

# 1. Introduction: Yes We Can (Learn from Each Other)

*During the next 10 years about 1.2 billion young 15-to-30-year-olds will be entering the job market and with the means now at our disposal about 300 million will get a job. What will we offer these young, about a billion of them? I think this is one of the greatest challenges if we want to achieve peaceful development and hope for these young.*

*- Martti Ahtisaari (former President of Finland (1994-2000) and Nobel Peace Prize Laureate)*

The demand for better quality teaching and learning and more equitable and efficient education is universal. It has become clear everywhere that the schools we have today will not be able to provide opportunities to learn what is necessary in the future. Indeed, educational systems are facing a twin challenge: how to change schools so that students may learn new types of knowledge and skills required in a knowledge society; and how to make that new learning possible for all young people regardless of their socio-economic conditions. To be successful with these challenges is both a moral and economic imperative for our societies and their leaders. It is a moral obligation because each person's wellbeing and ultimately happiness arises from knowledge, skills and worldviews that good education provides. It is also an economic imperative because the wealth of nations depends as never before on know-how. The aftermath of recent global economic crisis is showing how unemployed young people are becoming reckless to extent that is bringing governments down. Many of these young people lack relevant education and training that would help them to help themselves.

This book is about Finland and how the Finns transformed their educational system from mediocre to one of the models of excellence since the early 1970s. International indicators show that Finland has one of the most educated citizenries in the world, provides equal educational opportunities in an egalitarian manner, and makes efficient use of resources. Finnish education has attracted attention from many international scholars recently. Linda Darling-Hammond writes extensively about it in her book *The Flat World and Education*. Andy Hargreaves and Dennis Shirley chose Finland as an example of a nation that has successfully transformed its education system in their book *The Fourth Way*. A chapter on Finnish education has become an integral part of any international handbook or volume that reports contemporary thinking and practice in the field. International development agencies, consulting firms and media houses refer to Finland as a good model and "a witness" of successful transformation of

public education system.<sup>1</sup> Monographs on Finnish school and teachers have been published in China, Korea, Japan, France and Germany, just to mention a view. This book is the first comprehensive description of educational change in Finland written by a native Finn from an international perspective.

In leading the way toward educational reform in Finland in the early 1990s, Dr. Vilho Hirvi, then Director General of the National Board of Education, said that "an educated nation cannot be created by force". He acknowledged that teachers and students must be heard and that the way forward called for active collaboration. In Finland teachers and students were insisting on more flexibility and freedom in deciding how to design instruction and what to study and when. "We are creating a new culture of education and there is no way back," Hirvi said to his staff at the National Board of Education. Basic to this new culture is the cultivation of trust between education authorities and schools. Such trust, as we then witnessed, made reform not only sustainable but also owned by teachers.

## *Northern Exposure*

At the beginning of the 1990s, education in Finland was nothing special in international terms. All young Finns attended school regularly, the school network was wide and dense, secondary education was an open option for all Finns, and higher education was an option for an increasing number of upper secondary school graduates. However, the performance of Finnish students on international assessments was close to overall averages, except in reading, where Finnish students did better than most of their peers in other countries. The unexpected and jarring recession of that time period brought Finland to the edge of a financial breakdown. Bold and immediate measures were necessary to fix national fiscal imbalances and revive the foreign trade that disappeared with the collapse of the Soviet Union in 1990. Nokia, the main global industrial brand of Finland, became a critical engine in boosting Finland from the country's biggest economic dip since the Second World War. Another

Finnish brand, *Peruskoulu*, or the 9-year comprehensive basic school, was the other key player in this turnaround of the Finnish economy and society. Interestingly, both Nokia and the Finnish public educational system go back to the same time period in Finnish history: the golden years of building the Finnish national identity in the mid-19<sup>th</sup> century, as will be described in Chapter 5 of this book.

There are countries around the world where education leaders find their own educational systems in a situation very similar to that of Finland in 1990. The global economic downturn is hitting many schools, universities and entire education systems hard. Take Ireland, Greece, England or United States. Student achievement is not anywhere close to what it should be in knowledge-based economies where productivity and innovation are necessary conditions for competitiveness. Students seem to find teaching offered in schools and universities increasingly boring and irrelevant to their needs in a rapidly changing world. The story of educational change in Finland in this book brings hope to all those worried about whether improving their educational systems is at all possible. It also provides food for thought to those who look for how to adjust education policies to the realities of economic recovery. The lessons from Finland should be refreshing because they depart from the ideas commonly presented in books on educational development. Moreover, these lessons show that systemic improvement is indeed possible if only policies and strategies are designed in smart and sustainable ways.

While these lessons hold great promise, they call for patience. In this age of immediate results, education requires a different mindset. Reforming schools is a complex and slow process. To rush this process is to ruin it. The story of Finland's educational transformation makes this clear. Steps must be grounded in research and implemented in collaboration by academics, policymakers, principals, and teachers.

This book is about how such a process evolved in Finland since the Second World War. It is the first book to tell the story of how Finland created a system praised as much for its equity as its high quality. Many of the world's great newspapers and broadcast services—*The New York Times*, *The Washington Post*, *The Times of London*, *Le Monde*, *El Pais*, *National Public Radio*, *NBC*, *Deutsche Welle*, and *BBC*—have covered this Finnish educational miracle. Thousands of official delegations have visited Finnish authorities, schools, and communities to learn about what drives

excellence in education. This story, however, has yet to receive the book-length treatment necessary for enumerating, linking, and explaining the many players, institutions, and impersonal forces involved.

My approach in this book is both personal and academic. It is personal because of my intimate relationship with education in Finland. I was born and raised in a village primary school in northern Finland, as both of my parents were teachers at that school. Most of my childhood memories are in one way or another linked to school. I had the privilege of looking beyond the secrets of the classroom after everybody else was gone and I found that world rich. It was my home and an enchanted one. It is perhaps no surprise then that I went on to become a teacher. My first position was at a junior high school in Helsinki. I taught mathematics and physics there for 7 years. Later I spent enough time in educational administration and in university teacher education to understand the difference between education in and out of school. As a policy analyst for the Organization for Economic Cooperation and Development (OECD), an education specialist for the World Bank, and an expert of the European Commission I gained the global perspective necessary for a deeper appreciation of Finland's distinct place in education.

As a representative of Finland in these different capacities, I have also been forced to develop a keener understanding of what distinguishes Finnish methods by answering questions from audiences and media around the world. Since the beginning of 2000, I have given more than 250 keynote addresses and 50 interviews about the Finnish educational system around the world. My estimate is that this means talking to some 50,000 people directly and many more through published stories and news. Numerous conversations with people who are interested in education like I am have greatly advanced writing this book. Following are some of the questions that have been asked over and over again: "What is the secret of Finnish educational success?", "How do you get best young people into teaching in Finland?", "How much does lack of ethnic diversity have to do with good educational performance there?", "How do you know that all schools are doing what they should when you don't test students or inspect teachers?", and "How did Finland save its education system during the economic downturn in the 1990s?" For such questions and also critical remarks related to my thinking, I am grateful. But for them, I would never have been able to hone my assessment of Finnish differences.

This book also has an academic orientation because it relies on research that I have been part of over the last two decades as an author, co-author, or critic. This book is thus not a typical monograph written as a result of a research project or an event. It is a synthesis of a decade of policy analysis, experience as a teacher and administrator, and dialogue with thousands of educators around the world. I have been privileged to be able to spend enough time outside of Finland and work with number of foreign governments to better understand the true nature and peculiarity of Finnish education and the life in Finnish schools.

#### *Why Finland is an Interesting Example?*

Public education systems are in crisis in many parts of the world. The United States, England, Sweden, Norway and France, just to mention a few, are among those where public education is increasingly challenged because of endemic failure to provide adequate learning opportunities to all children. Tough solutions are not uncommon in these countries: tightening control over schools, stronger accountability for student performance, firing bad teachers and closing down schools that are in trouble are part of the recipe to fix failing education systems. This book does not suggest that tougher competition, more data, abolishing teacher unions, opening more charter schools or employing corporate world management models in education system would be a solution. Quite the opposite. The main message of this book is that there is another way to improve education systems. This includes improving teaching force, limiting student testing to necessary minimum, placing responsibility before accountability and handing over school and district level leadership to education professionals. These are common education policy themes in some of the high performing countries – among them Finland – in the 2009 International Programme for Student Assessment (PISA) of the OECD.<sup>ii</sup> The chapters of this book offer the following five reasons why Finland is an interesting and relevant source of ideas for other nations that are looking for ways to improve their education systems.

One, Finland is a unique educational system because it has progressed from mediocre to one of the models of contemporary educational systems and “sustained improvers” over the past three decades. In fact, Finland is special also because it has been able to create an educational system where students learn well and that is equitable in terms of small variation of student performance between schools in different parts of country at the same time. This internationally rare

status has been achieved using reasonable financial resources and less effort than others.

Two, because of this proven steady progress, Finland demonstrates that there is another way to build a well-performing educational system using solutions that differ from the market-driven education policies. The Finnish way of change, as described by Andy Hargreaves and Dennis Shirley in *The Fourth Way*, is that of trust, true professionalism and shared responsibility.<sup>iii</sup> Indeed, Finland is an example of a nation that lacks school inspection, standardized curriculum and high-stakes student assessments, test-based accountability, and race-to-the-top mentality in educational change.

Three, as a consequence, Finland can offer some alternative ways to think about solutions to existing chronic educational problems in the United States, Canada, and England (such as high-school drop-out, early teacher attrition and inadequate special education), and emerging needs to reform educational systems elsewhere (such as engaging students in learning, attracting young talents into teaching and establishing holistic public sector policies). The Finnish approach to reduce early school-leavers, enhance teacher professionalism, implement intelligent accountability and student assessment in schools, and improve learning in mathematics, science and literacy are all examples of educational achievements that Finland can offer inspiration to others.

Four, Finland is an international high performer also in commerce, technology, sustainable development, good governance, and prosperity. It raises interesting questions concerning interdependencies between education and other sectors in society. It appears that other public policy sectors, such as health and employment, seem to play a role also in long-term educational development and change. This holds true in Finland, as well, regarding income parity, social mobility, and trust within Finnish society, as the chapters that follow will show. This book also explains how there are interesting parallel evolutions between the Finnish school and the iconic Finnish telecommunication giant Nokia.

Finally, we should listen to the story of Finland because it gives hope to those who are losing their faith in public education and whether it can be changed. This book reveals that the transformation of educational systems is possible but takes time, patience, and determination. The Finnish story is particularly interesting because some of the key policies and changes were introduced during the worst

economic crisis that Finland has experienced after the 1930s. It suggests that a crisis can spark the survival spirit that leads to better solutions to acute problems than ‘normal situation’ would. This book speaks against those who believe that the best way to solve chronic problems in many education systems is to hand over schools from school boards to those who run them more effectively by charters or other means of privatization. Although there are limits to the ideas that can be transferred from Finland to other nations, certain basic lessons may have general value for others. Building on teachers, securing relaxed and fear-free learning for students, and gradually enhancing trust within educational systems may be some of the principles that can be applied in other educational systems, as well.

As this book illustrates, there is no single reason why any educational system succeeds or fails. Instead, there is a network of interrelated factors – educational, political and cultural – that function differently in different situations. I would, however, like to cite three important elements of Finnish educational policies since the early 1970s that appear to transcend cultures. The first one is an inspiring vision of what good public education should be. Finland has been particularly committed to building a good publicly financed and locally governed basic school for every child. This common educational goal became so deeply rooted in politics and public services in Finland that it survived opposing political governments and ministries unharmed and intact. Since the introduction of *peruskoulu* in early 1970s, there have been 20 governments and nearly 30 different ministers of education in charge of educational reforms in Finland. So strong has this commitment to having common basic school for all been that some call it the Finnish Dream. This hints to other nations whose intention is educational transformation that it is better to have a dream of your own than rent one from others.

The second aspect of educational change that deserves attention when reading this book is the way Finland has treated externally offered advice *vis-à-vis* its own educational heritage in educational reforms. Much of the inspiration in building independent Finland since 1917 has come from its neighbors, especially from Sweden. The welfare state model, health care system, and basic education are good examples of such borrowed ideas from our western neighbor. Later, Finnish education policies were also influenced by guidance by supranational institutions, especially the OECD (which Finland

joined in 1969) and the European Union (which Finland joined in 1995). In this book, I launch an argument that despite international influence and borrowing educational ideas from others, Finland has in the end created its own way to build the educational system that exists today. I call this the “Finnish Way” because it is different from the global educational reform movement that has dominated educational policies in most parts of the world during the last two decades. The Finnish Way of change preserves the best of traditions and present good practices, and combines it with innovations found from others. Cultivating trust, enhancing autonomy, and tolerating diversities are just some of the examples of the change ideas that are found in Finnish schools today. Many pedagogical ideas and educational innovations are initially imported from other countries, often from North America or England. These include curriculum models (from England, California, and Ontario), cooperative learning (from the United States and Israel), portfolio assessment (from the United States), teaching of science and mathematics (from England, the United States, and Australia), and peer-assisted leadership (from Canada), just to mention a few. At the same time the Finnish Dream of education is ‘made in Finland’ and therefore also owned by Finns rather than rented from others.

The third aspect of change is a systematic development of respectful and interesting working conditions for teachers and leaders in Finnish schools. This book raises an important question that is repeated in almost any situation when whole-system educational reforms are discussed: How to get the best young people into teaching? Experience from Finland, as illustrated in Chapter 4, suggests that it is not enough to establish world-class teacher education programs or pay teachers well. Finland has built world-class teacher education programs. And Finland pays its teachers well. But the true Finnish difference may be that teachers in Finland may exercise their professional knowledge and judgment both widely and freely. They control curriculum, student assessment, school improvement, and community involvement. Much as teachers around the world enter the profession with a mission to build community and transmit culture, Finnish teachers in contrast to their peers in so many countries have the latitude and power to follow through.

#### *Model for Others?*

Can Finland be a model for educational change in other countries? Many are fascinated by the fact that

Finland has been able to transform its educational system from something elitist, unknown, and inefficient into a paragon of equity and efficiency.<sup>iv</sup> Finland is also a rare case among the OECD countries that have been able to improve its educational performance as measured by international indicators and student achievement tests. Furthermore, many foreign visitors have been particularly surprised to find out that teaching has become the number one profession among young Finns – above medicine and law – and that primary teacher education in Finnish universities is one of the most competitive choices of study. All these aspects of the educational system are explored further in this book.

There are, however, those who doubt that Finland has much relevance to other educational systems because of its special characteristics. The most commonly presented argument is that since Finland is so exceptional, it hardly provides anything meaningful to the United States, Canada, Australia, France or other much larger nations, or that it is “... too different to serve as models for whole-system reform for North America as a whole,” as Michael Fullan writes.<sup>v</sup> Two points are often emphasized when the relevance of Finland as a model for educational change is considered. First, Finland is culturally and ethnically rather homogeneous and thus too far apart from United States, Canada, England or France, for example. Fair enough. But the same holds for Norway, Poland, or even Denmark. The proportion of foreign-born citizens in Finland was 4.1% in 2008 and the number of non-Finnish speaking citizens, about 10%.<sup>vi</sup> Finland is tri-lingual country with Swedish and Sami as the two other official languages. The largest language and ethnic minorities are Russian, Estonian and Somali. The diversification of Finnish society since the mid-1990s has been very rapid. When I began my teaching career in Helsinki in mid-1980s, it was rare to have anybody in my classroom that looked or sounded different than others. The number of foreign-born citizens in Finland has more than doubled during the first decade of the 21<sup>st</sup> century. Finland is not that homogeneous anymore but, of course, it doesn't compare to the United States or Canada as a multi-cultural nation as far as the ethnic diversities are concerned.

Second, Finland is claimed to be smallish and therefore not a good model for whole-system reform for North America. This is a more tricky argument to defend. When the size factor in educational reforms is considered, it is necessary to note that in many federal nations' states, provinces or

regions are to a large extent autonomous in terms of educational management and running their schools. This is the case in the United States, Canada, Australia, and Germany, for example. Population in Finland is today 5.5 million. It is about the population of Minnesota in the United States or Victoria in Australia, and just slightly more than the size of Alberta in Canada or Nord-Pas de Calais in France. Indeed, about 30 states of the US have the population close to or less than Finland. These include the states of Maryland, Colorado, Oregon, and Connecticut. The states of Washington, Indiana, and Massachusetts are also smallish and close to Finland in size. Only New South Wales in Australia has a slightly larger population than Finland; all other states are smaller. In France, Île-de-France is the only region that surpasses Finland in size. In Canada, only Ontario is significantly larger in population (and land area) than Finland; all other provinces are similar in size. If these jurisdictions have freedom to set their own educational policies and conduct reforms as they think is best, then experiences from an educational system of the size of Finland should be particularly interesting and relevant to them. France is the only country mentioned above that employs centralized educational management and therefore the French education policy-makers could argue irrelevance of smaller education systems as models for their reforms.

Although Finland has persistently outperformed other nations yet its achievements have been downplayed in numerous accounts of recommended policy. In a recent report by McKinsey and Company<sup>vii</sup>, for example, Finland is not even listed as a country of “sustained improver”. The consequence is that policy makers in many contexts will not consider Finnish strategies as they develop their repertoire of school improvement practices. Perhaps it is because Finnish experience shows that consistent focus on equity and cooperation — not choice and competition — can lead to an education system where all children learn well. Paying teachers based on students' test scores or converting public schools into private ones (through charters or other means) are ideas that have no place in the Finnish repertoire for educational improvement.

We are all different, and Finland is not an exemption. Size of its population and relative homogeneity of Finnish society obviously make many things in setting education policies and implementing reforms easier than in larger, more diverse jurisdictions. But these factors alone don't explain all that progress and achievements in education that are

described in this book. Finland is, however, very different to many countries in terms of its values, cultural determinants and social cohesion within society. Fairness, honesty and social justice are deeply rooted in Finnish way of life. People have a strong sense of shared responsibility not only their own lives but also those of others. Well-being of children starts before one is born and continues until adulthood. Day care is a right of all children under 3 years of age and public health service is easily accessible to all during childhood. Education in Finland is widely seen as public good and is therefore protected as a basic human right to all in the Constitution. Principles such as “small is beautiful”, “don’t talk unless you have something to say” and “less is more” are typical descriptors of good life and everyday culture in Finland.

In this book I describe how Finns have built a functional, sustainable and just country with equitable public education system by doing things in its own way. The Country Brand Delegation that was chaired by ex-CEO of Nokia, Jorma Ollila, wrote in 2010 that “in Finland, people do not aspire to do everything the same way as the others, to dress or to live like others. Rather than the ‘done thing’, Finns do what they think is the rational thing to do”<sup>viii</sup>. Intense individuality of Finns blended with low hierarchy and traditional willingness to work with others has opened access to endless creative potential. Inspiration and vision to create society with education system that is good and accessible to all was drawn from this pool of creative potential.

Finally, there are also those who doubt that international comparisons are relevant or reliable in what they claim to do. One point of view is that academic achievement tests, such as the Programme for International Student Assessment (PISA) or Trends in International Mathematics and Science Study (TIMSS), focus on areas too narrow to capture whole spectrum of school education and thus ignore social skills, moral development, creativity or digital literacy as important outcomes of public education for all.<sup>ix</sup> There is also a growing concern of how this is influencing educational policies and endorsing the culture of “governing by numbers.”<sup>x</sup> Another skeptical group simply argues that chosen measurement methodologies in current international tests favor Finland because they better match with the culture of teaching of Finnish schools. These include both Finnish and foreign scientists and experts.<sup>xi</sup> Recently, Harvard professor Howard Gardner warned his audience in Finland that it is wise to treat these current

student assessment studies with caution.<sup>xii</sup> He contended that results in the studies like these always depend on the subjects of study, i.e. selected methodologies and overall point of views.

Data for this book are not from only one source, nor does this book claim that educational excellence could be justified by any one international study. Evidence is drawn from available international databases, such as PISA and TIMSS, global education indicators, and versatile official statistics in Finland.

#### *Plan of the Book*

This book draws from the following ten notions that are explained in detail on the pages of this volume:

- Finland has an education system in which young people learn well and performance differences between schools are small – and all that with reasonable cost and human effort.
- This has not always been so.
- Teaching is a prestigious profession and many students aspire to be teachers.
- Therefore, the Finns have probably the most competitive teacher education system in the world.
- As a consequence, teachers in Finland have a great deal of professional autonomy and access to purposeful professional development throughout their careers.
- Those who are lucky enough to become teachers normally are teachers for life.
- Almost half of the 16-year-olds when they leave comprehensive school have been in engaged in some sort of special education, personalized help or individual guidance.
- In Finland teachers teach less and students spend less time in studying both in and out of school than their peers in other countries.
- Finnish schools lack the standardized testing, test-preparation and private tutoring of the United States and much of the world.
- All of these factors which are behind the Finnish success seem to be the opposite of what is taking place in the United States and much of the rest of the world where competition, test-based accountability, standardization and privatization seem to dominate.

After this introduction chapter this book has five chapters. Chapter 2 explains both the political and historical realities after the Second World War and how they shaped the way towards common basic school for all by the end of the 1960s. When telling the story of educational change in Finland to scores of foreign visitors, I have learned that is important to go

back further in time than the birth of *peruskoulu* in 1970. This chapter illustrates the process of transforming the old school system that divided pupils into two tracks and relied heavily on privately governed and co-financed grammar schools into a comprehensive, publicly managed and funded structure of education. It also outlines the main features of post-compulsory education that emerged soon after implementing the *peruskoulu* reform in late 1970s. The main characteristics of the iconic Finnish Matriculation Examination as a school-leaving test for general upper secondary education in Finland are described in this Chapter.

Chapter 3 tackles a fundamental question: Was Finland a high-performer in education also in the past? The answer provided in this chapter is expected – no. It immediately invites a corollary: What constitutes a good educational system and which educational reforms have made such an impressive progress possible in Finland? The core of this chapter is an insight that the Finnish educational success in international comparisons can, at least to some extent, be understood by paradoxes. This can be crystallized by a simple principle in educational reform: Less is more. Chapter 3 provides evidence-based examples of how this paradoxical idea appears in the Finnish educational system today.

Chapter 4 is about teachers and teacher education in Finland. It examines the crucial role that teachers have in Finland and describes the main features of the teaching profession, teacher education, and teacher responsibilities in Finland. By relying on the Finnish experience, this chapter suggests that whereas high-quality university-based teacher education and continuous professional development are necessary conditions for attracting the most talented and committed young people into teaching, they are not

sufficient alone. Teachers have to be provided with a professional working environment so that they feel dignified and are able to fulfill their moral purposes in schools. This chapter also looks at some of the future prospects of teaching and teacher education in Finland.

Since Finland's amazing recovery from a grave economic recession in the early 1990s – and more recently from the global financial crisis of 2008 – many have spoken about the Finnish model of building an inclusive information society and competitive knowledge economy.<sup>xiii</sup> Chapter 5 illustrates some interdependencies between Finnish educational policy and other public sector policies. Furthermore, it suggests that progress in the educational sector has happened in tandem with changes in government that have improved economic competitiveness, transparency, and welfare policy. For a concrete example of this interplay between education and business development in Finland, this chapter traces the parallel evolution of Nokia and Finnish schooling.

Finally, Chapter 6 asks a question that is, surprisingly, not often asked of Finns by their visitors: What is the Finnish future of schooling? Being in global limelight and an educational model for others has absorbed energy from Finns themselves when they have explained to scores of visitors the reasons behind educational success in their country. This Chapter summarizes the main elements of successful educational change but concludes that being at the centre has prevented Finns from thinking about what kind of education is needed in the future. It closes in a discussion of the necessity to change although the system is praised for its excellence and seems to be working well.

<sup>i</sup> World Bank and OECD have used Finland as an example in Aho, Pitkänen & Sahlberg (2006) and OECD (2010c). McKinsey Company refers to Finland as a global benchmark of good practice in Barber & Mourshed (2007) and Auguste, Kihn & Miller (2010).

<sup>ii</sup> OECD (2010b); (2010c).

<sup>iii</sup> Hargeraves & Shirley (2009).

<sup>iv</sup> Schleicher (2006).

<sup>v</sup> Fullan (2010), p. xiv.

<sup>vi</sup> Statistics Finland at [www.stat.fi](http://www.stat.fi); <http://www.oecd.org/dataoecd/7/15/45627840.pdf>.

<sup>vii</sup> Mourshed, Chijioke & Barber (2010).

<sup>viii</sup> Ministry of Foreign Affairs (2010), p. 59.

<sup>ix</sup> See Chapter 2 for references to this argument.

<sup>x</sup> Grek (2009).

<sup>xi</sup> There was public debate in Finnish media soon after the first OECD PISA results were published. Several members of Finnish academic community rejected the results by arguing that the used tests don't measure 'pure' mathematics or physics but rather some forms of common everyday knowledge that is irrelevant for further studies in these subjects.

<sup>xii</sup> Howard Gardner visited Finland in May 2010 and his interview was published in Helsingin Sanomat on 28. May, 2010 (p. B9).

<sup>xiii</sup> Castells & Himanen (2002); Routti & Ylä-Anttila (2006); Saari (2006).