half is blind folded for example by using a scarf. The pupil who is not blind folded guides the blind folded one by slightly touching him/her through small obstacles. Everyone gets to try both roles. At the end the pupils will discuss and reflect their feelings.

### **FRIENDSHIP CARDS**

Pupils get to craft a card and write down things they want to share with their friend. Materials and the manufacturing method are without restraint.

### **LEARNING CAFÉ**

This is a way to learn and brainstorm in a group. The aim is to discuss any given theme and share one's views to the group and also to find a common vision about the subject. The group is divided into smaller groups in tables where they circle around switching tables from time to time. Every table has a different theme. Tables have papers to write down thoughts about the given theme. At the end a summary is made from the results.

### **FRIENDSHIP RIBBON**

This part of the Native Americans' tradition and it is used as a remembrance for a friend. The ribbon is tied to a friend's wrist making a wish at the same time. The ribbon is worn as long as it wears off. According to a belief, the wish will come true when the ribbon is broken.



# Snuff Workshop Using iPads with 6th Graders at Rantavitikka School

According to the Finnish youth health and lifestyle survey 2011, young people's use of snuff and snuff experiments have increased over the years. Studies bring out that young people are not concerned about their own tobacco and drug usage patterns. Young people think that snuff is a healthier alternative than tobacco, and are therefore unaware of its many adverse health effects. Pressure from friends and trying the charm of the forbidden can lead up to regular snuff use.

Snuff as a subject is now current, because the use of snuff is a growing problem also here in Lapland. We wanted to give young people information about the harmfulness of snuff and to contribute to the prevention of the increase in the use of snuff.

## The implementation and results of the workshop

We cooperated with sixth graders at the Rantavitikka school in Rovaniemi, Finland. This school is one of the pilot

schools of the ArctiChildren InNet project. At the school they had also noticed that the use of snuff had increased.

Our goal was to learn to use information technology as a health promotion tool, as well as be involved in the development work of the ArctiChildren web page. We wanted to find new ways to promote students' learning, to motivate and help them internalize the information about snuff. We also wanted to develop our own knowledge and skills in health promotion and deepen the pupils' knowledge of the growing health threat for young people.

We made a snuff-themed workshop for pupils. In this workshop they learned about snuff. Our goal was that the pupils could be able to participate in the workshop actively and that they would be able to process what they had learned.

The first step of our workshop process was to meet the pupils and to motivate them by using a quiz and the learning café method. The next step was to plan and build a PowerPoint slide show, which contained important and current information about snuff. The presentation

included for example short films of the school policeman and dentist.

Snuff workshop at Rantavitikka school started with the PowerPoint slide show, and after the slide show the pupils were able to work in groups and make comics by Puppet Pals 2 software, which is an iPad 2 cartoon application. Ready-made comics were presented to the class, and the best cartoon was awarded. The comics are now on the ArctiChildren web page.



Our workshop received positive feedback from the teachers and the pupils. This work was seen as timely and necessary.



# National Cultural Traditions – In Formation of Psychosocial Health of Lovozero Pupils

The boarding school in Lovozero has always been a center for preserving and developing the national cultural components. The teachers have a primary roles in this process. Lovozero is an ancient Sami village and for more than 100 years representatives of different nationalities have lived there: the Sami, the Komi, the Nentsy, and the Russians. The teacher should take into consideration the uniqueness of national traditions in working in such conditions.

Inclusion of the learners into a national cultural environment is implemented in different ways:

- 1 There are several extra-curricular activities at school:
  - wisdom of the national applied arts are taught at the club “Masterok”
  - children can get acquainted with national outdoor games at the club “Sports games”
  - children study linguistic special features and culture at the clubs of the Sami and Komi
  - the club in Vocal Arts makes children acquainted with the arts of Komi and Saami
  - children make knitted handicrafts with the national coloration in the club “Knitting”





**2** Revival of the traditional get-together with a samovar with Komi and Sami food promotes acquaintance with specialities of the ancestors' culture.



**3** An interesting form of work is the carrying out of ritual festivals: in the winter – costumes, carols, participation in the Northern Festival, in the spring – meeting Maslenitsa, in the summer – participation in traditional Sami games, in the autumn – senior class pupils participate in the municipal competition “Survival School”.



**4** In the primary school, the children have weekly classes on Regional Studies.

**5** It has become traditional to make regionally oriented presentations within all the study disciplines.

**6** Carrying out integrated, thematic classes, including those on culture and language preservation of the native people, is a good school tradition.



**7** Children and teachers actively participate in the Days of the Sami Culture, the Days of the Komi Culture, the Days of the Pomor Culture, the Days of the Slavonic Writing System and Culture and also the Days of Community of Ethnic Cultures.

**8** Upper-graders, supervised by the teachers, make primary school pupils acquainted with national games, folklore and poetry during the program “Northern Kaleidoscope”.

**9** Carrying out intellectual games on the national material.

**10** Participants of the school club in Regional Studies promote inclusion in the linguistic environment. Collecting information for the museum and by talking to people in the settlement, the pupils have an opportunity to hear the speech of the Sami, Komi, and Nentsy, and, by forming the materials later, they may use them in their creativity workshops.





**11** Pupils of our school are constant participants of creativity folklore, dance, and music groups.

**12** National cultural traditions develop at school also by involving the learners in different kinds of national sports. The learners

compete in darting lasso, national fight, jumping over the sledge, and playing the Sami football. Children like to spend time in the snow hills and skiing.



# Workshop Offered Multimodal Methods for Dealing with Health Matters in Secondary Schools

The ArctiChildren InNet -project invited pupils and teachers from its pilot schools to explore new forms of multimedia teaching methods.

Around twenty pupils and teachers arrived at the three-day workshop (16.–18.9.2014) to the Tornio campus of the Lapland University of Applied Sciences. Participants were from Ivalo secondary school in Finland, Manda school in Luleå Sweden, Talvik school in the north of Norway, and Russian schools in Murmansk, Kandalaksha and Lovozero. The workshop was organized in collaboration with the University of Lapland.

## New ideas for teaching and learning health-related issues

The participants were offered three different kinds of workshops. The overall theme was "How do I Produce Digital Material with my Pupils? – Multimedia Material, Arts and Storytelling into Learning". The common goal of the

workshops was to learn how to use modern technology as part of versatile teaching.

The workshop "From a Selfie to Mapping Northern Identity" was about developing better scheme to construct children's cultural identity, self image and self-esteem. The aim of the workshop was to produce self-portraits in different techniques and from different perspectives. For the pupils making a self portrait was a chance to observe, become aware and accept themselves as unique persons, and to find differences and similarities compared to others. This workshop was coached by Art Education students Laura Leppänen and Sonja Frimodig from the University of Lapland.

"From Outside to Inside", a workshop on environmental art and place relation, introduced the participants to different methods to explore the environment and our relation to it. It included activities outdoors and also combining working with natural materials, drawing and painting and media tools. By getting to know the value of their own environment, the pupils were able to explore the local identity, traditions, roots, background



of a video production were introduced to the participants – from the ideation all the way to the editing of the video. This workshop was coached by Timo Puukko, a senior lecturer in Media Arts from the Lapland University of Applied Sciences.

### **New experiences, friends and memories**

and significance of their own self-image formation. This workshop was coached by an Art Education student Salla Juvonen from the University of Lapland.

The third workshop was “How to Audiovisualize Your Teaching”, a video workshop based on storytelling. The goal of the workshop was to find new innovations and learn how to use audiovisual production as an innovative, activating and motivating teaching method. During the workshop, all stages

The three-day workshop was full of work, but it was also rewarding to the participants as well as to the organizers and workshop coaches.

*“We are happy but a bit tired. It was very nice to see other cultures and people from other schools and learn how they do the teaching work in their schools”,* workshop coaches Leppänen and Frimodig pointed out.





7th graders from Luleå, Josephine Kuo and Alva Lodén, participated in the art workshops. They enjoyed getting to know new people and new cultures.

*“At start we were a bit nervous of meeting new people, but as soon as we got into it and the workshops started everything has been great”,* the girls explained.

Pupils from Ivalo, Ada Lähdekorpi, Riia-Maria Huovinen and Elina Moshnikoff, also took part in the art workshops. For them this experience was unforgettable.

*“We had so much fun, and it was great to meet new people, and we will miss everyone.”*

Teachers from Ivalo, Rodney Francett and Katri Kittilä, summed up that a lot of sweat and tears were poured during the three days video workshop to produce a 1,5-minute short movie. Both emphasized that by participating in the workshop they got a lot of new resources for teaching.

*“An amazing amount of work. It was fun and depressing and exciting and happy”,* Francett commented with laughter.

Olga Manyckova, a teacher from Russia, was also pleased with the results of the video workshop.

*“We have been working for three days making two videos and I think it was hard work. We hope that our co-teacher, the*



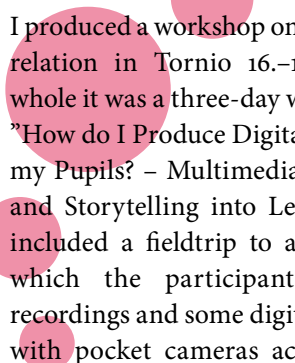
*best teacher, Timo Puukko thinks that we were obedient and hard working”,* Manyckova said smilingly.

Russian pupils Lada Sergeeva and Yana Shapar took part in the video workshop and the three days of work left a smile on their faces.

*“We met a lot of new friends here so, it was very exciting, and I think that the ArctiChildren InNet project is the best project maybe”,* Shapar praised, and Sergeeva continued *“Now I have got a lot of knowledge about making films that I didn’t know before this project. And we will miss everyone.”*



# "From Outside to Inside" – A Workshop on Environmental Art and Place Relation in Tornio



I produced a workshop on personal forest relation in Tornio 16.–18.9.2014. As a whole it was a three-day workshop called "How do I Produce Digital Material with my Pupils? – Multimedia Material, Arts and Storytelling into Learning", which included a fieldtrip to a forest, during which the participants took audio recordings and some digital photographs with pocket cameras according to the instructions I gave in the assignment for the whole project. Four students from various schools from Russia, Sweden, Finland and Norway participated in the workshop. The goal of the workshop was to explore one's relation to forest by using your own texts, photos and recordings and to indicate it in a form of digital storytelling.

A lot of scientific research about the forests effect on people's well-being have been made and many studies have confirmed that spending time in a forest environment has a positive effect on both mental and physical health. A walk in the woods revives and increases a person's well-being. (Korpela, Sarjala, Savonen & Vattulainen 2011 30–32.) From this point

of view, time spent in the woods is never time wasted. This was the starting point for my workshop.

Forest excursion advertised as "a special tour to the nature" may support the idea that human beings and nature are separate things. For example, a child that has grown in a very urban environment doesn't necessarily feel that he or she has any special connection with the forest and so it is natural to experience forest as a separate and aloof "wilderness", a place you just take a trip to. (Willamo 2004, 44.) By art based methods I wanted to make the destination of my fieldtrip a place where participants could strengthen their relation to forest and easily attach to the place. A strong relationship with forest environment could contribute positively to the individual's well-being. My point of view in the background is the perception that an individual's identity is built on part in the relation with different places in one's life (like a local home environment). (Clayton 2012, 164.)

Studying the relation to forest is also examining an individual's identity. In this process of one's relation to the forest



as a place, the place appears to be not only a physical environment, but also a place consisted of collective stories and traditions. While one experiences a specific place, like his home town, he doesn't merely experience only the physical realities but also the social perceptions and meanings the local or any other people have connected to the place (Fabian, Kaminoff & Proshansky 1983, 62). In this experience we understand our own relation to the place. According to this aspect a nature excursion should allow the participant to get close to the environment and offer experiences that make it easier to attach to the place. It should not be just "a simple trip to the forest".

Art education can be seen as a form of identity work. By making and exploring art one can understand the relation

between self and others. A person can explore his own identity in relation to his own life and culture he lives in through art that can be seen as storytelling in visual form. (Räsänen 2008, 252–254.) Art based methods as a medium to build and work with one's identity is an excellent choice in identity work. Multimodality enabled the workshop participants to use the right tools to explore their forest relation and made it possible to project and embody the relation in this relatively short time frame. As a result workshop produced three digital stories, kind of forest-self-portraits, which contained photographs, audio and texts showing how pupil reflect themselves in the forest environment.

Before the actual workshop, the previous day, we got to know each other, made self portraits and took a little peek

to the theory behind the place relation case. In the second day morning we made a fieldtrip to the woods with cameras and recorders. I gave the participants a photography assignment, which went like this:

"TAKE A PHOTO OF SOMETHING

1. FAMILIAR
2. STRANGE
3. A FOREST-SELFIE
4. BEAUTIFUL
5. MEANINGFUL/ OF GREAT WORTH, AND IN ADDITION AT LEAST FIVE PICTURES OF YOUR OWN CHOICE, FOR EXAMPLE, DOCUMENTARY PHOTOS".

I also asked them to capture the atmosphere by recording sounds while walking in the forest.

The participants were quite free to move around in the forest since it was a recreation area so there was no danger of getting lost. Participants were excited to take the pictures and record the sounds and they walked along the paths like they knew the place.

Whenever we ran into each other we discussed about the experience and compared the forest to those back at home. We all discovered a specific leisure atmosphere and a personal feeling of peace and it would have

been nice to be able to spend more time in the forest.

After the fieldtrip we sat down and verbalized our understanding of the forest by drawing and writing, resulting to some pictures and also one folk poem. We collected the texts, drawings and recordings the next day and put them together into the personal digital stories, which we created with video editing software on computers. The aim was to make an atmospheric entity of the pictures, texts and recordings, which would be a kind of a forest-self-portrait.

Forest relation is constructed in interaction with the forest environment. That relation cannot be given to anyone in a ready-made package. However, there some work can be done for a foundation consisting positive experiences of nature through which an individual can form their own relationship with the forest environment by exploring and reflecting the meanings and values related to it. The participants gave very positive feedback of the assignment and they worked with enthusiasm in the workshop. The digital stories told by the pupils showed a



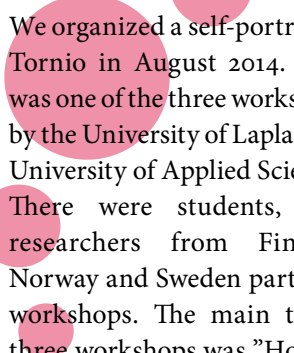
positive and relatively strong cultural forest relation and presented the important values the pupils link into forests. In the future the project should be performed in a longer period of time. Also, other art based methods could be used, varied and added to the existing ones. The whole project could be focused on other kinds of environments too from schools to the whole local community, because seeing the importance of the local environment and attaching to it increases one's well being.

**Pupils' results of the "From Outside to Inside" workshop:**

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# From Selfies to Mapping Northern Identity – Art Education Workshop in Tornio



We organized a self-portrait workshop in Tornio in August 2014. Our workshop was one of the three workshops organized by the University of Lapland and Lapland University of Applied Sciences of Tornio. There were students, teachers and researchers from Finland, Russia, Norway and Sweden participating in the workshops. The main theme in these three workshops was "How do I produce digital material with my pupils". The aim of our self-portrait workshop was to concentrate to the learning by doing / process and to courage teenagers to explore their thoughts about themselves and about others. During the workshop we documented the process and edited a short video of what we had been doing for the three days.

## Theoretical basis

Nowadays children and teenagers spend a lot of time in the internet and other social and cultural media. These new environments are full of opportunities to gain knowledge, express oneself and

make social connections. All these environments are easily accessible for everyone. The problem is that these new environments are also fragmented, differentiated and unpredictable. Schools should help and support children to construct their self-esteem and their ability to make choices in their life. Schools should trust children in their ability to consider and make decisions regarding their wellbeing and health. (Oikarainen 2013.)

Multicultural art education aims to support children in their process of constructing their identity. To understand other cultures and other people one has to understand him/herself first. Understanding roots and generations is the base for respecting others. Identity consists of social and personal dimensions that you cannot separate. Art is about seeing one's relation to the community and the environment. Art increases awareness of difference and it helps in seeing strange and unfamiliar things in a more ethical way. (Räsänen 2008, 252–259.) One important task for education is also transferring traditions. Exploring one's background and traditions

is crucial for knowing who you are, and where you are from (Räsänen 2008, 259). Accepting and knowing oneself is the key for holistic, psychosocial well-being. Exploring a self-portrait in several ways helps children to consider different perspectives of themselves and their selfdom.

## Conclusion

The workshops in Tornio turned out well, despite of a few unexpected circumstances. The first day we worked together with Salla Juvonen and all the participating pupils. We discussed the concept of self-portrait and how artists use it as a tool of expressing different values and feelings. We made portraits of one another on a transparent sheet from behind a glass. The atmosphere was open

## Workshop conclusion:

and genuine, and the participants got to know each other. On the second and the third day of the workshop we painted more expressive self-portraits and made environmental – cultural self-portraits by collage technique. After dividing the group for the two workshops (the self-portrait workshop and the workshop on environmental art and place relation) the groups turned out to be very small. There is usually more intimacy in a smaller group, and people get better chances to get acquainted with one another. However, a few extra participants would have brought a bit more cultural





interaction and interesting personal experiences in our group, without changing the warm atmosphere.

Everybody were emancipated and concentrated in their work and for the entire time in the workshop we discussed about who we are, where we come from and how we understand ourselves and each other. We documented the work with an iPad during the workshop and the pupils shared their thoughts about the pictures they were making. We had planned to edit the compilation video together with the participants, but they all had to leave early on Thursday, so we edited it just the two of us. All in all we reached our goals in terms of pupils exploring their inner and outer self and cultural background. Pupils were thinking about their identity, their self image and their features.



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# HIGHLIGHTS – Community Based Video Art Workshop Supporting the Local Identity And Social Interaction of Teenagers in Ivalo

We organized a video art workshop in Ivalo secondary school in October 2013. In the workshop there were 10 participants from the 8th grade compulsory art course. The aim of the workshop was to strengthen the pupils' local identity and also their social interaction by working together as a group and making their own art video about their life in Ivalo. Ivalo is located in Northern Lapland in the municipality of Inari and it is the biggest village of the municipality. Northern nature and tourism are remarkable for the area. (Inari-info 2014.)

## Theoretical basis

Everyday life and living in a certain area have a great impact on one's identity. Living area is not just a physical location but also an individual experience of the surrounding environment and community. Local identity is a strong mental asset within the community. (Jukarainen & Tuhkunen 2004, 100-101.) Art can be one way to strengthen and

support local identity when it is related to local and communal phenomena (Hiltunen & Jokela 2001, 10).

The starting points of our work were in the methods of community based art. Community based art focuses on local, cultural and communal viewpoints and tries to invigorate local people's life and build their identity (Hiltunen 2007, 139-140). In community based art projects local people work together as artists and take their subjects from the local culture, environment or their every day life (Hiltunen & Jokela 2001, 10, 17, 21).

Art can affect people's wellbeing. By making art people can express themselves and get a feeling of controlling their life. Creativity and creative activities can become the tools for young people to build healthy self-esteem, especially if the art project is closely related to their own life. (Hiltunen & Huhmarniemi 2010, 16, 66.) Everyday life and personal experience are an important basis for making community based art. A piece of art does not necessarily have to tell about big things or great incidents. (Katainen & Sava 2004, 31.) Community based art

gives an opportunity to examine relations to one self, other people and one's place in the world (Bardy 2007, 21-24).

## **Workshop in Ivalo: getting started**

We started our workshop by presenting ourselves, the ArctiChildren InNet project and its website, and we told the pupils that also their videos will be posted on the website. We asked them to think about what kind of things they wanted to show and share to other people through the videos. We showed pupils some example videos from YouTube to inspire their creativity. We also taught them the basics of filmmaking, for example basic film vocabulary and how to use cameras and different view angles and image sizes to make the film more interesting.

Before we started the actual filmmaking we had "a warming exercise" which was meant to make the atmosphere in the class more open for the ideas. It also helped us to get to know the pupils better. We divided the pupils into two groups in which they were going to make the films. Pupils were meant to make a collage on paper by collecting different texts and picture clippings from magazines that they thought could represent their thoughts of living in Ivalo. The meaning of the exercise was that the students could present ideas of how they see their own life in their home village and what kind of things they want to show through the videos to other people.

Collage exercise was important because in any art project the starting can be difficult and it often requires "warming up" with small easier exercises

to get into the subject of the project (Hiltunen & Huhmarniemi 2010, 18). In all community based art projects it is important for pupils that they can be a part of the group and can meet their friends and new people, have discussions and process ideas with them. The main goal is not just the finished art piece but the process of making it. (Kantonen 2005, 33.) In our project collage exercise worked well because the pupils had eager and important discussions dealing with their every day life, local environment, youth hobbies in Ivalo and cultural issues about Lapland, and Sami culture stereotypes.

## **Making the video**

Video as a tool suits the ArctiChildren InNet project's goal to produce material and create dialogue on the ArctiChildren website well. We also thought that a video would be an art form that interests the pupils because nowadays the audio-visual culture is all around them. Short video clips shared on the internet are a global and an effective way for people to express themselves. The imagery of media affects the identity and worldview of the children and the youth, and media also has an impact on their social and emotional development (Laitinen 2006, 62-63). We believed that making the film in a group would be an experience that would allow the pupils to think about and process their lives and through that to build their self-image. Also, in the field of contemporary art video has been used as a tool to work with the northern identity. For example the Finnish artists Marja Helander and Markku Laakso have made video art pieces describing

their northern identities (Hautala-Hirvioja, Kuusikko & Lundström 2014, 26, 44).

In the workshop the pupils planned their films by making a storyboard, a script with drawings, to make clear what they were going to do, and then started filming. As teachers, we were there to discuss and help with planning, visual solutions and using the cameras but we gave the pupils a lot of freedom to make the films the way they wanted. Openness in plans and in working gives space to the pupils themselves to focus on the things they think are important and they want to express (Hiltunen & Huhmarniemi 2010, 16). The two groups filmed their video pieces both inside the school and outside around the school area. The pupils were active and they seemed to enjoy making the videos. They took different roles and played eagerly in front of the camera and had fun. Also other pupils and teachers of the school were interested in what they were doing. When the students had filmed all the material they wanted, we ended the workshop by editing the films and then watching them together. The students already knew how to use the editing tool on the school's computers and they worked quite independently.

The final two films were quite different compared to each other. The other group made a short music video-like clip with a lot of quickly changing shots and music at the back. The film was built on the idea of the expectations that other people might have about the life of the youth in Ivalo - with a lot of different hobbies and action - and then the boring reality where they have nothing to do. The other film was more like a short story with a plot and it presented the pupils' everyday life



**Links to videos:**

in school with a strict teacher who was all the time telling them what to do. In both films the life in Ivalo is shown as a very ordinary everyday life where friends, hobbies and school play the most important role.

## Conclusion

The interaction between the pupils was very central in working with the video. The pupils worked well together in a good atmosphere. The video piece was something they created together and everybody had something to say and a special role in the group. Working together like this teaches the pupils interaction skills and consideration of others. Video workshop also offered them a possibility to examine their own identity in a multimodal way. When the youth view a picture of themselves they work their self-image, which is part of the developing identity (Savolainen 2008, 165). A video may suit this even better than a still photograph, because it shows the person's overall appearance well: not only just an image but also movement, sound and facial expressions.

All together the workshop went really well and it was a positive experience for the pupils. They succeeded well in making the films and a video as a tool worked well in dealing with the workshop subject, the pupils' own life and local identity. The pupils expressed themselves and their everyday life in many ways and we noticed how important it was to have a small "highlight" moment of their life in a self-made video. Even one short workshop can encourage, inspire and create positive experiences and therefore support the youth's wellbeing.

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# Let's Have a "School-Rules-Attitude"


Below is a conversation based on development and research work in the international project ArctiChildren InNet. These are some reflections from two of the researchers in the "Swedish Team".

**Catrine:** Now we have worked over 10 years to help improve health and wellbeing in schoolchildren in the northern part of Sweden. The main arena for the health promoting activities has been the educational setting – in schools. During this time the Swedish schools have been heavily criticized.

**Catrine:** In my role as a teacher and researcher, I have often wondered about the core of the teaching profession, for example which tasks a teacher has at a school. One mission that I think of is to help children and young people in their own learning of knowledge in different subjects.

**Ulrika:** Yes and this critique can rightfully point to areas to improve, however, there are a lot of positive aspects in school as well so the "school-stinks-attitude" that the media in Sweden presents is not the whole truth.

**Ulrika:** The knowledge mission may seem obvious to us and to many teachers. It is about supporting children in their own learning processes and in assuming that they get a good education leading to high achievement.



**Catrine:** Yes, it is perhaps the first thing you think about, but that's not the only mission. A teacher's job is also to help students to train themselves to be good citizens who care about their fellow human beings. For me it's about ethics.

**Catrine:** Encounters between students and teachers have a central role in enhancing learning and reducing conflict. So, how can teachers create relationships characterized by trust, respect and participation?

**Catrine:** That's what makes it all so exciting! And remember that research also says that the focus on creating a good environment in the school not only improves the grades, but also has positive effects on students' health and wellbeing.

**Catrine:** Yes, remember what Henry Ford said ...whether we think we can, or we think we can't, we are right.

**Ulrika:** Obviously it's an important task that should not be forgotten. Research shows that social relationships affect the way students learn, in other words good relationships among students and also between students and teachers are important.

**Ulrika:** Research has shown that if teachers and students focus on good relationships formed by caring and participation, there is a clear association with increased student achievement in their school subjects.

**Ulrika:** And after years of research we are convinced that an appreciative approach has a critical impact on how we experience something, and even how we manage our information.

**Ulrika:** Since we know that an appreciative attitude can make a positive difference in the school, we want to argue for the importance of having a school that "rules".



**Catrine:** It is of course important not to ignore problems in school even though we want to encourage a change of focus, to see what is good, and to learn from good examples.

**Catrine:** Exactly and in this project we have had the support from municipalities and even politicians at different levels and officials dealing with school issues. This makes a big difference on lasting effects!

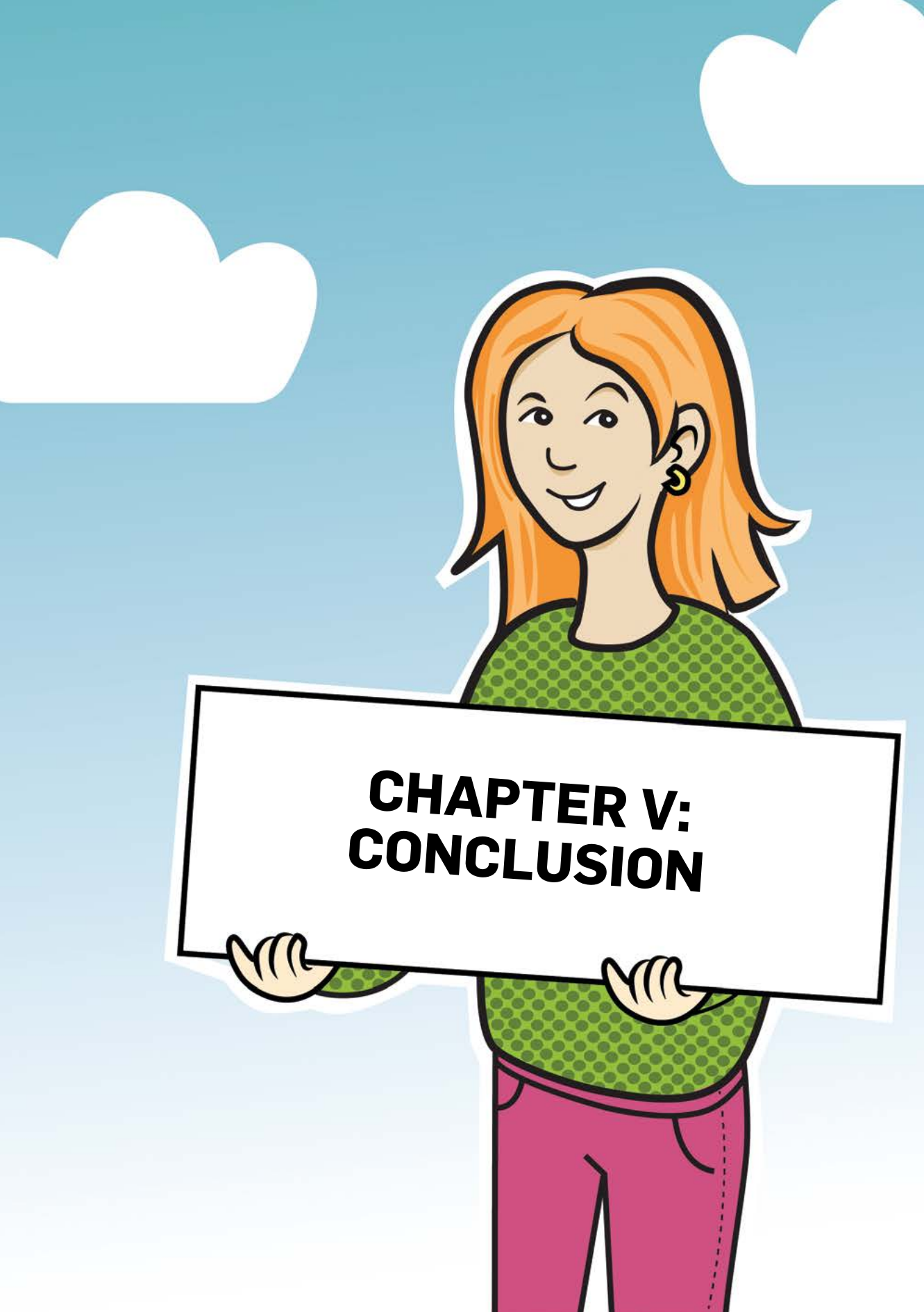
**Catrine:** That is precisely why it is so important to emphasize that it is the whole that is important. It is not enough that there is one teacher who is enthusiastic about the work but everybody together putting health and learning on the school agenda.

**Ulrika:** Right, we have for example met a lot of good examples in schools during the ArctiChildren inNet project, schools where the school leaders, teachers and students have been working together to increase health and learning in school. Some examples are shown in this publication.

**Ulrika:** This can also include parents and other adults in the school's local community. Just like you said, this is important for sustainable change so that everybody involved continues to improve schools after we who are researchers are no longer present.

**Ulrika:** What a thrill it would be if an appreciative approach would begin to be practiced by students, teachers, school leaders and all others you just mentioned. **Then we would be able to turn together the "school-stinks-attitude" to the "school-rules-attitude" instead!**

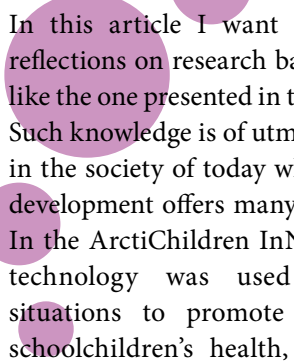




**CHAPTER V:  
CONCLUSION**



# From ArctiChildren to ArctiChildren InNet – Some Reflections



In this article I want to share some reflections on research based knowledge like the one presented in this publication. Such knowledge is of utmost importance in the society of today when technology development offers many new solutions. In the ArctiChildren InNet project new technology was used in different situations to promote and facilitate schoolchildren's health, empowerment and learning. I have had the privilege to follow some of the new ideas, implementations, analysis and outcomes that have derived from the project. And I can conclude that great efforts have been made to develop an eHealth model to empowering schools in the Barents region.

When the first ArctiChildren project started in 2003 the focus was to increase psychosocial wellbeing among children and youth in the Arctic region. Experiences from the project provided all of us and the society with valuable knowledge about children and youth health and wellbeing in this region. However, during the initial phase of the ArctiChildren project the use of new technology for eHealth and eLearning

was not discussed or even mentioned as a conceivable tool among us as project members. Today we can reflect on the rapid technology development that has taken place since then and on how people and children's communication has changed during this period. We know that people's development and health is affected by the culture and the environment that is present in their daily lives and that this is especially significant for children. Thereby it is wise to provide studies with focus on how new technology and communication can be used to the best for schoolchildren. Adults can ease, challenge and protect children and play an important role to children's health, development and learning. This insight is one factor that motivates the need to work with a project like the ArctiChildren InNet.

Unattached of cultural differences children and adults in the Barents region can have it more or less well in their lives. Even for children in the same family there can be differences in their health, development and learning situations. At the same time we must note that the children are dependent of adults. This

creates a dual responsibility for adults – for oneself and for the child. All human beings have basic needs that must be satisfied to live a healthy life. Some of these basic needs are for example the need of food, drink, clothes, sleep, activity, and communication with others. Besides such needs the human beings can be in accordance with what Georg Henrik von Wright (1995) describes also as intentions, needs and desires. According to von Wright hunger and thirst are neither needs nor a desire but instead they are sensations that arouse a craving to satisfy the need. Thus, the child needs

to learn to recognize their own body sensations to gradually learn to satisfy the needs of food and drink. That goes for the child to learn to act even in situations where one has the possibility to fail to act. Learning to understand the penalties of decisions or to consider the reason is according to von Wright (1995) related to the fact that humans have a language. By speech ability humans develop a meaning about whether they need the things they desire or if they want to have the things they are not in need of. However, today humans can talk with each other not only via personal communication but also via eDevices. Thereby new communication opportunities are created and openness to a diversity of values related to school, health and life is a fact.

This reasoning leads to an understanding of the complicated processes a child needs to undergo to learn to live a good and healthy life. From my point of view I can see that the art to learn to live a good life with high life quality is not approachable knowledge that can be taught. Rather I understand it, with support from von Wright's (1995) thoughts as the need of the child's searching after her own objectives in harmony with her conditions. The challenge for parents, teachers and significant adults for the child is as a consequence of the above an attempt to support every individual child and increase their own power.

Empowerment strategies can be one starting point for supporting children examining their own life and settings. One



strategy that has been found fruitful is to involve children and teachers in a classroom research (Öhrling 2006; Kostenius 2008). When involving teachers and children in a research the findings were understood as the children having learned how to listen to other's language and talk which can lead them to 'achieving a sensitive ear' (Öhrling 2006). Schoolchildren can accomplish 'a sensitive ear' for themselves and for others in school by support from their teachers. By facilitating schoolchildren taking increased responsibility and by teaching them to listen to each other, one ingredient in their well-being is supported. The significance to listen to the schoolchildren's needs, interest and expressions is maintained by the creation of a supportive learning environment. In my own work I have concluded that the meaning of having 'a sensitive ear' also can support the development of the self (Öhrling 2006).

It is important to note the need for wise adults supporting schoolchildren when searching objectives for their life, health and school and that it should be done in harmony with the child's, families' and society's conditions. Questions about how adults in school value health related issues are necessary to ask. Traditionally teacher's purpose was to "...work in some institute with some students in order to bring about learning or some other forms of changes in the personal development of those students." (Kansanen 1997, 35). According to Kansanen (1997) teachers must besides of good knowledge of the values in the curriculum also accept the values behind the curriculum. Members in the ArctiChildren InNet project have developed knowledge on how

empowerment strategies can be used in schools of today. Thereby the findings of the project are also reflecting differences and similarities in the conditions within the Barents region. Such visibility creates a base for mutual understanding and knowledge development by showing the opportunities adults have to support schoolchildren to gain more power in their own lives.

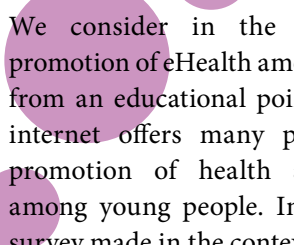
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# Future Perspectives Concerning School eHealth and eLearning



We consider in the following the promotion of eHealth among adolescents from an educational point of view. The internet offers many possibilities for promotion of health and wellbeing among young people. In a media skill survey made in the context of the project it appeared that social media has not such big an effect on adolescent's wellbeing and life as teachers and parents believe. However, the internet offers a suitable space for the age phase, where you can be "not yet in adulthood", but neither in childhood nor in the domain of home. This kind of interval space is developmentally important for adolescents. There they can discuss with other young people outside the watchful eye of the adults about the things that puzzle them at the moment, they can try different identities, and receive social feedback.

An empowering eHealth model was developed in the project by utilizing new methods of information and communication technology in health and wellbeing guidance. Among other things different thematic multimodal material and a discussion forum directed for adolescents that functions at the same time as a learning environment for

students of health and social services in Lapland University of Applied Sciences were created.

By effectively utilizing these it is possible to develop adolescents' health and wellbeing identity in the intellectual area of wellbeing by producing satisfaction to different choices applying to health and wellbeing, and by adding motivation to activity consistent with the young people's life situation. Internet provides possibilities to receive information that belongs to one's own developmental stage, a possibility to discuss with other adolescents about important issues to oneself and to receive help from an expert about good health habits. In this age stage an intellectual and motivational base is created in order to take into account the things in one's own life that belong to a good health.

Utilization of possibilities of the internet is anything but an unambiguous issue. Adolescents visit the internet with an online principle. This can become problematic for providers of eHealth services. A discussion forum of the [arctichildren.fi](http://arctichildren.fi) pages was tested in a Finnish pilot school. Adolescents could ask questions about issues puzzling them. Community health nurse students



answered to the questions within a delay of seven days. Pupils were satisfied with the answers but they regarded the response time as too long.

Therefore, eHealth services targeted towards adolescents should be planned from a realtime communication point of view. Moreover, services should disembark among young people and be easily discoverable and visible. E-services have a dual meaning in sparsely populated areas. On the one hand, they offer easily accessible services and on the other hand, they secure adolescents' privacy and prevent imprinting a community. The worst bottleneck in developing services is the disparity in media skills among adolescents, teachers

and experts. A special attention must be paid to improving the media skills. Good and functional services can only be produced by competent personnel.

Technological development will undoubtedly mean a re-evaluation of the work done among children and adolescents and the role and need of know-how among workers. Lauha (2014) continues that the matter is not only how in different branches online services are developed to correspond to adolescents' current habits and needs of use, for example by new kind of mobile software, but that the question is also how mobile technology is used as a part of the work and activity done among adolescents. Among youth work, for example, schools

have increasingly begun to try functional and pedagogical possibilities of mobile devices. (Lauha 2014.)

Although schoolchildren are confident and active users of technologies, they still need support and guidance from adults to find themselves the most beneficial sources and to develop critical media know-how. In addition to ability to read texts, we must invest in visual literacy and in perceiving the big picture of media presentations. Versatile media skills give keys for understanding different texts, pictures, voices and combinations of these without forgetting tools for fulfilling our own media products. Besides teaching critical media skills and own production, in schoolchildren's media education it is important to invest in online skills and understanding the barrier layers of publicity and privacy. (Rahja 2013, 23.)

The above mentioned challenges to develop new eHealth approaches and to strengthen the learning and health connection through multimodalities and ICT applications at the northern schools

in the Barents region have been contributed to in many ways:

- mapping views, needs and wishes of pupils of the pilot schools in four countries about school eHealth and eLearning
- a number of workshops at the pilot schools where pupils have been active participants in producing multimedia material together with teachers and university students
- a lot of discussion, meetings, and seminars on how to develop a cross-border ICT environment where schoolchildren's voices would be as a base of the dialogue in implementing new interventions and practices
- last but not the least, a workshop called "How do I produce digital material with school children?" for pilot schools' pupils and teachers
- and finally, collecting all great development experiences and studies to the ArctiChildren InNet publication you are just reading.

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# Experiences of Cross-Border Collaboration to Promote Schoolchildren's Health

A three-year-long journey to develop “Empowering School e-Health Model in the Barents region” in the ArctiChildren InNet (2012-2015) project is drawing to a close. Just to collaborate and develop together across boundaries has been incredibly important. During three years we have provided more understanding, and great experiences of shared learning about possibilities to improve schoolchildren's health and well-being in the Northern part of Europe. This journey will continue.

In this article we want to express our feelings and experiences of shared learning process in the ArctiChildren InNet 2012-2015 project.

## Did you achieve the project goals in your country and how?

I am very happy that so many university students at the Lapland University of Applied Sciences and University of Lapland have been interested in developing new eHealth applications with pupils at the Finnish pilot schools. There are lot of good examples about this kind of collaboration on the [www.arctichildren.fi](http://www.arctichildren.fi) -website. Also ArctiChildren -websites in Finnish, English (and Russian developed by NaRFU) and ChatSimulation – an online guidance learning environment – are great examples of achieving project goals in Finland.

## In your opinion, which were the biggest assets and benefits of the cross-border collaboration for the project?

Although the ArctiChildren InNet project has been demanding with its challenging goals, the project network has been in the frontline of most innovative approaches in developing new eHealth approaches by strengthening the learning and health connection through multimodalities and ICT – not only in the Barents region but in whole Europe.

### **How do you think the pilot schools and other target groups could benefit from the cross-border quality/nature of the project?**

I really hope that the schools – pupils, parents and school staff – would use the ArctiChildren websites more and more and its activities and material in all four countries. Also, I believe that the ChatSimulation will be a useful tool and a good start in developing new online learning approaches for eHealth promotion at the universities.

### **What were the main achievements and highlights of the project regarding the cross-border cooperation with the partners?**

We have got innovative results about school eHealth promotion and how students and working life are able to achieve new capabilities for online guidance learning. Also, I have been so surprised every time when I have seen the enthusiasm of the pupils and teachers of the pilot schools to collaborate in the ArctiChildren InNet project.

### **How do you personally see the future of eHealth and eLearning?**

These both are a new direction for the future by giving a lot of equal possibilities – to different people living in different places, for example in the remote areas – to achieve educational and social and health care services.

**Eiri Sohlman**

Finnish project manager (Lapland UAS)

### **Did you achieve the project goals in your country and how?**

Yes, we have achieved the goals of the project within the framework of the Russian segment. We got the understanding of what is electronic health, together with an awareness of how serious and important this issue is for social and educational practices of schools, and the children and parent community. These good results were achieved thanks to the efficient work of the project team, both on the management level and on the level of research cooperation.

### **In your opinion, which were the biggest assets and benefits of the cross-border collaboration for the project?**

The position of cross-border cooperation is important in itself. It is a distinct dialogue of cultures within which, at the intersection of various scientific and educational approaches new knowledge is born and best practices are outlined. In addition, the dialogue between people: teachers, scientists, researchers and children themselves is extremely important. It seems to me that every international project has long-term results: people learn to understand each other, never take up arms and will never provoke any aggression. In this respect, every international project is another step towards peace on earth.

### **How do you think the pilot schools and other target groups could benefit from the cross-border quality/nature of the project?**

Teachers and other professionals in Russian schools met with a very interesting experience on the issue of eHealth in Finnish schools. Communication with the teachers of our pilot schools shows that some elements of the best practices are already used in real social and educational work. Schoolchildren were particularly pleased to communicate with peers from other countries. We saw their joyful, inspired faces. In the end, live communication in English is always the way to the development of personality.

### **What were the main achievements and highlights of the project regarding the cross-border cooperation with the partners?**

It seems that the possibility of exchange of scientific ideas in a cross-border field is the result itself. Comparative approach of the project methodology, is internally focused on finding new ways to experience the creative use of best practices in foreign countries and at the same time to preserve the specificity of a particular culture, including the educational culture. The truth is born in a dispute, and I think the process of professional development has occurred in the project, and especially the process of personal growth of all partners.

### **How do you personally see the future of eHealth and eLearning?**

It is difficult to say with certainty today about the future of the project and its sustainable development. MSHU, of course, will continue to support pilot schools of the project. We are ready to conduct seminars and consultations, but the results will be largely determined by whether the school itself is able to maintain the site, update it, and to find more and more resources. We cannot guarantee that it will be so. Our project team is going to publish a monograph "From the history of the project." This is just a rough name, but we would like to summarize the experience of networking and share their successes and risks of the project, in which we do not just work and live for twelve years.

### **Final greetings for the project participants?**

I sincerely wish scientific courage, even audacity in producing new ideas and human wisdom in making both professional and personal decisions to all partners in the project. I am convinced that today a lot depends on how strong our cooperation is and how well we have learned to understand each other in the world, contradictions of which are unusually heightened today.

*Inna Ryzhkova*

Russian project coordinator (MSHU)

### **Did you achieve the project goals in your country and how?**

In my opinion, we only partly achieved the goals in Norway. The way we did the best was in the beginning with the questionnaire and interviews – the data collection. At that time we established good contacts with the pilot schools after both visits and mail/phone contacts. In the beginning the results were preliminary analyzed and presented to the pilot schools in different workshops. So far so good, but after that two of the schools had different problems and minimized their participation.

### **In your opinion, which were the biggest assets and benefits of the cross-border collaboration for the project?**

The benefit of the cross-border collaboration was to meet researchers and colleagues working with the same subjects as myself. The benefits of that was to get new information and insight in different ways to interpret problems and solutions.

### **How do you think the pilot schools and other target groups could benefit from the cross-border quality/nature of the project?**

From the start, 3 pilot schools in Norway participated in the project. Due to different problems like sick leaves and undermanned situations, two of the schools had to reduce their participation. One school followed the project all the way. The top rated single event for this pilot school is no doubt their visit to Tornio where both schoolchildren and a teacher participated. They liked the visit very much and have presented the visit to the rest of the school. Besides this, the school has a new insight in how to approach different challenges, and they have got new ideas to anti-bullying-work – especially to cyberbullying - and work with psychosocial wellbeing.

### **What were the main achievements and highlights of the project regarding the cross-border cooperation with the partners?**

International cooperation is not always easy, and it is an achievement in itself to agree on a common research project, work out a common questionnaire and prepare possibilities to compare results cross border. It is a highlight to establish a common website – even if it is not available in all actual languages. The main highlight in my opinion was the common printed publication – the book. It is necessary to remind ourselves that web-publications do not reach all potential readers. Many still prefer a book.

### **How do you personally see the future of eHealth and eLearning?**

Internet is filled with elements close to eHealth and eLearning. There are examples of good information for schoolchildren, and the authorities use digital media for information more and more. But much of what is available on the internet shows up to be commercial and are in the end to advertise special products, events etc. On that background is it important to have serious and research based information. But I am a little bit worried because the commercial interests seem to dispose unlimited economical resources, but we (schools, universities and other official informants) do not.



### **Final greetings for the project participants?**

It has been a pleasure to be part of this international project. I have learned to know other people, systems and ways to solve problems. From my side is it the last project, but I wish all participating parties good luck with the future.

**Ole Martin Johansen**

Norwegian project coordinator (UiT The Arctic University of Norway)

### **Did you achieve the project goals in your country and how?**

Yes I believe we did. One of the overall goals of the ArctiChildren InNet project in Sweden was to meet the needs of schools in their efforts to improve health in schoolchildren in the northern region of the country. A specific goal was through the use of empowerment and ICT to find ways of creating activities to promote health and learning, which could be implemented in the pilot schools. To be honest the Swedish team exceeded my expectations involving schoolchildren, teachers, school leaders and parents in development work which I believe can be sustained even after the project ends. Together with the schoolchildren we have created interventions using ICT, for example by letting them send encouraging text messages to each other to become more physically active, by using iPads to learn more effectively and we have identified how valuable encounters can be achieved in school assignments. I am certain that one of the keys to our success was the involvement of the end-users in the creation of the activities.

### **In your opinion, which were the biggest assets and benefits of the cross-border collaboration for the project?**

I am thankful for the opportunity to meet researchers and school professionals from other countries than Sweden to realize the differences and similarities in the efforts to increase health and learning in the schoolchildren in our respective countries. If we had made this project only in northern Sweden we had missed out on the good examples shared by colleagues in Norway, Finland and Russia. I think our biggest asset was focusing on the good examples presented from all of our respective countries and the willingness to see beyond cultures, backgrounds and different languages. I believe that together we were able to take it to another level viewing this part of the world as a whole - the Barents region - with our pros and cons, challenges and opportunities and coming together with the creation of an Empowering School eHealth Model useful in the Barents region, and beyond.

### **How do you think the pilot schools and other target groups could benefit from the cross-border quality/nature of the project?**

As I mentioned earlier I am certain that the empowerment approach involving the schoolchildren, teachers and parents in the pilot schools makes the results of the

project both useful and easy to implement. One of the great challenges as I see it is the continued support to schoolchildren and teachers by school leaders to make the health promotion activities sustainable. Another challenge, which can be viewed as an extraordinary opportunity, is to use the schoolchildren and teachers who participated in the creation of the health promoting activities in knowledge dissemination. Let the children and teachers teach their peers! If school leaders see this as an opportunity for growth and development they will take the chance to spread the news and knowledge and share the good examples created in the ArctiChildren InNet project to other schools in the municipalities as well as to other municipalities in the north.

### **What were the main achievements and highlights of the project regarding the cross-border cooperation with the partners? And how do you personally see the future of eHealth and eLearning?**

First of all ICT is here to stay! It's just a matter of handling the negative effects of social media, computers, iPads and mobile phones and find ways to use these modes of technology as tools to increase health and learning. According to a recent report by the Swedish Research Council there is a necessity of research that exceeds the boundaries of a scientific discipline and seeks knowledge along with young people, to contribute to a better understanding of health promotion and learning. That's exactly what we have done! In the ArctiChildren InNet project we had the opportunity to explore the possibilities to use technology in a multidisciplinary team of school staff and researchers to increase health and learning in schoolchildren together with them, their teachers and parents. In other words, we have created practical examples of activities to promote health and learning using empowerment and ICT, which can be found in this publication. We have also conducted research to bring the practical examples to a scientific level – useful research – to share our experiences and knowledge to contribute to public debate in our respective countries as well as to the world-wide scientific community.

### **Final greetings for the project participants?**

I would like to thank the project leaders and participants in all the participating countries from the bottom of my heart. Personally I have got friends for life and professionally I have gained insight in how cultures and societal organizations can at the first glance make us look very different. However, we are all just human beings part of the same human family with similar needs of living, loving and learning. I am convinced that by hooking arms and working together for the greater good we can make a positive difference for the coming generations!

**Catrine Kostenius**

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**ArctiChildren InNet project (2012–2015)** has been a journey of “shared learning” as schoolchildren, teachers, university students, social and health care practitioners and their educators in four Barents countries have learned how to develop new eHealth approaches and strengthen the learning and health connection through multimodalities and ICT applications at schools.

In this publication we present the experiences and results gained during the ArctiChildren InNet “Empowering School eHealth Model in the Barents Region” project. Our greatest hope is that our experiences and the knowledge that we want to share will open eyes and make the reader think about health issues in schools in a new and innovative way.

This publication gives valuable information for the experts who work with schoolchildren and deal with health issues in every day (working) life. Also experts of universities and other organizations who are dealing with eHealth and eLearning issues get useful perspectives for their work.



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