Finnish Early Childhood Educators and Sustainable Development

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Abstract

The aim of this study was to find out what Finnish early childhood educators (n = 145) value on sustainability and how they assess the promotion of sustainability in their daily lives. They also wrote 495 comments about barriers to sustainable lifestyle. The data were analyzed with quantitative and qualitative methods. According to the results, the most important elements of sustainability were (a) supporting of communality (including intergenerational link and trust); (b) social responsibility of the consumer; and (c) recycling, composting and taking care of hazardous waste. There was a statistically significant difference between all of the valued elements and the actual implementation of them. The main barriers to sustainable lifestyle were lack of time and information, the higher cost of sustainable choices, and the inconvenience of the sustainable way of life. The tendency to transfer one's own responsibility to government, to the industry, or to the housing company was identified. A sense of agency is a core skill to be learned on a winding road towards a sustainable society.

Keywords: early childhood education, sustainable development, sustainability, responsibility

1. Early Childhood Education and a Need of Sustainable Development

In Finland, Early Childhood Education and Care (ECEC) was governed by social services, but it is a part of Ministry of Education and Culture from the beginning of year 2013. Policy definition about ECEC has been done at government level, by the Ministry of Social Affairs and Health (MSAH) as well as the key principles and guidelines of publicly provided and supervised ECEC. The guideline's aim is to further the development of the content and quality of ECEC throughout the entire service and support system. ECEC is a service for children from 1 to 6 years, and the family. The principle underlying pre-primary, basic and upper secondary education is to guarantee basic educational security for all, irrespective of their place of residence, language and economic standing. A Finnish child usually starts schooling at the age of seven and the nine-year basic schooling is free for all pupils. Preprimary education has also previously been guided by the Ministry of Education and Culture (Stakes, 2005).

ECEC principles have four perspectives: society, children, parents and staff. The early childhood education in Finland is often mentioned of its high quality and well trained teachers and caregivers. On the other hand, it has been criticized by the differences in quality between individual adults and the lack of legislative guidance of the quality of education (e.g. Kalliala, 2008, 2011). The care and education staff operating at day-care centers includes kindergarten teachers, special kindergarten teachers, social educators or bachelors of social sciences, bachelors and masters of education, practical children's nurses, kindergarten practical nurses and practical nurses (Ministry of Social Affairs and Health 2001). In Finland, enrolment rate in formal care for the under three years old children was 28.6 percent, at the age of three 46.1 percent, and at the age of five 62.6 percent in 2008-2009 (Organization for Economic Cooperation and Development [OECD], 2012).

The importance of the years from birth to six have been recognized as crucial learning years for child development, however this recognition has not, as yet, been carried through to Education for Sustainable Development (Tilbury et al., 2005). Research confirms the importance of the early years to positively influence children in a long-lasting way. The value orientations of children are largely determined by the time they reach the age of formal schooling (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2000; OECD, 2012). So there is a strong understanding that also Educating for Sustainable Development (ESD) should begin very early in life. In the early childhood period children develop their basic values, attitudes, skills,

behaviors and habits, which will have impact on them for long after. Therefore, the early childhood educators have an enormous potential in fostering values, attitudes, skills and behaviors that support sustainable development – such as cultural diversity, gender equality, democracy, and use of natural resources (Chawla, 1998; Davis & Gibson, 2006; Wells & Lekies, 2006). They are agents of change in a society.

Early childhood field has been rather slow to take up the challenge of sustainability, despite of its potentially significant role. Therefore, a new dimension has been added to early childhood education curriculum. This is Early Childhood Education for Sustainable development (ECEfS), an emerging national and international field (UNESCO, 2005). ECEfS recognizes that young children have capacities to be active agents of change now, as well as in the future. This is a great challenge for the educators of early childhood. According to Fullan (2003), there are actually just a small number of actions that can help an organization create deep-level change, and thus there is a need to embed sustainability as a core element of its practices. These actions for deep-level change have been launched in the early childhood educational sector for example in the city of Espoo, where this study was conducted. The field of early childhood education is recognizing the relevance of sustainable development to young children and to their early education (Samuelsson & Kaga, 2010). However, research in ECEfS is almost non-existent (Davis, 2009).

Sustainable development (sustainability) represents a holistic progress, which is in the long term ecologically, socially, and economically sustainable (Bettencourta & Kaurc, 2011; Ehrenfeldt, 2008; Senge et al., 2008). Sustainability can be understood as a process, target or value (Haughton, 1999; Salonen, 2010). It is an idea of everlasting good life for all on the Earth. This means that 'present and future persons have the same right to find, on the average, equal opportunities for realizing their concepts of a good human life' (Ott, 2003). In the other words, sustainable development maintains the current human capabilities and opportunities and supports their expansion so that future generations will have the same capabilities and freedom as we do – or even more (Sen, 2009).

Humanity has never been moving faster nor further from sustainability than it is now (Caldeira, 2012; Ehrlich et al., 2012). The current ecological challenge is that we might overstep planetary boundaries (Rockström et al., 2009) while the social challenge is that human inequality is growing everywhere (The Royal Society, 2012; UNDP, 2011). Thus, we struggle with a great question: How to help people and societies ensure that future generations will be proud of us?

In this research we focus on the sustainability-promoting thinking and behavior of Finnish early childhood educators from the city of Espoo. The city of Espoo was the first Finnish city to be elected as a member of the UN university´s RCE (Regional Centre of Expertise on Education for Sustainable Development) network on sustainable development from the beginning of the year 2011. The global RCE network consists of local RCE-networks, dedicated to promoting the goals of the UN Decade of Education for Sustainable Development (2005-2014).

The overall aim of education is a civilized human being, who takes care as well of himself and his culture, also of the globe as whole (Gert, 2004; Küng, 1998; Shafer-Landau, 2010). Civilized people are able to combine social and ecological information about the wide range of world situations. They display ability to imagine the predicaments of many types of people and the future generations, and they have ability to think reflectively (Nussbaum, 2010). They also understand a value of the renewed sense of community, cooperative relationships and generosity (Rees, 2010). The aim of Education for Sustainable Development (ESD) is '…to empower citizens to act for positive environmental and social change by giving people knowledge and skills to help them find new solutions to their social, economic and environmental issues' (Otieno, 2007).

2. Theoretical Framework of Strong Sustainability

From the individual citizen point of view, sustainability can be examined through the values and behaviors connected with quality and quantity of consuming which is linked to nourishment, housing, and mobility (Tukker, 2006). Extinction of the several plants and animals, climate change, and the problems with natural life-support systems are signs of *ecologically unsustainable development* (Millenium Ecosystem Assissment, 2005; Rockström et al., 2009; Sale, 2011).

The foundation of *social sustainability* is the Universal Declaration of Human Rights. Social sustainability emphasizes human dignity and solidarity. It leads to examine what is common for the humankind. Social sustainability promotes inclusion, participation, social identity, and social competence (Boström, 2012; Hämäläinen, 2003; Littig & Grießler, 2005; Murphy, 2012). Social sustainability creates and supports social cohesion which might help to equally share the benefits and disadvantages of development between developing

and developed countries and every people. This is important because 'people are the instruments and beneficiaries, as well as the victims, of all development activities' (Serageldin & Steer, 1994).

In a society, *economic sustainability* is manifested by effective use of the raw material, energy efficiency of the production process, and manufacturing of long-lasting and recyclable products. On national level the increase of economic sustainability can be realized as thriving small scale entrepreneurship and locally owned companies, as well as increase in the companies that are pioneers of sustainable production and services. A transition from industrial society towards service society is also an example of economic sustainability (Salonen, 2010.)

The concept of strong sustainability considers the ecological, social and economic aspects systemically, paying attention to the correlation between them (Baker, 2006; Giddings et al., 2002; Ott, 2003). It assumes that our planet is not a collection of discrete phenomena and events, but a system of interdependence in which ecosystems, human society and economy are dependent on each other (Figure 1). Systems thinking focus on causal relationships between elements. It helps us to combine ecological, social and economic point of view. Human beings are both actors of sustainable development and a part of the fragile planetary entity.
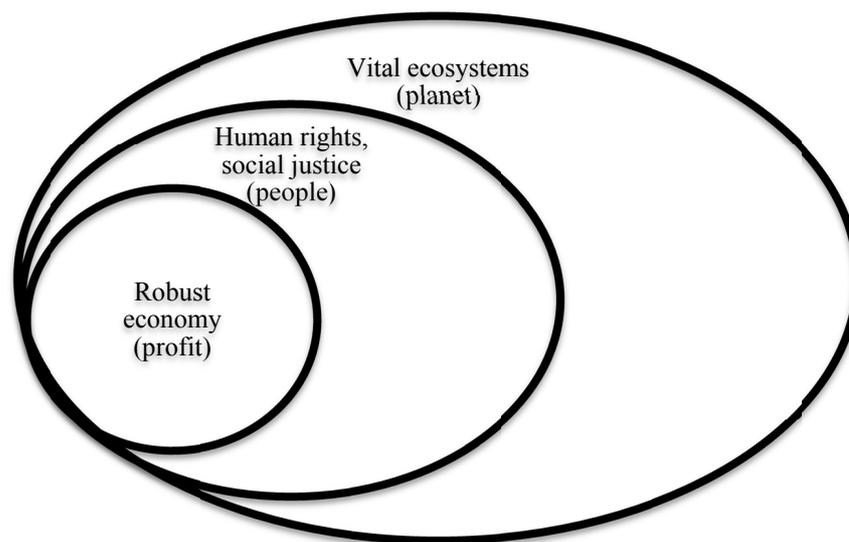

Figure 1. The integration of ecological, social and economic aspect in the concept of strong sustainability

Sticking within the planetary boundaries is the most important thing for the humankind in the long run. Humans are fully dependent on life-support systems, which take care of provisioning, regulating and supporting of absolutely necessary benefits such as fruitful soil, crop pollination, purification of water, and control of both climate and disease (Millenium Ecosystem Assessment, 2005). If the natural life-support systems collapse, also the foundation of the human subsistence breaks down. In addition, welfare of the human society (e.g. equality, democracy, cultural diversity) defines the welfare of the economy. Thus, both human life and economy are fully dependent on healthy ecosystems on the planet Earth. This is the way to build an economy which is robust in the long term (Daly, 2010; Daly & Cobb, 1989; Hahnel, 2005; Hediger, 1999; Nusbaum, 2010). Hence, the concept of strong sustainability is questioning the way how mainstream politicians often argue that ever growing economy is the only way to enable wellbeing of human society and taking care of the life-support ecosystems.

Sustainability is about what we value. Values can be defined as abstractions, which guide our choices. Valuations are personal perceptions of the significance of the matter considering if it's good or bad. Valuations can be compared to desires, while values are attached with truth and fact (Airaksinen, 1994). Based on Kluckhohn's (1954) definition value is 'explicit or implicit, characteristic perception of the desirable for an individual or typical for a group which effect the choices made on the means and targets of life.' The definition of values as beliefs which determines the desirable behaviors or aims enables dividing values into instrumental values and terminal values. Instrumental values are the means for the actualization of the terminal values (Rokeach, 1973, 1976).

Our morals protect what we value. Morals guide as in how we balance the things that we value and what we implement in daily life. Responsibility demands us, for example, to invest the revenues from the use of

non-renewables into research and development toward renewable resources, and to use only as much fossil fuels as the sink capacity of the global climate system allows (Ott, 2003). Holistic consideration is based on the ideal of freedom and responsibility. Systems thinking helps us to understand that our behavior has impact on other people, nature and economy on local and global levels. Frames of justice includes people who are a part of the causal chains of producing and consuming (Wenz, 1988), for instance, people who produce raw materials for our mobile phones and computers, or farmers who grow our food. The sphere of responsibility covers people and culture, animals and other organisms, plants, and life-supporting ecosystems now and in the future (Salonen & Åhlberg, 2012). There is no sustainability without responsibility. According to Bauman (2008) the challenge is that ethical demands have often been sacrificed to the economic growth especially in high-consumption societies.

Fundamentally, sustainability is an existential challenge that involves all people in the global community. Therefore, sustainable development requires not just altering behavior patterns in relation to the environment and society, but changing the broader systems that shape human behavior (Haughton, 1999). This requires changes in wellbeing paradigms from accumulation of material goods towards harmony, coherence and consciousness (Salonen & Åhlberg, 2013a). Education has a great role in this societal change because it deals with the processes of human growth that tie people to the systems, institutions and communities that are important to their well-being (Hämäläinen, 2003). The early childhood educators pass on their values and attitudes to the children consciously and subconsciously. They are pedagogical operators and agents of change in the society. According to Arlemalm-Hagser and Sandberg (2011) sustainable development was seen as a holistic approach, an environmental issue or a democratic issue by Swedish early childhood educators.

In Finland, Cantell and Larna (2006) pointed out, that most of the youth showed interest on environmental issues, but there was a significant difference between the positive attitudes and the non-existent actions of environmental responsibility (Cantell & Larna, 2006). Conscious understanding of the significance one's beliefs, values, attitudes and experiences are crucial for the change of our actions (Kiiskinen, 2001). The promotion of active operating should be the focus of ESD. Individuals can make a difference by acting responsively in their everyday life (Cantell, 2005).

In this study sustainability-promoting actions are evaluated as presented in Table 1 based on Marshall and Toffel (2005), Kidder (1995), and Dobbelt (2008). This means that that behavior, consumption habits, or lifestyle that limits the opportunities of humans in the long run is unsustainable. Therefore, daily choices that reduce life expectancy, cause species extinction or violate human rights are against the idea of sustainability. Opposite of this, beneficial actions maintain diverse life, social justice and robust economy (see also Barry, 2002; Bauman, 2008; Ehrenfeldt, 2008; Hediger, 1999; Ott, 2003).

Table 1. Strong sustainability vs. weak sustainability

Strong sustainability	Weak sustainability
long term well-being	short term well-being
well-being of community	well-being of individual
local products and services	global products and services
clean energy	fossil energy
use of services	owning goods
non-toxic	toxic
cradle-to-cradle	cradle-to-grave

In order to ensure freedom and capability of future generations, focusing on *long term well-being* is more valuable than looking for short term benefits (Ehrenfeldt, 2008; Salonen, 2011; Senge et al., 2008). Human life is supported by relationships and trust of other people around. The marketization of society, however, has made each of us more competitive. This has reduced the attractiveness of cooperation and sharing (Marglin, 2008). Community brings individuals together in united awareness and feeling. Together they share time, energy and information. Therefore *well-being of community* is, in the long run, more important than well-being of an individual person (Dobbelt, 2008).

Thriving local economy represents a deep-rooted democracy, in which communities have opportunities to decide matters dealing with their daily life. Local business maintains connections between people and enhances a sense of partnership and cooperation. *Local products and services* strengthen a vitality of the area. Local food, for example, supports local farmers and entrepreneurs, saves energy, and it reduces greenhouse gas emissions. Local business is also more transparent and accountable than global markets (Salonen, 2013). However, local communities cannot produce everything their members need (Hahnel, 2011). Therefore, even the concept of strong sustainability demands us to be non-dogmatic.

78 percent of energy is produced by fossil fuels in the world (Global Energy Assessment, 2012). This will lead to irreversible changes in the Earth (IEA, 2011), because each stage in the life cycle of fossil fuels—extraction, transport, processing, and combustion—generate a waste stream. Irreversible change is undeniable reason to question how we produce our energy. These methods are linked to the ecological integrity, safeguarding of biodiversity, democracy, nonviolence and peaceful co-existence of people. Accelerating emissions promote erosion of land, which is a threat to stable and flourishing societies. Climate change has also strong negative effects on human health and nutrition. Accounting for the damages for societies and the ecosystem services conservatively doubles to triples the price of electricity from coal which is the dominating but most polluting energy source (Ackerman & Stanton, 2011; Epstein et al., 2011; Markandya & Wilkinson, 2007). Switching to *clean energy* is one of the most effective ways towards a sustainable society because Western lifestyle is energy intensive (Global Energy Assessment, 2012). In addition market mechanisms fail to address the accumulation of individual everyday actions into collective social costs, like air pollution and global warming (Levin, 2012). Climate change is one of the biggest challenges of the social justice on Earth (World Bank, 2012).

Global economic development has been based on the growth of production of commodities. Computers, printers, TVs, cars, and mobile phones are sold to every home and every single person. In opposition, the social and environmental responsible local business is associated more and more with the sale of services including sports clubs, gyms and art galleries, as well as maintenance, repair, and rental services. *Use of services* does not highlight the importance of owning and it is less materially-intensive. It also supports local labor intensity more than capital intensity (Salonen, 2013; Salonen & Åhlberg, 2013a).

People, animals, and plants absorb heavy metals and other toxic chemicals from food, water, soil, and air. Elimination of toxins is essential, due to their accumulative nature in the liver, kidneys, and central nervous system and the disruption of these organs. Also micro-organisms in soil and water are sensitive to heavy metals, which negatively affect growth, reproduction, and activity of the organism. However, there are plenty of *non-toxic* and well tested choices available right now (Pepper et al., 1996; UNEP, 2009).

In nature, material and energy flow forever. The circle is based on a *cradle-to-cradle* model. Recycling secures the sufficiency of natural resources, saves energy and decreases emissions from landfills (Ackerman et al., 2008; Gustavsson et al., 2011). From the standpoint of nature, contemporary consumption is a process of transferring natural resources to landfills. In a sustainable society, however, a landfill is a symbol of an incorrect industry process and failed product design (Salonen, 2013). Therefore, sustainable development also means a shift from excessive mining to the cyclical economy. As aiming towards sustainability, scarcity is indication of efficiency that is present in nature. The nature doesn't waste anything, but instead everything circulates. Scarcity reflects a sustainable small planet strategy or spaceship orientation (Boulding, 1966; Lappé, 1978).

3. Material and Methods

In our study, then, the aim was to find out what Finnish early childhood educators value on sustainability and how they assess the promotion of sustainability in their daily lives. The specific research questions were:

(a) Which elements of sustainability are most important for the early childhood educators?

(b) Which elements of sustainability are promoted by the early childhood educators in their everyday lives?

(c) What kind of differences concerning the assessments can be identified in different groups of the early childhood educators?

(d) What kind of barriers do the early childhood educators have to sustainability-promoting behavior?

The data were collected using questionnaire method during spring 2012 by applying a semantic differential technique (Osgood, 1952), which is a popular and simple method for measuring participants' ways of thinking (Fishbein & Ajzen, 2010). The sample consisted of Finnish early childhood educators (n = 145) in Espoo, Finland. Their ages ranged from 20 to 62 years. The median age was 41.2 years.

The measurement instrument balanced variables of ecological, social and economic sustainability. Each of these three aspects of sustainable development consists of five elements, which were evaluated by the participants. The 15 elements were based on the evaluation of the strong and weak sustainability as presented in Table 1, and on the sustainable development strategies such as Agenda 21, a United Nations Environment and Development Programme (UN, 1992), the European Union Strategy for Sustainable Development (Council of the European Union, 2006), Agenda 21 for the Baltic Sea Region (Baltic 21, 1998), Sustainable Development – New Bearings for the Nordic Countries (Nordic Council of Ministers, 2009), and Towards Sustainable Choices – A Nationally and Globally Sustainable Finland (Prime Minister's Office, 2006) as presented in Table 2.

Table 2. Three aspects of sustainable development in the measurement instrument

Ecological	Social	Economic
Saving energy	Maintaining of civil society	Favoring local enterprises
Favoring vegetarian diets	Consumer´s social responsibility	Favoring eco-labeled products
Recycling, composting and taking care of hazardous waste	Supporting of communality, intergenerational link and trust	Life cycle as a criteria of choosing commodities
Use of renewable energy sources	Global poverty reduction	Favoring energy efficient products
Replacing goods and equipment only when broken	Low perceived value of ownership	Use of services instead of ownership of goods

Participants rated 15 elements of sustainable development with a six-step scale (1–7) according to the importance (not important – extremely important) and actual implementation of the element (not at all – always, perfectly) in the participant's everyday lives. The assessments and the background information formed the quantitative data. We calculated the means and the standard deviations of the assessments. We also analyzed differences between different groups with the analysis of variance (ANOVA). We chose these groups due to the results of the previous research (Salonen, 2010) and actual multicultural discussion in Finland. These groups were *the support of non-governmental organizations, age, volunteering* and *the friends living abroad*. We applied Bonferroni adjustment due to multiple testing (Tabachnick & Fidell, 2007).

The respondents were also asked to comment on their assessments. These 495 comments formed the data for the qualitative analysis. The aim of this was to obtain additional research material to interpret how the respondents think about the elements that they rated. The qualitative data consists of words, phrases and paragraphs in which the early childhood educators explained why their values don't meet their actions. The analysis and interpretation are required to bring order and understanding by a material based systematic approach (Silverman, 1993). We used Atlas.ti qualitative data analysis software to store and categorize the comments, electronically code categories, and to generate summary reports.

4. Results

4.1 The Differences between Importance and Implementation

According to *t*-test the gap between ratings of the importance and the implementation of the element was statistically significant in every 15 assessed elements of sustainability. Paired samples statistics are presented in Table 3.

Table 3. Results of the dependent t-tests between importance and implementation of the rated elements from the narrowest gap to the widest

Importance vs. implementation	Importance		Implementation		95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	SD	Mean	SD	Lower	Upper			
Favoring vegetarian diets	4.30	1.77	3.65	1.61	.42442	.87420	5.707	143	.000
Replacing goods and equipment only when broken	6.08	1.05	5.39	1.19	.52030	.86591	7.928	144	.000
Low perceived value of ownership	5.35	1.12	4.31	1.19	.84796	1.23537	10.630	143	.000
Use of services instead of ownership of goods	5.38	1.11	4.16	1.25	1.01766	1.40377	12.399	139	.000
Life cycle as a criteria of choosing commodities	6.28	0.86	4.98	1.19	1.11172	1.50207	13.235	144	.000
Supporting of communality, intergenerational link and trust	6.45	0.88	5.36	1.04	.93388	1.25233	13.570	144	.000
Maintaining of civil society	5.47	1.10	3.95	1.31	1.29450	1.73407	13.622	139	.000
Favoring energy efficient products	5.85	1.15	4.43	1.28	1.21622	1.61831	13.939	138	.000
Saving energy	6.26	0.91	5.00	1.17	1.09078	1.42646	14.822	144	.000
Recycling, composting and taking care of hazardous waste	6.34	0.95	4.94	1.22	1.22424	1.58266	15.479	144	.000
Favoring local enterprises	5.72	1.07	4.17	1.32	1.35568	1.74154	15.867	143	.000
Use of renewable energy sources	5.97	1.14	4.02	1.33	1.70986	2.17747	16.435	141	.000
Favoring eco-labeled products	6.03	0.97	4.66	1.26	1.20711	1.53082	16.718	144	.000
Global poverty reduction	5.66	1.20	3.43	1.25	1.99724	2.46430	18.883	142	.000
Consumer´s social responsibility	6.35	0.86	4.20	1.19	1.94720	2.34447	21.354	143	.000

All of the assessed elements of sustainability were highly valued (all means over 4) by the participants. The most valued elements of sustainability were 'Supporting of communality (including intergenerational link and trust)', (mean 6.5), 'Social responsibility of the consumer' (mean 6.4), and 'Recycling, composting and taking care of hazardous waste' (mean 6.3). The least valued element was 'Favoring vegetarian diets' (mean 4.3).

When assessing the implementation of the elements, the highest actualization grades were given for 'Replacing goods and equipment only when broken' (mean 5.4), 'Supporting of communality (including intergenerational link and trust)' (mean 5.4), and 'A life cycle as a criteria of choosing commodities' (mean 5.0). The implementation of the elements was the lowest on 'Global poverty reduction (mean 3.4).

The largest gap between the valued element and the implementation was in 'Global poverty reduction' and 'Consumer´s social responsibility' (gap 2.2).

4.2 The Differences between the Groups

The following differences were recognized between different groups as examined through the evaluation of sustainability-promoting behavior. The effect of *the supporting non-governmental organizations* was significant in 6 assessed elements as follows: 'Global poverty reduction' ($F_{2,139} = 8.62$, p = 0.000), 'Favoring energy efficient products' ($F_{2,135} = 5.66$, p = 0.004), 'Favoring eco-labeled products' ($F_{2,141} = 4.62$, p = 0.011), 'Use of renewable energy sources' ($F_{2,138} = 4.06$, p = 0.019), 'Favoring vegetarian diets' ($F_{2,140} = 3.98$, p = 0.021), and 'Use of services instead of ownership of goods' ($F_{2,136} = 3.84$, p = 0.024). After the Bonferroni adjustment all the differences remain significant. The means of 'I support one or more non-governmental organization every now and then' or 'I support regularly one or more non-governmental organization' were significantly greater than the mean of 'I do not support any non-governmental organization'.

The examined age-groups were 20-29, 30-39, 40-49 and 50-62. The effect of *the age* was significant in three assessed elements. First one was 'Favoring energy efficient products' ($F_{3,130} = 3.84$, p = 0.011). Second, 'Replacing goods and equipment only when broken' ($F_{3,136} = 3.46$, p = 0.018). After Bonferroni correction the only significant difference between means of the both assessed elements was in the group of the 20-29 year old participants and the 50-62 year old participants so that younger participants do not favor energy efficient products as much as older participants and they replace goods and equipment also before they are broken opposite the older participants. Third, 'Favoring vegetarian diets' ($F_{3,135} = 2.96$, p = 0.035). Means of the age groups degrease from 20-29 year old participants (M = 3.64, SD = 1.80) to 30-39 year old (M = 3.55, SD = 1.40) and to 40-49 year old participants (M = 3.20, SD = 1.80). After that means of the 'Favoring of vegetarian diets' increases in age of 50-62 (M = 4.25, SD = 1.43). After Bonferroni adjustment the only significant difference was between the means of the last two age group (p = 0.025).
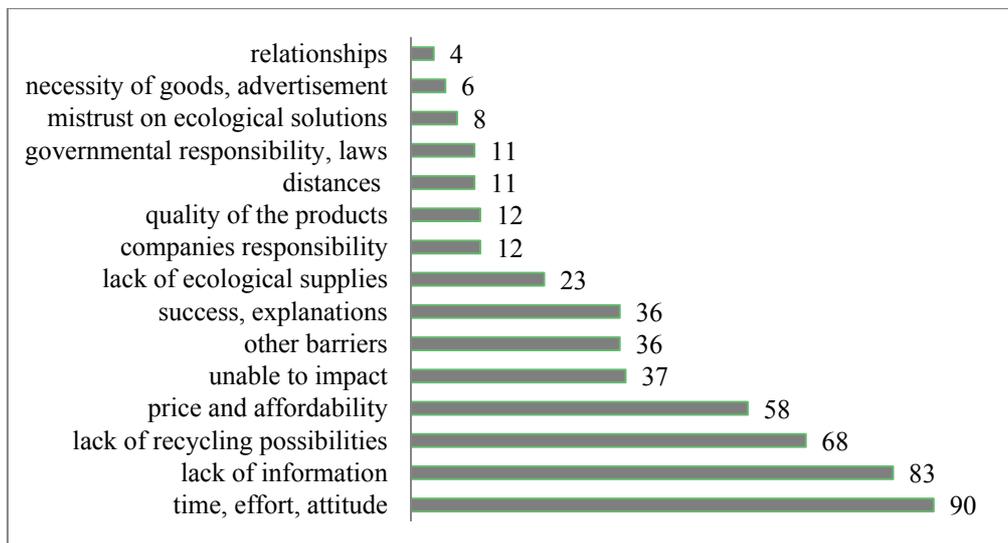
The effect of *the volunteering* was significant in 'Maintaining of civil society' ($F_{2,137} = 5.99$, p = 0.003). When Bonferroni adjustment was made for the number of comparisons, the only significant difference was between the means of 'I do not volunteer' and 'I do volunteer every now and then' (p = 0.002). The mean of 'I volunteer every now and then' (M = 4.23, SD = 1.22) was significantly greater than the mean of 'I do not volunteer' (M = 3.50, SD = 1.31).

The effect of *the friends living abroad* was significant in 'Favoring vegetarian diets' ($F_{2,141} = 3.77$, p = 0.026). After Bonferroni adjustment the only significant difference was between the means of 'I do not have any friends abroad' and 'I have many friends abroad' (p = 0.022). The mean of 'I have many friends abroad' (M = 4.08, SD = 1.7) was significantly greater than that for 'I do not have any friends abroad' (M = 3.03, SD = 1.39).

4.3 The Barriers to Sustainable Activity

15 categories of the barriers to implementation of sustainable lifestyle were identified. The main categories of the obstacles were as follows: (a) lack of time, effort or positive attitude (18%), (b) lack of information (17%), (c) lack of recycling possibilities (14%), and (d) the lack of assets (12%) (Table 4).

Table 4. Categories of the barriers to sustainability-promoting behavior (N = 495)

A negative or a passive attitude towards the demands of sustainable development, and a fast pace of life formed the greatest obstacle to the sustainable way of life together with the effort asked. This category comes close to the category of 'unable to impact', because this can be understood as an attitude in some circumstances as well.

> "If I could inspire all of my closest people, my family and the work community to get going more on this subject. I feel that I'm not up to it, if they aren't... Bad attitude, I know, but you can't always have the strength to get excited." (18)

The second category of barriers was 'lack of information', which included the uneasy access to information as well as the impossibility of getting proper, dependable information of many goods and the production chains. Also the wish for concrete examples of ways to make a difference was mentioned several times. The question of responsibility was pointed out as follows:

> "if there were more information available. Can I rely on the cheap clothing markets that their clothes has not been produced by child labor? Whose responsibility is it, the producer's, seller's or purchaser's?" (45)

The category of 'lack of recycling possibilities', shows, that there is a lot to be done in the area of craddle-to-craddle. Most of the comments displays that the possibilities are limited in everyday life. If the housing company does not have proper sorting facilities, or the material should be brought by car to a sorting center, it is seen as a barrier. Especially the disposal of household plastic is mentioned to be difficult in Espoo. This category is linked to the category of "relationship", as some of the comments mention, that other members of the family are not engaged to this activity.

Fourth category points out the issue of wealth. Many of the educators find themselves rather challenged by subsistence, because of the low wages of their profession. That is mentioned as a great barrier, as the sustainable products are often more expensive than the other. On the other hand the low price of the other products is pointed out also as a barrier: "I would act otherwise, if the products weren't so cheap and temptation to buy wouldn't become so great" (13).

An interesting category is 'unable to impact'. The early childhood educators felt that they cannot make a difference. This refers to the context of society as follows:

> "I would do more, if I felt that one small person could make a difference. I don't have any authority on this subject [global poverty reduction]." (5)

The category of 'success and other explanations' contains varied comments on the evaluated matters, and no barriers. Many of the participants are eager to share their success and actions they have made related to the subject. Most of the comments states that the participant have done the best they can: 'There are three generations of us living in the same household, mother, daughter, daughter's husband, daughter's children. We support each other (19)'.

5. Discussion

The different elements of sustainable development are in general highly appreciated as ideals, but the implementations of these valued elements are not linear. Classical balance theories assume that human beings look for balance between their values and behavior. The gap between values and behavior is, however, characteristic of human beings. Most people relate to sustainability issues positively but passively (e.g. Kollmuss & Agyeman, 2002; Koskela, 2008; Cantell & Larna, 2006; Schultz et al., 2005). The gap can be reduced by becoming conscious of the obstacles to sustainable development.

Supporting of communality (including intergenerational link and trust) was the element valued most by the early childhood educators. The implementation of this element was also assessed high but the long distance of the elder members of the family created a barrier to the intergenerational link. However, supporting of communality is a way to question how we define 'I' and 'We' in an individual and competitive society (Perlman & Sheehan, 2007). Good news is that recently participation and agency has become an important research interest in teacher education (e.g. Lipponen & Kumpulainen, 2011). A socially sustainable day-care community holds on human dignity which illuminates as social participatory and hearing the child's voice. It underlines protection and presumes that no one is left out of the community. It also includes solidarity which pays attention to individual member of the community. The intergenerational dialogue between educators and children should promote active participation and create consciousness of one's attitudes and values linked to their effects on one's actions (e.g. Cantell, 2005). This is possible only by recognizing and appreciating children's own unique cultures and the potential agency of each child (Bandura, 1982, 1997; Corsaro, 1997; Baker, 1998; Kalliala, 2011).

The largest gap between the valued thing and implementing of it was in global poverty reduction. According to the qualitative analysis many of the early childhood educators feel that it is not in their hands to act globally. One significant barrier was not trusting the aid organizations and also the lack of concrete information how one can make a difference in this area. The gap between the importance and behavior in 'social responsibility of consumer' has also many explanations. The most important barrier to this matter was the lack of information of the products. Many of the participants called for the companies' social responsibility and transparency. Indeed, global markets have increased a need of transparency (Goleman, 2010). A shift towards the old times thriving local business would be an answer to the challenge of transparency and accountability because

> "the supply of flour, of lumber, of foods, of building materials, of household furniture, even of metal ware, of nails, hinges, hammers, etc., was produced in the immediate neighborhood, in shops which were constantly open to inspection and often centers of neighborhood congregation. The entire industrial process stood revealed, from the production on the farm of the raw materials till the finished article was actually put to use." (Dewey, 1915)

According to the analysis of variance of the behavior ratings, the effect of the supporting non-governmental organizations was significant in global poverty reduction, favoring energy efficient products, favoring eco-labeled products, use of renewable energy sources, favoring vegetarian diets and use of services instead of ownership of goods. Similar connection between supporting non-governmental organizations and the promoting of sustainable development was also recognized among students of social services in a study completed in the Helsinki Metropolitan Area in Finland (Salonen, 2010). It seems to us that the cooperation between early childhood education communities and non-governmental organizations is a remarkable opportunity as raising responsible children. This gives opportunities to learn transforming questions of yes-or-no into questions of more-or-less which is essential goal to learn while shifting from the weak sustainability orientation to the strong sustainability (see Solow, 1992).

The effect of the age was significant in 'favoring energy efficient products' and 'replacing goods and equipment only when broken'. Younger participants (20-29) do not favor energy efficient products as much as older participants (50-62) and the younger participants also replace goods and equipment before they are broken opposite the older participants. This refers to knowledge which comes with age and experience. The older early childhood educators might understand better than younger that the everyday actions are part of the greater picture. This can also be due to the materialistic scarcity of the period after the World War I and II which is greater part of the identity of 50 to 62 year old people than the younger ones. Therefore it seems to us that children can be in unequal situations in the day centers as Kalliala (2008, 2011) pointed out—because of the differing quality of the educators—but also because of the differing attitude and implementation on ESD.

The least valued element of sustainable development was 'Favoring vegetarian diets'. It seems that, information about the beneficial effects of vegetarian diets on health, environment, global food security and animal welfare is not common (see Salonen & Helne, 2012). It was interesting that the effect of the friends living abroad was

significant in favoring vegetarian diets. The mean of the group 'I have many friends abroad' was significantly greater than that for 'I do not have any friends abroad.' This result supposed to indicate that people with international relationships see themselves as a part of entirety and understand their responsibility in our common global community. The identified value-behavior-gap in 'the global poverty reduction' and in 'the social responsibility of consumer' might indicate that respondents feel that their moral circle—frames of justice—include only people next to them. Hence co-operation between day-care centers from different cultures would help both educators and children to imagine the predicaments of many types of people, and to learn sense of community, cooperative relationships and generosity (Nussbaum, 2010; Rees, 2010). It might also help to expand the sphere of human responsibility (Hofstede, 2010; Salonen & Åhlberg, 2012; Wenz, 1988).

6. Conclusions

The most valued elements of sustainability were (a) supporting of communality (including intergenerational link and trust), (b) social responsibility of the consumer, and (c) recycling, composting and taking care of hazardous waste. These elements indicate the essential sustainability-promoting thinking of the early childhood educators. They underline both local and global perspective of actions. This is a solid ground to start education for ecological, social and economic sustainability and responsibility in day-care centers.

A sense of agency is a core skill to be learned by educators and children. According to our results, early childhood educators tend to transfer their responsibility to the government, to the industry, or to the housing company. This is alarming because 'business as usual' is not an option if we want to give a safe and just world for the future generations. An impact of one woman, man or even child is small, but it exists. This can be compared to the idea of democracy—one vote per a citizen. There is no hope if we feel that we cannot impact our common future on the Earth.

Most of the identified barriers to sustainability-promoting behavior seem to be contextual barriers in a society. The result is similar to previous studies in Finland (Salonen & Ahlberg, 2013b). This means that active citizenship is very much needed. Volunteering is one form of active citizenship. We found that the effect of the volunteering was significant in maintaining of civil society. We form a society all together, and we are responsible to elect best politicians. Overcoming of the contextual obstacles is possible if sustainable daily choices are easy and cheap to implement in our society.

There is interdependence between you and me, as well as between human and non-human world. However, we prefer to take care of people next to us. If someone sews clothes for us, in a sweatshop far away, we easily close our eyes and ignore dressmaker's right to have decent work, for example, saying that we have a lack of reliable information. A challenge for education is individualism—we are responsible for the resilience and dignity of each other. Extending of the moral circle of the modern man is crucial because we all form a global community.

We recommend having cooperation between day-care centers and non-governmental organizations. This seems to be a remarkable opportunity to enhance sustainability-promoting behavior. According to our results, the connection of the supporting non-governmental organizations was significant to ecological, social and economic aspects of sustainability in early childhood educator's daily life. However, more research is needed to find out, does these connections and attitudes also help the children to have more sustainable values, attitudes and behavior in early childhood educational settings.

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