I would like to thank all the members of the Editorial board for their hard work reviewing commenting on the articles that we receive from many parts of the world. My thanks are also due to the contributors to this issue for their patience and stamina.

This issue of the JTEFS consists of seven papers that deal with issues ranging from a conceptual framework that can become visible in teaching and learning about sustainability to a need for constructing new paradigms in the field of education for sustainable development suitable also for the youngest children. The papers also demonstrate the range of methodologies which can be applied to studies in teacher education for sustainability and provide ideas and results from a number of different national and cultural perspectives.

The paper by Smorti and her colleagues draws on the narratives of three teaching staff as they collaborate to transform student teachers’ thinking and praxis about sustainability through a bicultural perspective that acknowledges indigenous and Western ideologies. It will discuss some of the experiences that the student teachers found to be transformational. The question the co-researchers pose: How is the conceptual framework visible in our teaching and learning about sustainability? The findings suggest that student teachers become articulate and passionate about sustainability through engagement in activities that challenge the ‘taken-for-granted’ everyday practices. As confidence and competence increases, student teachers can realise their potential to make significant curriculum changes as they work alongside children and their families to care for planet earth.

The paper Buttigieg and Pace focuses on the experiences of young people who are leaders of change in the environmental field. This study views environmental activism as a personal commitment towards pro-environmental behaviour. The motivations and challenges of such work are viewed as important to learn more not only about volunteering in environmental organisations, but also about pro-environmental behaviour. The main research problem was to explore these individuals’ present and past life experiences, in the light of their activism, towards the issue of climate change. Narrative inquiry was chosen as a methodology for this research as it gives importance to experience and facilitates the study of an issue in all of its wholeness and complexity. The research involved in-depth interviews with three participants as well as living alongside the participants in an effort to build a relationship with them and to experience being an environmental activist. The outcomes of this study provide an opportunity for reflection on the factors that affect pro-environmental attitudes and behaviour and their implications on environmental education. From the narratives produced, it is clear that there is no single factor that is optimal for promoting pro-environmental behaviour and environmental activism. These are, in fact, determined by a combination of interrelated factors.

The paper by Paige Bray and Steven Schatz investigates a model for developing meta-cognitive tools to be used by pre-service teachers during apprenticeship (student teaching) experience. Meta-cognitive tools have proven to be effective for increasing performance and retention of undergraduate students. Postulating that the student
teaching experience is a new type of learning – learning about practice (knowledge in action), instead of learning curriculum or pedagogy (knowledge possessed) – the authors suggest that a meta-cognitive tool set may prove similarly useful. Before studying the effectiveness of a tool set, however, a model which enables different programmes to evolve and develop appropriate tools is necessary. This case study research explores a model for the development of a context-specific tool set over 18 months, incorporating user feedback, researcher reflection and multiple-tool development. The model showed promise as a starting point for understanding and operationalising complex interactions with theory and practice.

The paper by Vartiainen and Enkenberg focuses on the expansion of design-oriented pedagogy that encourages approaching global phenomena such as sustainable development from the perspective of local environments, cultures and associated ways of doing things. It aims to determine how project members and teachers from eight different European countries who had participated in the project “Case Forest – pedagogy towards sustainable development” experienced the pedagogical model and evaluated its usability from the perspectives of their own educational cultures. The main sources of both theory and data-driven qualitative content analysis are the reports obtained from each country and transcripts of the oral presentations and collaborative discussions. The results indicate that the teachers find current school practices, belief systems and traditional teaching models problematic and see the model as one way to change their schools’ practices towards sustainable learning.

The paper by Jermolajeva and Aleksejeva describes the influence of education reform on economic competitiveness, paying a special attention to analysing and evaluating international experiences from an interdisciplinary perspective, including economics, pedagogy, etc. Quantitative indicators are used to characterise specific features of the higher education system and the interaction of this system in the overall context of state development. The authors conclude that, in order to reorganise the Latvian higher education system and increase its competitiveness and efficiency, thus ensuring quality and availability, the Latvian education system must define a middle-term (4–5 years) and long-term (10–15 years) development plan that is coordinated with national economic development.

The paper by Sakk highlights opinions of learners, parents and teachers on the aspects of coping at the second level of primary school in both Estonian-medium and Russian-medium schools. The research was carried out from 2006 to 2011. The research used a questionnaire which was administered to 652 learners and their parents in Forms 4 through 6 at both Estonian-medium and Russian-medium general education schools. In the second part of the research, 30 teachers from the same selection were interviewed. The results of the research show that the learners, parents and teachers who took part in the research in both Estonian-medium and Russian-medium schools link the aspects of coping with academic success. Additionally, teachers in schools with Estonian as the language of instruction consider the learners’ skills of social coping also important. Both the Estonian-medium and Russian-medium school teachers consider home and parents the main factors that influence coping skills. According to the teachers, changes in society have changed common beliefs, attitudes and the way of thinking among the parents and the learners, causing difficulties in learners’ academic as well as social
coping. Based on the rapid change of society, it is important to reorient teacher education. Social skills, forming the basic skills of learning and using different websites for studying will become crucial in teaching the new generation.

The paper by Eriksen intends to outline a legitimising basis for implementing education for sustainable development in early childhood education. Starting from our current ecological crisis, the ontological assumptions of modern culture are considered obstructive to possibilities for mitigation. The author affirms a need for constructing new conceptual frameworks in the field of education for sustainable development suitable also for the youngest children. The very logic of the reigning notion of knowledge requires revision in order to secure successful implementation, as well as fostering citizens with the moral agency required to meet calamity. Ontological insights from deep ecology are suggested integrated with the more practical epistemological concept of ecological habitus. Possible gains are not exclusively related to sustainability, but also include positive impacts on the life quality of young children as such.

Astrida Skrinda
Editor-in-chief
Abstract

This paper draws on the narratives of three teaching staff as they collaborate to transform student teachers’ thinking and praxis about sustainability through a bicultural perspective that acknowledges indigenous and Western ideologies. It will discuss some of the experiences that the student teachers found to be transformational such as: whakapapa (our connectedness to all things, both living and non-living) and a mini action research project on the ‘rubbish’ generated on their class days. The question the co-researchers pose: How is the [bicultural] conceptual framework visible in our teaching and learning about sustainability? Our findings suggest that student teachers become articulate and passionate about sustainability through engagement in activities that challenge the ‘taken-for-granted’ everyday practices. As confidence and competence increases, student teachers can realise their potential to make significant curriculum changes as they work alongside children and their families to care for planet earth.

Key words: early childhood, teacher education, Māori (indigenous) perspectives, bicultural

Introduction

The whakatauki or traditional proverb “Mai te kore, ki te pō, ki te whaiāo, ki te āo marama” lies at the heart of a conceptual framework that guides teacher education in the early childhood degree programme of Te Tari Puna Ora o Aotearoa/New Zealand Childcare Association. Students are challenged to become aware of the potential (mai te kore) and the possibilities and uncertainties (ki te pō) as they move into the world of light (ki te whaiāo) towards enlightenment and understanding (ki te āo marama) about their responsibilities as human beings and as teachers of infants, toddlers and young children.

In 2009, our organisation (Te Tari Puna Ora o Aotearoa/New Zealand Childcare Association) developed a bicultural conceptual framework to guide the development of a Bachelor of Teaching (Early Childhood Education) degree with sustainability as a curriculum thread. This provided an opportunity for three members of a teaching team to engage in a dialogue and learn from each other about sustainability from different cultural perspectives. One member of the team in this project is Māori and as tangata
whenua (indigenous people of the land, Aotearoa/New Zealand) brings a critical lens to effect praxis. Alongside students, co-researchers are challenged to become aware of the potential of integrating a Māori perspective of sustainability moving towards enlightenment and understanding. The question the co-researchers pose is the following: *How is the [bicultural] conceptual framework visible in our teaching and learning about sustainability?*

This paper outlines a New Zealand historical and contemporary context that has and continues to impact on education for sustainability. Following this is a description of the methodology and research design which is located in both Western and indigenous paradigms. This, then, leads into narrative which links identity and kaitiakitanga (stewardship) of student and lecturer praxis. Analysis of key findings and implications for the New Zealand context conclude the discussion.

**Background**

Aotearoa, New Zealand, is a small island nation situated in the South Pacific, where the indigenous people (Māori) are a minority within a total population of 4.4 million (Statistics New Zealand: Tatauranga Aotearoa, 2012). An agreement between two nations, Māori and the British Crown known as the Te Tiriti o Waitangi/the Treaty of Waitangi was signed in 1840. It assured Māori the retention of their lands, belief systems and language (Orange, 1987). This assurance to Māori was not upheld, which has generated a significant loss to language, culture and economic base. This is an ongoing dilemma for Māori. It is of note that the New Zealand government delayed signing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (United Nations [UN], 2007). Article 15.1 recognises that “indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information” (UN, 2007, p. 7).

Te Tari Puna Ora o Aotearoa/NZCA policies and a teacher education programme are guided by New Zealand’s constitutional document – the Treaty of Waitangi/Te Tiriti o Waitangi (Orange, 1987). Our organisation’s bicultural strategy (2008–2010) strengthens this commitment to increase bicultural praxis in the degree. Te Tari Puna Ora o Aotearoa/NZCA provides a field-based teacher education programme whereby student teachers attend class one day a week and work in an early childhood setting for the majority of each week. Many students are mature women with families returning to study. 27% of students in the programme in 2010 were Māori (Meade, Kirikiri, Paratene, & Allan, 2011).

**An indigenous articulation**

Whakapapa (origins) is an indigenous word representative of Māori beginnings as interconnected beings resonating spiritual, human, physical and environmental elements. The individual is integral to a pedagogical process which recognises that Māori are connected to all things that exist in the universe. “We are linked through our whakapapa to insects, fishes, trees, stones and other life forms” (Mead, 1996, p. 211). Knowing your whakapapa (origins) establishes your place of belonging, the connecting of grandchildren to ancestors, family, subtribes, tribes, to the land, the sea and the mountains.
Māori knowledge, values and beliefs are bound in the pro-creative pūrakau/Māori reality. It is a narrative that highlights qualities of integrity and relatedness to Ranginui (sky father) and Papatuanuku (earth mother), to an intertwined spiritual and cultural relationship with nature. It is within these embedded energies and aspects that Te Ao Māori (Māori worldview) ecological principles reside (Ritchie, Duhn, Rau, & Craw, 2010, p. 28).

The notion of kaitiakitanga (stewardship) is an indigenous cultural conceptualisation which upholds whakapapa (origins), acknowledging interconnectedness through ecological conservation. This term inculcates the emergence of an ethical responsibility to be guardians and trustees of the natural world (Benton, Frame, & Meredith, 2007). A Māori worldview prioritises the significance of reciprocity and the active engagement of caring for rather than merely caretaking of taonga/treasures (Waitangi Tribunal, 2004).

**Approach to sustainability**

In New Zealand early childhood settings, children are viewed as “competent, confident learners who ask questions and make discoveries” (Ministry of Education, 1996, p. 88). This allows children to make choices about their engagement in the environment/curriculum. We would argue this places an additional responsibility on early childhood educators to ensure that all children are provided opportunities to engage in experiences that promote education for sustainability. Furthermore, in a curriculum supported by assessment procedures that focus on children’s interests (Ministry of Education, 2004, 2007), it is up to the educator to notice, recognise and respond to children’s emerging interests (Cowie, 2000, as cited in Ministry of Education, 2004) in ways that are meaningful to the child. This requires skilful planning and documentation by educators to support children’s learning as well as sound content knowledge and pedagogy about the topic of education for sustainability. Increasingly, educator knowledge (or lack thereof) is being fore-fronted in the New Zealand context. Educators need to take personal responsibility for their own environmental knowledge so that education for sustainability becomes an integral part of the early childhood curriculum (Prince, 2010). In a bicultural curriculum such as the New Zealand early childhood curriculum document “Te whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa” (Ministry of Education, 1996) it can be expected that this will include consideration of indigenous knowledge as included in the te reo (Māori) text and throughout the remaining document.

Two learning outcomes from “Te whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa” (Ministry of Education, 1996) that guide this study include, firstly, the notion that infants, toddlers and young children develop “a relationship with the natural environment and a knowledge of their own place in the environment” (Ministry of Education, 1996, p. 90). On one level, this statement recognises an approach that leans towards environmental education based on children’s engagement in the environment. However, when a Māori worldview is applied and concepts such as whakapapa (origins) or kaitiakitanga (stewardship) are considered, then the child becomes an active agent through his/her relationship with the environment. This, then, allows for discussion about issues of social justice and children’s competence in acting for the environment. Davis refers to a new conceptualisation as in early childhood education for sustainability (ECEfS) described as:
transformational early childhood education that values, encourages and supports children as problem-seekers, problem-solvers and action-takers around sustainability issues and topics related to their own lives (Davis, 2009, p. 230).

We argue that this is as relevant to ourselves as co-constructors of knowledge (Jordan, 2009) as it is to our student teachers and teachers in training, and the children and families that they work with in early childhood centres.

The second learning outcome requires that children develop “respect and a developing sense of responsibility for the wellbeing of both the living and the non-living environment as well as (...) develop working theories about the living world and knowledge of how to care for it” (Ministry of Education, 1996, p. 90), again positioning children as active agents in caring for the environment which includes caring for all elements as noted under the concepts of whakapapa (origins) and kaitiakitanga (stewardship) discussed above.

In their study of New Zealand kindergarten children’s action competence, Mackey and Vaealiki (2011) argue that young children are critically aware of environmental issues. Elliot and Young (2005) consider the importance of early connection with the natural environment suggesting that environmental education begins at birth, and, on a developmental continuum, such as espoused in “Te whāriki: He whāriki mātauranga mō ngā mokopuna o Aotearoa” (Ministry of Education, 1996), educators are required to consider appropriate learning experiences for infants and toddlers as well as young children.

Methodology

An eclectic approach utilising indigenous and Western research design (Clandinin, 2007) underpins this study. Kaupapa (philosophy) Māori and narrative research align with a qualitative approach, the emphasis in the study being on dialogue for reflection and change in praxis (Denzin, Lincoln, & Smith, 2008). Kaupapa Māori methodology upholds narrative/storytelling as integral to the transference of values and beliefs across time (King, 2005; Metge, 2010). Kaupapa Māori research recognises its value as a methodological tool, a way of understanding and making sense of people’s lives and experiences. Narrative/storytelling aligns with Māori concepts of interconnectedness between whānau (family), hapu (subtribe), iwi (tribe) and the environment. This is affirmed in Ritchie et al. (2010). Linda Smith (1999, p. 120) highlights Māori research principles of:

- Kanohi kitea (the face that is seen, being present with people face to face)
- Aroha ki te tangata (highlights respect for people)...
- Kaua e takahia te mana o te tangata (reminds us to uphold, not trample on the prestige of people) ...
- Titiro, whakarongo korero (reminds us to look, listen and speak) ...
- Kia tupato (tells us to be cautious) ...

These principles are viewed as rights imbued with ethical underpinnings that honour the integrity of all those involved within research.
Meier and Stremmel (2010) define narrative research as a “process of studying and understanding experience through story telling or narrative writing” (p. 249). They discuss the application of narrative inquiry to early childhood teacher education as a tool that “prompts reflection and encourages the authentic expression of lived experiences” (p. 250). This suggests that it is through telling of their stories that teachers gain a sense of who are they as teachers and as human beings; one of the core elements in the conceptual framework of the degree is the notion of teacher identity and the relationship of the self as a teacher and the self as a person (Gibbs, 2006). We would add that, in terms of education for sustainability, an acknowledgment of the self as kaitiaki (steward) is an important part of being a teacher and that it is in the acting out of our everyday lives that we express these values.

In her study of self-study research through narrative inquiry, Ajodhia-Andrews (2011) notes the value of collaborative partnerships with colleagues as a way of affording opportunities to construct fresh understandings and thinking, through a shared dialogue with others who may not share familiar perspectives. This has been an important element of our collaboration as we come to know and understand ourselves and the perspectives of others. Moen (2006) emphasises the collaborative nature of narrative research and the importance of a caring relationship between the researcher and those being researched. While this is collaborative research and one colleague is not researching on another, we are exposing our worldviews and values as we share thoughts and ideas and open ourselves to new ways of thinking. Sensitivity to cultural beliefs and values has been an important part of our story telling, supported by a shared responsibility to manaaki (to uphold the prestige of and to care for each other).

Therefore, an indigenous co-researcher’s voice illuminates a Māori worldview by exploring philosophical, theoretical and pedagogical understandings alongside fellow co-researchers, both of whom derive their knowledge and understandings from a Western perspective. The co-researchers’ philosophical positioning of sustainability, whilst anchored in Western discourse, also aligns with Māori ecological values and beliefs. A praxis of kaitiakitanga (stewardship of the planet) is enacted on a daily basis at the teaching base alongside colleagues and students. A respectful reciprocity exists; the co-researchers upholding the prestige of the earth through deliberate interventions designed to potentialise transformative change of students and staff.

Method

The opportunities for thinking about sustainability through a new lens occurred as all three researchers shared their reflections; at first informally around the morning tea table and later as we worked together on a shared presentation for the 47th Te Tari Puna Ora o Aotearoa/NZ Childcare Association’s conference “Environmental education meets intersecting dispositions: Spaces in student knowledge” (PetersAlgie, Smorti, & Rau, 2011).

A bicultural research collaborative method was instigated, which involved a multi-layered approach whereby two co-researchers would guide and implement the students’ inquiry of sustainability. The non-Māori lecturers and their classes were to implement an action research project to investigate the amount of rubbish generated at the teaching base. Following this, the indigenous co-researchers’ role was to facilitate conversations to analyse and make visible conceptual understandings of Māori.
Action research applies cycles of planning, action, observation and reflection. Mukherji and Albon (2010) define action research as “an approach to research that emerges from real-life, practical problems rather than focussing primarily on the development of theory or understanding of an issue” (p. 91). This research method was used with students to gather data on their actions and to plan further interventions which would support sustainable praxis. Students’ reflections also form part of the data set.

A limitation of the study was the separation of the indigenous co-researchers from the action research process with the students. Oral narratives are validated by Kaupapa Māori methodology, and the co-researchers applied this as one of the methods used. In Western theory, this may be considered a limitation.

Our approach to teaching and learning about education for sustainability

At the outset of our co-research collaboration, we were teaching a course that covered a number of key curriculum areas focused on science, technology and environmental science in early childhood settings as well as working in partnership with family and community, with a minor focus on an introduction to practitioner research. Throughout the course, we worked to integrate these areas in meaningful ways as in a holistic curriculum while weaving the theory around the practice.

It was important to us that our students take their learning back into their early childhood centres and communities, which is a notion that fits well within a centre-based model of teacher education such as ours, where students are also practicing teachers. This meant that the experiences we provided must be relevant and meaningful not only to our student teachers, but also to the colleagues in their early childhood centres and to children and families with whom they work. For us, this meant providing ‘hands-on’ experiences that students could replicate or adapt in their centres, with a particular consideration for infants and toddler programmes.

Findings and analysis

As a way of modelling the action research component of the course, we involved students in physically collecting and sorting the rubbish generated by them on their class day. The ‘problem’ we posed to them was: *Is the amount of rubbish we generate an issue, and, if so, how could we reduce/reuse/recycle more?*

While sorting the rubbish was met with some reluctance initially from class members, the messages from their readings and discussions about sustainability were strong enough to motivate them to engage in the activity. In the first week of the course, with our support, students sorted, weighed, counted and documented visually how much and what type of rubbish they were generating and disposing of in the rubbish bin. This gave us base line data. Each week a small group continued with the research task, documenting and making their findings visible to their classmates. Each student had a turn in the group responsible for recycling over the period of the 10-week course. This became a self monitoring activity with very little lecturer input after the initial three weeks.

The key change in students’ practice on the teaching base was a reduction in refuse from a 50-litre bin to a 10-litre bin daily. This included a reduction in green waste in the
Engaging student teachers in sustainable praxis in Aotearoa/New Zealand

A worm farm made from recycled products was set up and a bokashi bin established when the worms were unable to keep pace with food rubbish. These findings demonstrated the need for students to have knowledge about the science involved in composting as a way of understanding the conditions conducive for both the worm farm and bokashi bin to operate. As a result of this activity, many of the students returned to their centres and revived discarded worm farms; some made new worm farms from recycled materials with the children. Students also began seeing that children, with teachers’ support, are competent and interested in environmental activities, and, for some centres, this meant a move towards integrating these activities into the everyday curriculum offered to children.

The increase in the amount of plastic, glass and metal put out for recycling required some knowledge of the symbols of recycling and learning about what our local council would accept as part of their newly launched recycling project. A visit to the local recycling centre created an awareness of the physical amount of recyclable rubbish created within the city. This gave the students an idea of how their individual actions can collectively impact on the planet, how they can become kaitiaki (stewards) who care for the environment. Students’ responses include: The trip to the recycling centre ... seeing it makes it more understandable and real. It makes me think about things I flush down the toilet. As individuals, we can make a difference.

These students’ outcomes reflected shifts in thinking; their “kanohi ki te kanohi” (face-to-face) engagement with the ‘rubbish’ and visit to the ‘recycling centre’ generating new thinking – a differing relationship anchored in a sense of reciprocity, of taking responsibility and not seeing oneself as separate from the artefacts.

Weekly reflective discussion took place based on the excursion or experience encountered the week before. A passion developed amongst the students for what they were discovering and how they as individuals could make a difference. Many students found out that children attending their centres were already knowledgeable about environmental sustainable practice and were able to engage with families to do more in relation to environmental learning. This also helped strengthen relationships and partnerships within the centre environment.

The group experienced kaitiakitanga (stewardship) as opportunities for thoughts, energies and passions to collude together as a transformed collective. Discussions between colleagues were enriched as our enthusiasm was swept along with our own learning alongside the students. A greater connectedness between participants was established alongside a developing deepened respect for what we all could offer on the topic. Students became passionate about the environment and began to advocate for social justice surrounding environmental sustainability and practice.

There was a deepened connectedness, “Aroha ki te tangata” (caring for people and the environment) enacted resulting in a new student ‘re-lensed’ relationship with their environment. Changes were made to personal choices based on the new knowledge students had gained and after a trip to the waste water treatment plant there was much discussion and seeking out of non-prosperous products in the supermarket. Documentation of the action research provided evidence to reflect upon; sorting the rubbish provided data that indeed the amount of rubbish being generated on the base was a problem.
Concluding reflections

Ecological sustainability is a planetary priority, and individual contributions are critical to building a collective consciousness. In this paper, we have drawn from New Zealand literature focusing on sustainability in early childhood, Prince (2010), Ritchie, Duhn, Rau and Craw (2010) and Mackey and Vaealiki (2011). The key tenets of the writers are grounded in advocacy, rights, action competency and indigenous epistemology as integral to kaitiakitanga (stewardship) of the environment.

This research prioritised students’ involvement “Titiro, whakarongo...korero” (Look, listen, speak) as integral to a visioning of individual voice adding to the strength of all. As lecturers, we made taken-for-granted assumptions about students’ knowledge surrounding sustainable practices before we began these classes. It was not until we engaged in ‘real experiences’ that students began to understand their personal and professional obligations in this area. Narrative as methodology validates collaboration; as people engage in narrative/storytelling, new visions emerge.

Identity is integral to our conceptual framework. In this research, narrative students came to see themselves as kaitiaki (stewards) taking on the mantle of sustainability and being transformed. Inspired and empowered, the students took their new knowledge and understanding of education for sustainability back into their early childhood centres with strength, voice and a sense of advocacy. Kaitiakitanga (stewardship) was affirmed through establishing a deeper respect for the living and non-living world. Manaakitanga, (caring for all) for the environment was upheld by students’ reciprocity towards viewing nature from a newly found ethical position.

The context of Aotearoa/New Zealand as a nation with a dual heritage recognised through Te Tiriti o Waitangi/the Treaty of Waitangi, offers an opportunity to reconceptualise our thinking about sustainability (kaitiakitanga). Co-researchers’ collaboration and passion for re-positioning sustainability at the heart of curriculum has inspired transformative praxis that prioritises the collective rather than the individual.

References:


Engaging student teachers in sustainable praxis in Aotearoa/New Zealand


**Correspondence:**

Sue Smorti, senior lecturer, Te Tari Puna Ora o Aotearoa/New Zealand Childcare Association, PO Box 4284, Manawatu Mail Centre, Palmerston North, 4442. 23 Mihaere Drive, Palmerston North 4414. Email: Sue.Smorti@nzca.ac.nz
POSITIVE YOUTH ACTION TOWARDS CLIMATE CHANGE

Karen Buttigieg and Paul Pace
The University of Malta, Malta

Abstract

This study focuses on the experiences of young people who are leaders of change in the environmental field. This study views environmental activism as a personal commitment towards pro-environmental behaviour. The motivations and challenges of such work are viewed as important to learn more not only about volunteering in environmental organisations, but also about pro-environmental behaviour. The main research problem was to explore these individuals’ present and past life experiences, in the light of their activism, towards the issue of climate change. Narrative inquiry was chosen as a methodology for this research as it gives importance to experience and facilitates the study of an issue in all of its wholeness and complexity. The research involved in-depth interviews with three participants as well as living alongside the participants in an effort to build a relationship with them and to experience being an environmental activist. The participants were members of a local environmental organisation – Friends of the Earth (Malta). The outcomes of this study provide an opportunity for reflection on the factors that affect pro-environmental attitudes and behaviour and their implications on environmental education. This reflection will enable informed efforts to engage more young people in environmental activism. From the narratives produced, it is clear that there is no single factor that is optimal for promoting pro-environmental behaviour and environmental activism. These are, in fact, determined by a combination of interrelated factors.

Key words: narrative inquiry, youth, education for sustainable development, activism, climate change, friends of the earth

Introduction

Environmental problems are ultimately a result of human behaviour and can thus be mitigated and reversed also through human behaviour – not just through scientific and technological solutions (Oskamp, 2000). This means that Education for Sustainable Development (ESD) has a key role in the resolution to such problems (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2005). The 2007 High-level Planning meeting acknowledged climate change as a world concern that needs to be part of the awareness, learning and education for a sustainable future (UNESCO, 2007).

The world’s 1.2 billion young people aged 15–24 constitute 18 per cent of the global population (United Nations [UN], 2007). Agenda 21 (United Nations Conference
on Environment and Development [UNCED], 1992) identified youths as key stakeholders that have a unique contribution to make towards sustainable development and dedicated Chapter 25 to the importance of children’s and young people’s participation in decision making to create their own future. The participation of young people in sustainable development efforts will determine the success of these efforts. Research, though, has shown that there is an attitude-action gap in young people. For instance, Mifsud (2008) reports that the overall attitude of Maltese post-secondary students towards the environment appears to be strongly positive, but they generally seem to perform little positive environmental action. One reason for this attitude-behaviour gap might be the way in which ESD is presented.

This research explores factors that encourage a change in behaviour in young people that have bridged the attitude-action gap and are actively involved in positive work for the environment. Whilst Tanner (1998) argues that “it is imperative that we understand how activists (informed, responsible activists) got to be the way they are” (p. 400), there has been, in fact, little research conducted on young people who are leaders in environmental action (Arnold, Cohen, & Warner, 2009). The study aims to provide information and insights that will influence the development of more effective ESD programmes for young people – programmes that encourage young people to take the lead in sustainable development.

While both authors shared in the analysis of and reflection on the experiences gathered during this research, the use of the first person active voice was preferred over the passive voice in the writing of the research methodology of this paper. This was done to highlight that it was the main researcher (i.e. the first author) who, as a situated participant in the research, was doing the telling.

Research methodology

The story is a universal form of human sense making, and narrative inquiry values human experience as a way of generating knowledge and interpreting it. Narrative researchers collect and interpret these narratives to study how humans experience and understand the world (Gudmundsdottir, 2001). People reveal themselves to others by the stories that they tell. Narrative inquiry can thus help us to understand reasons for our actions, which are motivated by beliefs, desires, theories and values (Bruner, 1990). Narratives often seem able to give us understandings of people in a way that more traditional positivist methodologies cannot, because they recognise the value of the whole person and human life in its complexity (Freeman, 1997).

Narrative inquiry is not fragmentary and has thus enabled me to study the experiences of my participants in a holistic manner. I have positioned myself and my research within the experience-centred narrative research domain that involves “texts which bring stories of personal experience into being by means of the first person oral narration of past, present, future or imaginary experience” (Patterson, 2008, p. 37). I have chosen this position since I was interested in general experiences, themes within the stories, participants’ thoughts and feelings and in building a relationship with participants in which they could share the responsibility of construction of the stories.

In this study, I was focused on trying to understand the life experiences of three individuals who chose to dedicate a portion of their lives towards the issue of climate change. The research problem can thus be seen as trying to think of the wholeness of
these individuals’ life experiences and to explore its complexity in the light of their activism towards climate change. I wanted to be able to see their past, present and future, what they thought and why they thought that way.

**Entering the field**

Most studies measure environmental behaviour through self-reporting, but the link between self-reported behaviour (or behavioural intentions) and actual behaviour can be quite weak. Various studies report that people claiming to possess pro-environmental attitudes often do not act accordingly (Finger, 1994; Schultz, Oskamp, & Mainieri, 1995; Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998; De Young, 2000). In studies that involve self-reporting, participants tend to report more engagement in pro-environmental behaviour than they actually do since it is easier to report such behaviour than to actually practice it, and it is also quite tempting to exaggerate positive actions (Schultz & Oskamp, 1996). Participants would usually want to show the researcher how ‘environmental’ they are, and, thus, over-reporting is somewhat an inevitable outcome of self-reporting (Barr, 2007). Over-reporting is becoming more pronounced as environmental discourse is becoming more mainstream.

Stern (2000a) considers environmental activism – including active participation in environmental organisations – as an environmentally significant behaviour. Members in environmental organisations are expected to engage more in pro-environmental behaviour than the general public (Ellis & Thompson, 1997; Hines, Hungerford, & Tomera, 1986–1987; Olli, Grendstad, & Wollebaek, 2001). If they are volunteering time and energy, it must be (at least partly) because they believe in the issue and in the possibility of change. Moreover, belonging to an environmental organisation is in itself a motivator towards adopting the group’s shared pro-environmental behaviours.

My study was thus conducted with Friends of the Earth Malta (FoE Malta) – a local organisation affiliated with Friends of the Earth International (FoEI) and Friends of the Earth Europe (FoEE). I chose this non-governmental organisation (NGO) since, at the time, it was the only one in Malta that was involving young people in the fight against climate change. I did not only choose an activist environmental organisation, but from within I chose participants that had an activist role. Paying the organisation’s membership fee does not imply commitment towards the organisation and its vision. There are different levels of membership within an environmental group, and, out of all possible types of membership, environmental activism is the most committed (Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Being an activist within an environmental organisation involves trying to actively influence policy making and public opinion to take and support environmental measures. Finger (1994) unsurprisingly found that environmental activism is directly related to pro-environmental behaviour. Emmons (1997) defined pro-environmental actions as “a deliberate strategy that involves decisions, planning, implementation, and reflection (...) to achieve a specific positive environmental outcome” (p. 35).

There are two starting points for narrative inquiry: listening to participants as they tell their stories and living alongside participants as they live their stories (Clandinin & Connelly, 2000). I chose the latter and sought to first settle in, live and work alongside the participants and experience being an activist in an environmental organisation. During this time, I persisted in trying to become part of the group and join the group
narrative. I recorded actions, happenings and feelings which became part of my field notes. I started the interviews four months after I first joined the group. This time spent living with the participants enabled me to get to know them first and also offered the participants the time and space to feel comfortable with the relationship between us. Trust is one of the most important aspects of the life story interview.

**Interviewing participants**

Narrative inquiry usually uses small numbers of interviewees, often sampled opportunistically (Squire, 2008). I was not interested in interviewing any member listed in the organisation’s database, but in active young members. So I interviewed only those young volunteers that were committed to attending the climate change campaign meetings and actions. There were only three such volunteers – Charlene, Robert and Mary – who agreed to take part in the research.

The life story interview has different roles as a tool in narrative inquiry and provides a practical and holistic methodological approach for the collection of personal narratives (Atkinson, 1998). The narrative produced not only seeks to represent the storyteller, but also offers a way for the researcher and others to explore and interpret the personal world of the storyteller (Atkinson, 2007).

Prior to the interview, I prepared the participants by explaining what the interview was going to be about. I also gave them an empty timeline that they could fill with events that happened during their life – events that shaped their environmental values and influenced their choice to be active within FoE. The timeline allowed them to write down the year or how old they were when the event happened and to give a title or a short description of the event. They had time to think of these events on their own, at home and without any pressure, and, when they were ready, they gave me the timeline they had constructed. This timeline served as an initial basis for the interview. It enabled me and the participants to go into and discuss these events together in greater detail. These were events which the participants themselves deemed important without having any suggestions from me as the researcher. I also prepared a general interview guide with some open-ended questions that I discussed with the co-author of this paper. These questions addressed areas that did not feature in the timelines but which I wanted the participants to delve deeper into. The participants chose where they wanted their interviews to take place. For me this was important, because I wanted them to feel comfortable, ‘at home’. So sometimes we met in their favourite coffee shop or at the FoE office, or in a public garden.

During the interviews, I guided the participants through the telling of their life story while recoding it on an audio tape. I allowed the participants to say whatever they wanted to say by refraining from asking a lot of questions or commenting about what they had just said (Riessman, 1993). However, when I thought that what they shared was just the tip of a big iceberg, I tried to elicit more by encouraging them to reflect on the events that had happened. The interviews can thus be described as semi-structured as the overall agenda was set by me, yet there was plenty of room for the participants’ own personal agenda and spontaneous descriptions and narratives (Brinkmann, 2008). The direction of each interview was mostly determined by the participant’s responses to ensure that the participant shared the role of deciding the course of the interview. I am aware of the fact that the stories elicited are very much a result of the interactions
between me as an interviewer and the participants and that different types of interaction would most probably have produced different stories (Riessman, 1993).

**Producing narrative texts**

I transcribed and translated (from Maltese to English) all the audio recordings of the interviews. Although this took a painstakingly long amount of time, it allowed me to become more familiar with the narrative texts and feel closer to the participants. Transcription is also an interpretative process, and thus I also wanted to make sure that I had full responsibility of the interpretation. After transcribing, I omitted the questions asked during the interview, any utterances from my part and some repetitions. Content had to be restructured into sentences and paragraphs and reordered to make it chronological and thus to create a story which was clear and readable (Atkinson, 2007). This was important as people often do not conceptualise their stories in sequential categories, especially when they are speaking (Gready, 2008).

For both empirical and ethical reasons, to come up with narrative texts that truly reflect how the participants view themselves and their experiences and how they want to appear to the audience of the study (Freeman, 2003), I thus made sure that my relationship with the participants did not end with the interview. I gave them first the transcript and then the narrative text to review and change as they saw fit, thus valuing their intentions and agendas both during the interview and the production of narrative texts (Connelly & Clandinin, 1990). This gave the participants the final say in what their life story will look like in its final form, giving them more power over the narrative (Squire, 2008). I cannot say that I was not hesitant about taking the narrative texts back to the participants as I feared that they would not like the texts and would want to drop out of the study. My fears were nevertheless unfounded, and all participants contributed to changes to the research texts.

The conversations between us did not stop when the interviews were finished, but I still remained part of the group, and the narratives evolved throughout the research process. The final product became the narrative texts which took the form of a first-person narrative/story that retained the words and the voice of the participants. The narrative texts were thus created with the purpose of telling a story that provides the basic building blocks of narrative inquiry (Franzosi, 1998). Without a story there is no narrative. Sequence and meaningfulness were guaranteed through the following of the participants’ life-course, but some ‘non-story’ material like descriptions and reflections were also included. This text became the essence of what happened to the participants, whilst presenting their perspective on, and understanding of, their lived environmental life. What the participants chose to tell me is what is most real and important to them and is what gives the clearest sense of their subjective understanding of their lived experiences (Atkinson, 2007).

**Analysis of the narratives**

There is no universal fixed approach in narrative analysis, but according to Plummer (2001), one of the central elements of narrative research is the analysis of key themes that help to organise the way a life story is told. These themes – that may be stories of events or particular thoughts and philosophies (Phoenix, 2008) – cluster around recurrent
content in stories (Mc Adams, 1997). The identification of key themes does not imply a lack of value to the uniqueness of individuals and their stories, but an opportunity to identify and understand common patterns whilst taking into consideration differentiating aspects of lived experiences (Josselson, 2006).

In thematic coding, the researcher frequently begins with a list of themes known (or at least anticipated) to be found in the data (Ayress, 2008). In this study, the initial codes used came from a review of the literature and allowed me to identify tentative key themes across the stories. I also paid attention to the sequencing and progression of themes within the narrative texts (Squire, 2008). I moved back and forth between the narrative texts themselves and identified themes using interpretative procedures. Pieces of ‘data’ were decontextualised from the narrative text and recontextualised into a theme. Coding categories were reconceptualised, renamed, reorganised, merged or separated as the analysis progressed. It is through repeated reviewing and coding of the data that links between various codes were then made and the relationships among categories began to solidify (Benaquisto, 2008).

Every step of narrative research is always interpretive (Josselson, 2006): from choosing the participants; deciding what to ask them and what to delve deeper into; transcribing from speech to text; making sense of the transcript; deciding what to highlight and what to give less importance to and giving meaning to the narratives. Narrative inquirers work with an attitude of knowing that other possibilities, interpretations and ways of explaining things are possible (Clandinin & Rosiek, 2007). The narrative texts produced can be considered as an ‘open work’ where meaning making is continued by those who read it (Moen, 2006). Looking at narrative texts in this way extends the many possibilities of interpretation.

Analysis and interpretation of data

This section of the paper outlines the key themes that emerged from the analysis of narratives. Even though the participants had the power to modify and interpret their experiences during the study, we – as authors of this paper – would like to point out that the final interpretation of the text is based on our understanding of these experiences.

Values

The values-beliefs-norms theory (Stern, 2000a) proposes that values influence our beliefs about the environment and the consequences of environmental degradation on the things and people we hold dear. Values influence pro-environmental behaviour (Thompson & Barton, 1994; Stern, 2000a; Nordlund & Garvil, 2002) and environmental activism. Although very hard to change, value changes may be the most effective means to achieve sustainable lifestyles. Society, culture and conditions in which we live tend to shape our values and thus behaviours.

It seems that today’s children do not know how to really enjoy themselves. It is not their fault; it is the way in which life has changed since I was a child. Life is faster, and they have adapted to this lifestyle and the stress that it brings along with it. They do not even have the patience to read a book. (Charlene)
Environmental values are often connected and intertwined with other values, such as values associated with family, community and economy that lead to pro-environmental behaviour (Jenkins, Bauer, Bruton, Austin, & McGuire, 2006). Typical examples of such values are the post-war traditional values of ‘non-consumerism’, saving money, non-wastage and taking good care of material possessions. Charlene’s traditional values were handed to her by her family not for pure environmental reasons, but rather for social and economic ones. Still these values are guiding her efforts to live a more pro-environmental life.

Funds are also quite limited. We are quite a big family with five children so money was always an issue. I am not grumbling, mind you, because we have always managed to live with what we have, we never wanted or wished things that were a luxury. I remember that, for many years, we did not have a car, and it took us quite some time and sacrifices to buy one as a family. You learn that you cannot buy everything and that some things are purely a waste of money. You also learn to appreciate what you already have. I have also learnt the importance of saving for the future, a concept that most youth nowadays do not even conceive. (Charlene)

Elgin (2010) would describe Charlene’s experience as voluntary simplicity – a lifestyle that is outwardly simple and uses the minimum amount of natural resources and technology necessary. According to Elgin (2010), this way of life is inwardly rich in its appreciation of simple experiences and pleasures. However, not everyone is happy to cut back on life’s comforts and having to do with less. Doing this is often seen as a sacrifice and, according to Kaplan (2000), describing sustainable living in terms of making sacrifices is bound to be counterproductive.

Contrary to the dominant social paradigm of disposability, Charlene is also guided by traditional values in the way she appreciates and takes care of her things, with the notion that they will last longer if taken care of.

Being the oldest child, I was always quite responsible. I take really good care of everything that I have, and I appreciate everything. Even when I receive a present, I try to conserve the wrapping paper, so I can use it some other time. I still have toys from when I was a child that are still in their boxes. I want everything to be as it should be. (Charlene)

This quote provides evidence how a value is seamlessly translated into pro-environmental behaviour. A person that sees value in taking care of personal material possessions is more likely to understand, respect and take care of the planet’s resources so that they will last longer. Thompson and Barton (1994) identified two motives for the adoption of pro-environmental behaviour:

(a) anthropocentric motives – based on the belief that the value of the environment is relative to its importance and usefulness to humans;

(b) ecocentric motives – based on the belief that nature should be preserved because of its intrinsic value.

Thompson and Barton (1994) argued that individuals engaging in pro-environment with anthropocentric motives are easily inhibited by other human-centred values, such as time-efficiency and material quality of life. Their studies show that the correlation between pro-environmental behaviour and anthropocentric motives was either negative
or not significant. This was corroborated by Mary’s perception that people often give up doing positive environmental actions because they think that they will interfere with their quality of life or become a hassle.

Often, people still want to retain the quality of life they have, and, at the same time, they want to change because of future generations, because they know that this is a moral issue, in a way. Some people are just not ready to change. For example, even though separated waste is collected from in front of each house, a lot of people do not bother to separate waste. (Mary)

An ecocentric perspective towards decision making is one that takes into consideration the interests of the natural environment even when there is no apparent instrumental value to humans (Eckersley, 1992). As opposed to anthropocentric individuals, according to Thompson and Barton (1994), ecocentric individuals are more likely to show pro-environmental behaviour, even if it requires some sort of sacrifice from the individual. This is clearly demonstrated by Robert’s attitude towards driving and by his conversion to vegetarianism.

I really do not like the fact that, when people turn eighteen, they become obsessed with buying a car, and, so, when I turned eighteen, I did not do it, and I actually still refuse to buy one. Maybe my stubbornness is because of laziness, but I’d like to think that it is because I don’t want to increase pollution. I still get into my friends’ cars, but I also use public transport a lot. (Robert)

I started understanding, very slowly, the logic and importance of cutting meat from my diet. ... I completely eliminated meat and started eating fish and vegetables. Then I took a decision that I would not eat meat anymore. It was not that difficult actually. In summer 2008, I also stopped eating fish as I started seeing that there was a big problem with tuna, and the fish that I was actually eating the most was tuna. I was also realising that there were a lot of endangered fish that I was eating. My mother was buying fish that were coming from all parts of the world, like Canada, for example, to try to adapt her cooking to my diet. So I was actually making things worse. (Robert)

The values that individuals attribute to themselves, other people, other living organisms and the environment also guide their environmental decisions and behaviour (Stern, Dietz, & Kalof, 1993; Stern & Dietz, 1994; Stern, 2000a). According to Stern (2000a), pro-environmental behaviour is activated by beliefs that environmental problems will threaten things and persons that are valued. Stern and Dietz (1994) identified three value-based environmental concerns and termed these concerns as egoistic, social-altruistic and biospheric.

Egoistic concerns are based on the belief that the self has more value than other people and other living things. People with high egoistic values are expected to be concerned about environmental problems when the environmental damage is perceived as a threat to the self. They engage in pro-environmental behaviour when this provides personal benefit. Social-altruistic concerns are based on the belief that humanity has more value than other living things. People with high social-altruistic values are expected to be environmentally concerned when there is a perceived threat to other people. They
engage in pro-environmental behaviour when it benefits others. For instance, Charlene is concerned about the environment that will be inherited by her future children.

> Even if I happen to never see the fruit of the work that I do or that FoE does, I would like to think that my children will have the opportunity to enjoy the natural environment, in the same way that I have enjoyed it before them. (Charlene)

Biospheric environmental concerns are based on the belief that all living things have an intrinsic value. Individuals with high biospheric environmental values are concerned when this intrinsic value is threatened. They engage in pro-environmental behaviour even when this does not have an apparent benefit for the self or other people. Mary exhibits such biospheric values and concerns in the way that she has always taken care for animals since she was a child.

> Once, before going to school, I heard a cat crying, and I wanted to go and look for it, but my mum did not let me as I was late for school. You can imagine what a day I spent. I could not concentrate at all at school. I was just thinking of the cat the whole day, and, then, when I went back home from school, it was still there. I could hear it, and then I found it amongst some vegetation in the yard. Obviously, after so much angst, we kept it as a pet. I also had a pigeon that came to me once, and I also took care of it. (Mary)

Stern et al. (1993) conclude that people engage in pro-environmental behaviour as a result of a combination of different values. Individuals do not just harbour egoistic, social-altruistic or biospheric values exclusively, but have differing levels of each of these values, which lead to a combination of concerns and serve as guidance for personal behaviour. Furthermore, Dietz and Stern (1995) suggest that, when taking decisions, people may give different weight to the various values depending on their role and circumstances at that particular situation. Poortinga, Steg and Vlek (2002) claim that these relationships between values, environmental concern and behaviour are far more complex. Decisions may not always be the result of thoughtful decisions. In certain situations, when required to take quick decisions, the influence of values is lessened or the importance which we give to different values is altered (Dietz, Fitzgerald, & Shwom, 2005).

**Self-efficacy and locus of control**

The locus of control represents an individual’s perception of whether s/he has the ability to influence life events through her/his own behaviour (Hungerford & Volk, 1990; Newhouse, 1990; Ozmete, 2007). Individuals possessing an external locus of control feel that luck, destiny or powerful others shape their future. Such individuals believe they are powerless and that the outcomes of situations are beyond their control. On the other hand, individuals having an internal locus of control perceive themselves to be in control and that their actions can bring about change and affect the outcomes of situations.

If people feel that they can control some feature of their external world, they are more likely to work actively towards improving it (Cleveland, Kalamas, & Laroche,
According to research, individuals with an internal locus of control are more likely to engage in pro-environmental behaviours (Hines et al., 1986–1987; Smith-Sebasto & Fortner, 1994; Hwang, Kim, & Jeng, 2000; Bamberg & Moser, 2007). For instance, an internal locus of control has been found to specifically influence energy conservation behaviour (Balderjahn, 1988) and recycling (McCarty & Shrum, 2001; Shrum, Lowrey, & McCarty, 1994). Yet, some studies (for instance, Hamid & Cheng, 1995) contradict this.

The participants’ narratives indicate that they all have a strong internal locus of control. Robert believes that through his actions with the local council he can help to improve the area in which he used to play during his childhood.

*I am, at the present moment, reviewing a development plan of Wied Blandun that was sent to me by the local counsellor in charge of its upkeep. This is the area in which I used to play when I was younger. I know what the problems in the area are, because I have grown up there. Some areas are derelict and used by drug addicts, so cameras have to be placed in strategic locations. The little undeveloped land that remains needs to be protected and more indigenous trees should be planted. The area will hopefully regain its former glory and be used in a positive way for and by residents.* (Robert)

Charlene believes that she can improve ecotourism in Malta by helping farmers to apply for European Union funding to upgrade their farms.

*I am, at a point, where I would really like to do something. I would like to make things change and to see more locals and tourists alike appreciate Maltese nature and its products. In fact, I am working on a project with a friend of mine, and together we are trying to secure some funds for a particular farmer in Gozo. He has asked us to help him to make his farm more attractive to tourists and locals to come and visit.* (Charlene)

Self-efficacy is the belief in a personal capability to achieve a goal. Believing that you can perform an action will increase your chances of actually doing it. Mary has shown high self-efficacy by significantly affecting the environment at her workplace with regards to recycling, even convincing others to participate (Stern, 2000b).

*I remember that one of the first things that I did when I joined the office was that I spoke to my boss and told him that it would be a good idea to start some waste separation; at least we start from paper, because paper is something that in an office is used all the time. I used to discuss a lot with my colleagues during coffee breaks, in the kitchen, and there were people that used to really try to convince me otherwise telling me, “But why are we going to go through this hassle to do these things?” There was one particular person that used to say that our separation would be useless as rubbish trucks still mix everything together. I used to tell them that, if we take the paper directly to the collection site and we see that it actually gets there, we would be sure that our efforts were not in vain.* (Mary)

People who are unmotivated towards the environment often have a sense of helplessness regarding the environment (Pelletier, Dion, Tuson, & Green-Demers, 1999). Individuals with low self-efficacy are still concerned about environmental issues, but when challenged
Positive youth action towards climate change

with complex issues like climate change, they do not know where to even begin, and the tendency is to do nothing. In fact, Kaplan (2000) found that people do not engage in pro-environmental behaviours not because of a lack of interest or concern for environmental issues, but rather because they are inhibited by a sense of helplessness. This is understandable since most environmental problems are large and complex with no immediate and simple solutions, so people feel helpless on their own. People with an external locus of control and low self-efficacy, need to be convinced that there are things that they can do to contribute towards the solution of environmental problems. This can be done with the help of campaigns that illustrate how they can help the environment in small yet significant ways. In fact FoE Malta launched a number of projects which directly target such individuals.

One such project was called “The Climate Is Changing ... Are You?”. Rather than just frightening people about the effects of climate change, the project aimed at informing the public through posters, leaflets and media clips about climate change and what individuals could do to mitigate its impact, thus empowering people to look for and become part of the solutions. When people learn about, understand and engage in pro-environmental behaviours, they will feel more competent about the solutions and are, then, more likely to adopt such behaviours (De Young, 2000). Encouraging specific, concrete actions that are effective, even if small, is a promising initial approach because everyone can do this easily, and the collective result is quite considerable.

Since becoming a climate change campaigner, I have also become more aware of the issue and my energy consumption. I am very careful with not wasting energy, wherever I am. I am always the one that switches lights off all the time, bugging my family incessantly. I know that it is a rather small contribution, but I believe that first steps are very important. If everyone had to be conscious about their energy consumption, the problem would be very much reduced. (Charlene)

Experiences with this group revealed that even though the internal locus of control seemed to dominate, both internal and external dispositions co-exist within young environmentalists. Their experience with the group dynamics and the local and international political scene taught them whether and to what degree they can exert control over situations. For instance, Robert gets many ideas from his involvement with Young FoEE, but he feels that he cannot implement them because of the really small number of volunteers. He also feels that his ideas are often shot down by others. On a more general scale, the environmentally inappropriate behaviour of large corporations and the government makes the participants feel powerless at times, stirring up feelings of anger that are not only directed towards the entities and the system, but also towards their sense of helplessness.

In Malta, we speak a lot about ideas like ecotourism and lately ecoGozo, but, often, nearly nothing gets done, and people do not even get to know about these things. (Charlene)

Even public consultations are a bit of a sham in Malta, where people do not have a real opportunity to give their opinion, like having a consultation over one day in the morning, the peak time when people work. (...) The Maltese way of doing things ensures that the people with the money and power are
the ones who always acquire even more, and the people that have neither remain empty-handed. (Charlene)

When I was at university, I had to find some part-time work because I needed money, and so I started working with a multinational burger company. (...) I used to be disgusted by the amount of rubbish generated and food that is thrown away. The amount of packaging used, for example, was horrific. (...) The room in which we used to throw the rubbish used to be literally packed till the roof. I did not last long as I quit from working there. (Robert)

Then recently, there was the new power station issue. A new power station. And it is still going to be using fossil fuel and, thus, old technology. There were also a lot of intricacies in the way the contract was given. All of this dampens any hope that things are going to change in Malta. We have been playing around too much on the wind energy issue. First, having turbines on land was a definite no, and then it was a yes and then a maybe. It is true that we have little space on which to locate the wind turbines, but, still, all of these games tend to confuse people. (Robert)

Green jobs are really limited in Malta, not just in the governmental sector, but also in private industries and companies. I believe that a lot needs to be done about jobs in this sector. There is a gap that we need to try to fill up. (Mary)

This sense of helplessness is relieved when there is an actual contribution to a successful outcome, and the volunteers again gain confidence in their power and ability to bring about change. Political activism requires loads of energy and perseverance, but, at the same time, it can make you feel that you are the agent of a ‘revolution’ – of change!

At least we reached a point where our goal was actually mentioned at parliament. Other NGOs were also agreeing with us on the media. It was very positive. I think this was one of the top things that we managed to achieve through the campaign, and I think everyone was really proud of that moment. (Mary)

Organised group activity can build a sense of collective efficacy (Oskamp, 2002). Even though individual action is important, organised activism is frequently necessary when dealing with large-scale issues since the culprits are very often governments or powerful corporations, against whom, individual action would go unnoticed (Oskamp, 2002). Being part of an international organisation brings about the realisation that other groups in other places are also working for the same goals. Knowing that other young people are successfully achieving results may reduce the feelings of helplessness and the notion that nothing can be done (Kaplan, 2000).

... the first Young FoEE summer camp. (...) It was really awesome, because even though we are still young, we already have lots of things to share. A camp like this mobilises young people and enables them to learn from each other. It is a source of inspiration and motivation to try bringing about change around you. Networking is also important in such events, and we
started to work together to plan actions for the upcoming Copenhagen climate change negotiations. (…) I was so energised that, as soon as I came back from the conference, in January, I coordinated the climate change campaign before the Big Ask campaign started. (Robert)

Knowledge

Whether and how we react to knowledge about environmental problems depends on whether we understand and accept that knowledge, which in turn depends on our past and present experiences, our sensitivity and so on. In other words our reaction towards new knowledge will depend on our perception of it. Mary, in fact, noticed that during her university course not everyone reacted to knowledge in the same way that she did.

I was always usually the one most irritated during lectures when I hear about some things that are not carried out as they should be in the environment sector, as these finally would have an effect on us. (Mary)

This difference in reaction might be rooted in the different values held by Mary and the other students. Values may function as filters for information. Information that agrees with our values tends to be accepted while information that clashes is rejected. Habits might also result in selective attention. People are more likely to consider new information that is already in line with their behaviour than information that will require changes to their habitual behaviour. Ignoring information that challenges our comfortable lifestyles is a coping mechanism that makes living with incongruencies less difficult (Jensen, 2006).

Experiences in nature

Tanner (1980) tried to identify significant life experiences in conservation activists and leaders and claimed that “youthful experience of outdoors and relatively pristine environments emerges as a dominant influence in these lives” (p. 23). All three participants in this study have vivid childhood experiences in rural areas where they bonded with the natural environment. For Charlene, the time spent at her grandparents’ farm that she visited regularly as she grew up was a very important memory.

I have many memories of this time, such as when I tried to get on my grandfather’s mare, she threw me off. My siblings and I spent our childhood running in the fields picking capers and flowers and looking for snails. This was the best time of my life, and it will not come back. These things have sort of ended nowadays. I wish I had the time to relive those moments. (Charlene)

Even for Robert being in the family fields when he was a child was something that he thought was important in shaping his love for nature.

My father has fields in Marsaxlokk, and, ever since I was a small boy, I used to spend time in my father’s fields, playing. It was a very happy time in my life. (Robert)

Mary’s family did not own fields, but they still lived in an area close to fields, and her childhood play was surrounded by these fields.
When I was a child, I used to live with my family in Xg’ajra. There was a really big field in front of our house, and the whole area was very rural, with passageways that lead to the sea. When I looked out, in the distance I could see the sea. My brother and I used to spend a lot of time playing outside and in the fields. My brother was always a little bit more naughty and daring than me, and he used to jump over rubble walls. (...) This contact with nature when I was a child was very important in shaping who I am today. It was a very happy childhood, and I look back on it with nostalgia. (Mary)

It seems that experiences of engagement with the natural environment during childhood cling on to the individual shaping his/her subsequent environmental path. It is easier to love what you know through a cherished association. Regular positive experiences in the natural environment allow children to form a relationship with it, encouraging a love of nature (White & Stoecklin, 2008) and the fostering of pro-environmental values through regular positive experiences in nature (Chawla, 2007). Other researchers have noted that significant life experiences in natural settings are important in developing positive perceptions of nature, positive environmental attitudes and, more importantly, environmental action (Palmer, 1993; Bögeholz, 2006).

Wells and Lekies (2006) found that experiences in the natural environment before the age of eleven were the best predictor of adult environmental behaviour. Moreover, they claim that although domesticated nature activities (like caring for plants and gardens) fostered pro-environmental attitudes, their effects were not as strong as participating in ‘wild’ nature activities, such as camping and hiking. However, the study by Wells and Lekies (2006) did not consider post-childhood experiences. Adolescent, youth and adult experiences might also be important in instilling a love for the natural environment. Robert remembers with nostalgia not only his childhood carefree days in nature, but also his teenage years with his friends.

I live in Fgura, in front of the only agricultural fields left, and I think that this has allowed me to appreciate nature and the environment a little bit more. When I was a teenager, my friends and I used to play in the fields in front of my house. Every Saturday morning we used to go and spend whole days running in the fields. (Robert)

Charlene also speaks enthusiastically about her experiences in nature when she was researching for her dissertation.

It was a really fantastic experience that I would definitely try again. I was in contact with animals, milking sheep and collecting eggs. I held a chicken with my hands and for me, touching an animal is already a valuable experience in itself. My boyfriend came with me, and he participated in things that he had never imagined that he would do, not even in his wildest dreams. I did not think that he would be such a sport, being from an urban city and lacking any contact with nature. But he definitely enjoyed it. It was literally a wow experience, even my boyfriend agrees. And that is saying something. (Charlene)

The experience of nature’s beauty leads people to regard nature with respect and reverence because it helps them to realise its intrinsic value. Robert appreciates the opportunity he had to travel and experience living in nature – something that is very difficult to do in Malta.
I went to a youth exchange in Romania on Green Therapy! The programme was conducted in nature all the time, and the feel of it was so intense. (Robert)

For Mary, the contact with nature also instils in her an experience of freedom.

I remember that I really used to enjoy the fact that I was often outside and not enclosed at home. I really loved the open space and the sense of freedom that it gives you. Today as an adult, the sense of carefree days may not happen so often although the sense of freedom is still with me, and, thus, I tend to appreciate such opportunities much more. (Mary)

Ironically, we live in a time in which many people experience nature virtually though online information or nature documentaries rather than direct physical contact with the environment. Pergams and Zaradic (2006) reported a significant relationship between a steady annual decline in visitation to National Parks and an increase in virtual entertainment such as playing video games and surfing the internet. They suggested that in childhood, outdoor activities are, in fact, being replaced by such virtual activities. A study of primary schoolchildren in the UK revealed that children aged eight and over were better at identifying characters from Poke’mon (a card-trading game) than familiar organisms such as a beetle (Balmford, Clegg, Coulson, & Taylor, 2002). This disconnection from the natural environment was termed ‘nature-deficit disorder’ by Louv (2005). Today, most children and youth live in urban areas and experience artificial environments more than they do the natural outdoors. This was duly noted by Charlene.

I think there should also be more recreational areas where children can play and be in contact with nature rather than having artificial playgrounds with plastic floors, plastic houses and plastic everything. If people have more opportunities to enjoy the natural environment, then they will start caring more for it. (Charlene)

At the end of a school day, most Maltese children are shuttled from one activity to another – ranging from football, dance and drama classes to piano and private lessons – and their little free time is then spent in front of the TV or a computer screen. With all the good parental intentions most children are being subjected to a hectic, artificial and electronic childhood that is interfering with their holistic development.

Today’s children cannot appreciate these things. My younger siblings did not experience this as there is quite a gap between my sister and I, and the twins. When the twins where young, my mother had to go to work, something that she did not have to do when I was a child. So she had much more time to spend with my sister and I, and we often spent that time outside, near the beach or in the countryside. (...) Sometimes though, I actually feel sorry for them as their childhood was much less fun compared to mine. They spend most of their free time playing on the computer or watching television. (Charlene)

The number of studies showing that environmentalists tend to report significant childhood experience in nature leads one to assume that the lack of such experiences in the lives of today’s children may negatively impact the availability of environmentally responsible citizens. The introduction of ESD programmes in a number of schools can be viewed as step in the right direction to address this lacuna. However, the type ESD that
is really needed should go beyond the school gate. The problem with most current ESD programmes is that they try to feed knowledge and demand responsibility and action before children have been allowed to develop an intimate relationship and connection with the natural world (Sobel, 2008; White & Stoecklin, 2008). In the past, Maltese children could experience unstructured ESD at weekends and after school with their family or friends, in the fields and/or in natural settings. Nowadays, this time seems to have been taken up by other activities.

On winter Sundays, up till the age of about fourteen, I used to go hiking and camping with my family in nature. We often used to go to Buskett or Chadwick Lakes for our Sunday outing and to other places in the countryside. It was a very relaxing time spent with my family. We used to play games such as hide and seek. (...) Sometimes we used to go as a whole family with aunties, uncles and cousins. We used to go to Kennedy Grove, riding bicycles, running and playing. These were memorable times in my life, and I really treasure them. These were also times that bonded us closer together as a family. (Charlene)

There is huge potential for parents to both instil this love of nature in their children and spend valuable time with them (Cleary, 2007). Positive direct experiences in nature with a significant adult, such as a parent or a grandparent, stimulate a love for nature, a genuine interest in environmental knowledge (provided in formal ESD programmes) and eventually generate environmental action (Palmer, 1993; Chawla, 1998, 2006; Kals, Schumacher, & Montada, 1999; Schultz, 2000; Sobel, 2008; Wells and Lekies, 2006; White & Stoecklin, 2008).

Young children also have a natural affinity for animals (Sobel, 1996). Animals are an infinite source of wonder and curiosity for children. Taking care of animals at home can also help to promote an attitude of care and responsibility towards living things.

We always had pets at home, either a cat or a dog or anything really. We really loved them, as a family. (...) A pet teaches you how to care for something living. It takes a lot of care and patience to have a pet at home. Especially if you have a dog, you need to feed him, play with him and take him out for walks. I was always interested in animals. (Mary)

Having a direct contact with nature allows you to appreciate it more. There are children that have never seen live animals. I have always been in contact with animals, and it must be the reason why I love them so much. (Charlene)

Animals and children seem to have a close connection, and, in fact, studies of small children’s dreams reveal that about 90% of their dreams are about animals (Patterson, 2000). Children have the ability to interact with animals in an instinctive way. They often talk to them as if talking to a friend and invest in them emotionally.

I remember that once, in our garden, we had an insect pupa, and it fascinated me so much that I used to go and observe and keep an eye on it. Until one day it wasn’t there anymore. It vanished. I realised that obviously it had turned into a butterfly. Even though I knew that, I was still very much in awe of it all. (Mary)
The experience of nature is also an important motivation for people when they involve themselves in the environmental political sphere (Trittin, 2009). This experience does not have to be positive; negative experiences can also instigate political actions. For instance, environmental activists often mention the loss associated with the destruction of their childhood special place as a reason for their activism (Shaw, 2000). This is certainly Robert’s experience.

> Through time, I watched a lot of fields in Figura being destroyed. This has pained me, and, in fact, I have become part of a committee within the Figura local council with the aim of conserving Wied Blandun, which is a valley of ecological importance. (Robert)

**Role models**

According to the social learning theory, behaviours can be learned by observing others, who are referred to as ‘models’ (Bandura, 1977). When asked what prompted their environmental commitment, environmentalists mention special childhood places in nature and family role models that showed them the value of the natural world (Chawla, 1999, 2007). This trend was also confirmed by Berkowitz (1987) while investigating a group of people who initiated grassroots community organisations. Children need to see significant adults respecting and loving the environment in order to develop that same respect and love.

The participants in this study also had or still have a beloved family member that exposed them to nature and taught them to appreciate life in all its forms. Charlene’s father has always been a lover of nature, and she realises that his attitude towards it was important in shaping her own environmental attitudes and values.

> I would like to think that I have inherited my father’s character. He is a lover of nature. Every spare time that he has, he goes out somewhere where there is some greenery. He has always filled our home with life, building a greenhouse, having pets and other animals. I think that he has influenced me a lot, and my efforts to improve the local environment would be worth it, even if they were just for him. (Charlene)

Through what they attend to with care or fascination, parents indicate to their children what has value. Mary’s parents are keen gardeners, and, through gardening, they have influenced Mary’s perception of the natural environment.

> My parents are really into gardening, and we had quite a big garden with trees. They actually also extended it, to have more space for trees. They have all kinds of plants at home. I was always surrounded with plant life and learnt a lot about nature through them. I am not really knowledgeable about plants and plant life, and I really wish that I knew more. I really admire people who are really into nature and know the names of plants and where they grow and their characteristics. I really enjoy listening to explanations about plants and how they grow. I am always eager to know more and more about these things. (...) My mum also used to listen to a lot of radio programmes about growing plants, so these were always at the background, and I guess I was subconsciously listening to them as well. It is later on in
life that you realise that these things leave an impact on you, even though they do not seem so important at the time. (Mary)

Through their own relationship with nature, significant adults communicate nature’s value and, thus, promote the child’s interest and care towards it (Chawla, 2007). Apart from giving a sense of value to nature through her care for plants, Mary’s mother tried to teach her that insects are an important part of nature and that they are not scary. Mary sees her mother’s efforts as important in shaping her perception of the environment.

I am really afraid of insects, and my mum often used to send me cutting fresh herbs from the garden for cooking. I used to be really afraid, having to pass through so much vegetation, always with the fear that an insect was going to fly on me. Later on, I discovered that mum used to send me cutting herbs on purpose, to reduce my fear of insects. I think that the family’s attitude towards nature and the environment in one’s upbringing is very important to shape one’s values. I was always surrounded by a love for nature and living things. Maybe that is why I have grown up with this same love. (Mary)

According to Kollmuss and Agyeman (2002), nature experiences and environmental family values are meaningful to children, whereas environmental role models such as friends become important for adolescents and youth. Peers were mentioned by Robert as a factor which helped him to turn to vegetarianism.

I also had some positive peer pressure as well, from some friends who are members of Graffitti, a radical NGO in Malta and from other FoE members. (Robert)

Peers were also found to be influential in convincing participants to join FoE and becoming authentically involved later on.

Formal education

Formal education is often assumed to increase an individual’s concern about the environment (Ignatow, 2006). This assumption is not totally unfounded. Klineberg, McKeever and Rothenbach (1998) reported that “younger and better educated members of the public do indeed appear to be more concerned about issues of environmental quality and are more committed to environmental protection” (p. 749). A number of studies reviewed confirmed a positive relationship between environmental attitudes and level of education (Tognacci, Weigal, Wideen, & Vernon, 1972; Hines et al., 1986–1987; Eckersley, 1989; Aytülkasapoglu & Ecevit, 2002).

I think that, in my case, though, it was education that had the greatest impact in shaping my environmental values and beliefs. (Robert)

Although ESD has always featured in various subjects, in Maltese schools, it has never been a compulsory component of the curriculum (Pace, 1997). The introduction of ESD in the curriculum as a cross-curricular theme is only a recent development (Ministry of Education, Employment and the Family, 2011). For Mary and Robert, the subject that seems to have helped in transferring knowledge and shaping their attitudes was geography.
Geography has satisfied my curiosity of the world. (...) I like especially the human impacts part of geography. It makes you realise how much things are connected and how if you change one thing, it will have like a ripple effect on so many other things. (Mary)

(...) probably choosing geography was quite a coincidence, since it was offered in conjunction with the subject I really liked. (...) Then, I continued studying geography and history at Junior College as advanced level subjects, and I also went on to read for a degree in geography and archaeology. I guess studying geography was a very constant feature in my life. In geography, you always learn about environmental issues, like global warming and other such issues. I think that as a subject it gives you a wider perspective of the things that surround you or rather the environment. (Robert)

The participants in this study all have a first degree. One participant also has a Master’s degree (Robert) and another is reading for one (Mary). They see their studies at university as a period of consolidation of their interest in environmental issues.

At the end of my course, I started asking myself what was going to happen once I finish university and how I was going to get more involved in the area of environment. Geography, being a vast subject, had prepared me to open up to different aspects of issues. (Mary)

Then, at university, we started a credit on sustainability, and one of the sessions was on alternative tourism and ecotourism. I realised that I had found what I was looking for. (Charlene)

From my experience at university and FoE, I started realising that it was not waste that was interesting me the most, but I was becoming more interested in aspects of human environment. I met up with an expert from university, and we discussed a lot about the United Nations, conventions, education for sustainable development, and I started opening more to what is happening on an international level and what is not happening in Malta. From there, I had a growing interest in sustainability issues. I started reading more to fine tune what I really wanted to focus on. I decided that I did not want to read for my master’s degree with the University of Malta. I found a degree on sustainable development with a foreign university. I am finding it really interesting, because it touches on a lot of topics, and I am the sort of person who prefers to know about many different things, without needing to get into depth. I prefer to have a sort of global perspective of different issues, and, in this degree, I am having the opportunity to study different modules that have got to do with sustainable development. (Mary)

However, Mifsud (2008) points out that although there is a correlation between knowledge and attitudes and between attitudes and action, there is no significant correlation between knowledge and action. This might be the result of the predominant content-based teaching methods that are structured around teaching as opposed to learner-centred approaches that depend on learning.
Non-formal education

An important but generally forgotten aspect of ESD is environmental political education, which focuses on how changes can be achieved via political activism directed at governments, international organisations and corporations (UN, 2004). This seems to be exactly the type of non-formal education that the participants are receiving from FoE – an education that is also made available through training projects in other countries. These projects seem to impart a sense of partnership with others and a widening of perspectives about a variety of global social and ecological problems. However, the dominant benefit reported by the participants of this study is the educational impact of first-hand action-oriented activities they experienced.

To help us to start off with the campaign and to strengthen the organisation, we took part in a capacity building project. This was a training project that took place in England and some other countries that were involved in the project. (...) This was one of the most challenging moments of my experience with FoE, and it helped me to grow a lot. During this project, I had the chance to take part in training and, then, to apply what I had learnt here in Malta. I went for this training with another person from the board, so that we could support each other. It was a really good training, in which I learnt about areas that the university course that I followed did not present. I learnt about things that are important in practice, like communication, public relations, campaigning, activism and about strategies such as how to push for an agenda, how to approach different types of people, different sectors, like the government or the public. This opportunity was like a springboard to me. It also enabled me to relate aspects of the Maltese society with others from other countries and helped me to start seeing the common aspects and differences between FoE in Malta and FoE in other countries. I learnt about the particular issues that each organisation fights for and about different cultures, how they influence environmental issues. It was a wonderful experience for me, and I think that it was during this time that I really felt that FoE is MY organisation – this was and still is my kind of thing. (Mary)

The conference was a turning point for me. I experienced being a vegetarian for the first time. I also met people who were hard core environmental activists, and I did some activist work myself, like being body painted in front of the parliament in Berlin. I also learnt a lot from people, during workshops and lectures. Some were actually experts in the fields of energy and climate. It was an excellent experience for me. One that has changed me, I would say. (...) Also, in June, I went together with three other members of FoE Malta, to the YouPEC 2008, in the Netherlands. The theme for 2008 was about the sustainable consumption of resources. We followed workshops, participated in discussions and gave and gathered ideas for projects in open space sessions. We also met with a lot of environmental activists, especially from Scandinavia and the Netherlands, who are radical on climate change and consumption in a way that has definitely not yet been seen in Malta. (...) I learnt a lot about the different projects that people are doing in their countries. You realise that you are not alone, no matter how lonely you might feel in your respective country. (Robert)
Informal education

In the 1990s, the Secretariat for the Environment (a government agency), launched the Xummiemu campaign targeting school children. The campaign aimed at developing pro-environmental behaviour through a well planned media spots featuring Xummiemu – a cartoon hedgehog adopted as the Secretariat’s mascot (Pace, 1997). The campaign also seems to have strongly influenced all three of the participants.

When I was about nine, there was the Xummiemu campaign. It was an excellent campaign against littering especially. I was exposed to it at school, through the student magazine (...) and through the media. As kids we were really on to Xummiemu. (...) We used to be like brainwashed against littering. If other kids saw you picking up some rubbish, they used to tell you, “You are like Xummiemu.” I was so into it that I used to actually pick up litter near my house from the street. My mum was not so keen though, she did not like seeing me pick up rubbish with my hands. It was not very hygienic, but I still did it. (Mary)

When I was seven, there was the Xummiemu campaign, and I remember that I was crazy about the Xummiemu books. (...) The campaign also featured good promotional material like stands at the Malta Trade Fair, and I also remember the letters that I used to receive from the Klabb Xummiemu. There was also a section about the campaign on the student magazine. (...) The campaign and its promotion must have been really good as I remember nearly everything about it. It has probably influenced me, even if just a little bit. It created a lot of awareness against doing certain things. The emphasis was on littering. I remember all kids my age being really obsessed about not littering. It was definitely a good brainwash. (Robert)

When I was in primary school, I was given an application to become a member of the Klabb Xummiemu, and my mum filled it up for me. I used to receive a lot of things from Xummiemu, and I still have the birthday cards that I received from him. The Xummiemu campaign was quite successful, and the character was portrayed as a friend and someone that young children could associate with the environment. There used to be a lot of activities for children in the campaign even though I do not remember ever going to any of them. It was sort of a start in environmental education campaigning, and it was successful enough to have all kids really keen on not littering and actually collecting litter. (Charlene)

Robert also highlights the power of the media when he recounts that a documentary about hunting in Malta pushed him and other young people to do something about the issue.

This year, I went to see the documentary “Birds, Bins and Bullets” at the cinema. This documentary is about a group of English birdwatchers that worked together with the police and volunteers from BirdLife Malta to help in the fight against illegal bird hunting. I was so impressed by the volunteers whose cars were badly damaged and also shot at that exactly after the documentary had finished I contacted the conservation manager and told
him, “I want to help you.” BirdLife then organised a meeting for new volunteers, so the documentary must have touched others like me, and, one or two weeks later, I was helping them in the spring camp. (Robert)

Personal challenges in environmental volunteering

The personal challenges of individual volunteers influence their capacity to work with an organisation. Volunteering exerts additional pressures on volunteers who are already finding it difficult to cope with life’s pressures, such as family, work and professional development.

I think that, in Malta, we have quite a problem with volunteers. Everyone seems to be really busy, including the coordinators. FAA – another NGO – for example, has a coordinator who is a full-time volunteer. But we do not have that. Our reality is quite different. Our coordinator has a full-time job apart from his voluntary work, and it is quite difficult to manage giving one hundred percent in both. (…) Sometimes, even I feel like giving up, and, every now and then, I spend some time when I am not active, either because I cannot keep up with things or because I am discouraged. (Robert)

Maybe the climate change law is achievable, and we need to do more events, but we cannot do them with all the things that we have on our hands. Volunteers work, have relationships, children, and you realise that there is a limit to how much things we can do. Everyone pitches in, whatever they can and you just need to appreciate that. (Mary)

Sometimes volunteers are assigned too many tasks, and they experience a ‘burn out’. This usually happens to volunteers who find it difficult to say no and continuously undertake more and more work and responsibilities, even though they know that they cannot cope with them.

Sometimes it becomes difficult to keep up with everything. I usually attend meetings regarding Young FoEE as I am in the steering group, meetings to plan conferences and actions and so on. Sometimes I become overloaded, and, then, I switch into slow mode. (Robert)

Teamwork is very important in an organisation, and members often need to feel part of a team to be able to give their utmost in a project. This is exactly the case with Robert.

I was working on a photographic exhibition on climate change, on my own, but it did not work out. When I am not working in a team, I become lethargic, like when you feel really hot and feel like you cannot absolutely do anything except sleep, and lately the team-work has been missing a bit from FoE Malta. (…) When you have a strong team, actions will work much better. (Robert)

Teamwork is an important concept in organisations, but it is not always easy to achieve it. Teamwork does not only mean working in a group, but it implies nurturing a sense of oneness and the belief that the organisation’s mission and vision can best be achieved by working together. Consequently, a very challenging time for a volunteer is when s/he experiences little or no sense of achievement after giving so much time and energy towards the aims of the organisation.
Sometimes the results that I see from our work are minimal. I don’t know if I am being pessimist in this case. It could be, because I am an ambitious person, and I am not seeing enough results. Sometimes I speak to friends, and they tell me that FoE is not really loud, and it’s true, probably because we are all volunteers. I think we have to concentrate our energy more, especially on particular areas. This is maybe the reason why I am being a pessimist in the way I see things, because I fear that we are not making a lot of change. There is some short-term effect when we have events and speak to people or when we sometimes attended informal meetings and consultation meetings, but you don’t necessarily see the change. Each action or event, is probably a very small step towards a bigger goal that is not necessarily understood by the organisation. I wish to see more change and results that are more tangible. (Mary)

To be honest though, I am not very happy with the way things are going with FoE in Malta. I am afraid that the current campaign will not be successful. We need to be much more constant in our work, barging on the media incessantly. If we keep on doing sporadic activities, people will keep on not knowing much about us. (Robert)

Motivators

People volunteer for a variety of reasons, some altruistic and some based on self-interest. Omoto and Snyder (1995) suggest that having personal and self-oriented needs served by volunteering is what keeps volunteers actively involved. There are many ‘benefits’ that an active membership in a voluntary organisation provides, and different people gain very different things. Nevertheless, it is very difficult to pinpoint one ultimate motive why someone keeps on volunteering because human beings want many things – not just one (Midgley, 1978).

The sense of competence experienced when challenges are met and the organisation is successful in its outcomes, provides an intrinsic satisfaction for volunteers (De Young, 1996). Manzo and Weinstein (1987) claim that this ‘feel good’ factor motivates people into taking an active role.

There are challenges that give you a real satisfaction, like when you meet with different people and speak face to face and when you discuss things with other volunteers. (...) Whatever action we do, however small or big it is, we always feel good afterwards. (...) feel proud that I am doing this practically. (Mary)

Even though Mary has a full-time job in the environment sector, she still feels that volunteering gives her more satisfaction.

Even though you still feel that you are giving a contribution towards the environment, and it is something that I enjoy doing, it is always work, and the satisfaction that you get from doing it is sometimes less than when you do something voluntarily. (Mary)

She also feels that her work with FoE gives her the opportunity to address areas that are neglected in her work.
With FoE, I try to give more priority to areas that I do not give to at work, so that I am also doing something different. From the full-time work that I do and get paid for, sometimes I miss that I don’t see society’s pulse. I do a lot of bureaucratic things, which are part of the job and which are needed. (...) At work, I miss the face-to-face contact with people outside, and that is something that FoE gives me. (Mary)

Members sometimes feel that they are very much needed by the organisation, and, thus, they cannot just walk out of it. Their volunteering is powered by their commitment to help.

I do not find it in my heart to stop (...) as I know that the issues are still there and that I have to help in any way possible. (Robert)

I am also involved in so many activities and projects within the group that I have to stay to see them through. (Charlene)

The three participants also find working with others towards a common goal as motivating.

However, one of the most amazing things is working with a group of like-minded people and then effectively see changes in the things you campaign about. So it has been a great and rewarding experience. (Robert)

Working in a team always leaves a positive feeling. Sometimes we speak to people after an action, and then we all enthusiastically share the feedback from the public. I think this really builds us. (Mary)

I know that it sounds like too much work, and sometimes it is, but I am very much encouraged when I see other people in the team working, because they are all busy people, but they still dedicate all the extra time that they have towards the environment. (Charlene)

Working together in a team not only offers the opportunity to interact with other people on an acquaintance level, but it ignites even deeper relationships with others.

I feel really at home and comfortable with FoE. I enjoy meeting new people when they join in and building relationships with the people already there. The greatest friendships, I think, are built when people go abroad together, because you build something together. When you literally live with others, even if for a very short time, you can identify their values, knowing that they are sort of on the same track as you, and you feel that you are doing something together, something that you really believe in. It’s challenging, and it’s fun. (Mary)

The importance of friendships among members is viewed by Mary as a motivation to stay within the organisation.

I think it is a circle that won’t die easily as each person, each volunteer strengthens it. (...) I also met some really nice people in the process, who will definitely remain my friends. (Mary)

Getting recognition for the work that you do makes you feel appreciated, and this feeling could be another motivation for staying on.
Within FoE, I found people that really care about others and that appreciate the work that you do. The first time that I was thanked for giving a good idea, I was speechless. I had never been treated that way. I always feel that people are somewhat using me. Sometimes, I really feel down, because I try to give everything when I am working on something, and then others do not give back as much, they just rely on what I have done. This breaks your spirit, but, with FoE, I feel that I receive a lot in return, even if just appreciation. I also feel very welcome. I think these are the things that really keep me going with FoE. (Charlene)

Being part of the group seems to provide Mary and Charlene with an opportunity for learning. The type of learning gained is more focused on holistic personal development such as thinking skills, self-esteem and social skills. It is also more practical, and the knowledge obtained is more in line with local issues than that gained through formal education.

I am continuously learning from this experience. I am learning new skills, meeting new friends, seeing different perspectives and believing more in myself. (Charlene)

As soon as I joined, I also had the opportunity to also become a member of the board, so I had the chance to listen and learn more about certain areas and issues that FoE was lobbying for. The type of knowledge that I get from being involved with FoE is more practical than the knowledge that I gained from university. Being active in the environmental field puts you more into the actual situations. You become more in touch with the real issues that are affecting Malta and the rest of the world. (...) On the other hand, my background with FoE and my studies also help my thinking skills and (...) take a different approach to various issues at work. For example, when I have a meeting about an issue, I usually go beyond as some issues are very much linked to others. Since some experts, in view of their expertise, are focused on one or two matters, other areas may be overlooked. I ask about the other areas, I feel it is important not to overlook things. (Ö)

Mary also thinks that her work with FoE complements her studies.

Being part of FoE really helps my studies, because I constantly learn about environmental matters and work on issues which are important for Malta. At the moment, there is a big question mark about what I am going to do for my thesis. Slowly, I am finding out which are the areas that I want to tap into. The fact that, through FoE, I meet people that are sort of the gurus on particular issues helps me to get more informed about the situations in Malta and globally. (Mary)

Mary acknowledges that through her involvement with FoE she became very interested in pursuing a job within the environmental sector.

Through FoE, I started to get really interested into even working within the environmental sector full-time. It was becoming quite important for me, because I have a passion towards the environment, and I felt that I wanted to find a job that matches that passion. (...) I managed to start working in
the environmental sector within the office of the Prime Minister. I felt really pleased when I found this work; because I knew that I was going to learn more about issues that Malta is facing and that, in some way or another, I could also give my contribution. (Mary)

On the other hand, Charlene, who is also trying to find a job in the environment and tourism sector, has been so far unsuccessful. Still she feels that her work with FoE is giving her the opportunity to learn new things and to obtain experiences which will help her in the job market.

Right now, I am working on sponsorship for FoE Malta, and I get to meet people, like businessmen, talk to them to convince them about our work and to sponsor us for events like the photographic exhibition that we are launching soon. Recently, for example, I met up with someone who sells solar panels. This is all valuable experience for me. (Charlene)

Robert really loves travelling and getting to know other young people from around the world. His narrative and energy is fuelled by his various international experiences provided by his involvement with FoE and Young FoEE. However, he admits that his constant travelling goes somewhat against his campaign against carbon dioxide emissions.

International experiences have enhanced my work with FoE in Malta. I am not very comfortable though with the fact that I have to always catch a plane to go to another country. This obviously has a really big impact on my carbon footprint. My footprint for this year is monstrous. This is a big dilemma as I really like to travel. (Robert)

Conclusion

Pro-environmental discourse has permeated everyday life, however, we definitely have not all developed a suitable pro-environmental behavioural response. Narrative inquiry studies an issue in all of its complexity, and, when seen together, these narratives highlight the limits of single-variable explanations for pro-environmental behaviour and environmental activism. These texts reveal that there is no single factor that is optimal for promoting pro-environmental behaviour and environmental activism. The participants in this study have different values and value frameworks, different levels of self-efficacy and different loci of control dispositions. Not only are these factors different in the different participants, but they also differ within the individual, at different circumstances. Pro-environmental behaviour is determined by a combination of all of these factors interacting together, and it is impossible to understand exactly how such combinations work to generate action.

The participants have also gone through different experiences throughout the course of their lives. Even though, as stated, our intention was not to generalise, the narratives seem to suggest that an individual’s experiences in nature tend to develop pro-environmental attitudes and behaviour. The participants in this study all had vivid memories of experiences in nature that seem to be quite important for them. The obvious implication on ESD is that educational programmes should provide first-hand experiences in nature.

Knowledge is definitely important, and its importance comes out very clearly in the narratives, but knowledge on its own is often not enough. ESD programmes need to
provide environmental knowledge that is coupled with direct experiences in nature that provide learners with an enduring sense of personal interconnectedness with nature that fosters environmental concern and respect (Palmer et al., 1998). Otherwise, the environment will be perceived as ‘something out there’, something not to be very concerned about, and ESD will be treated like any other knowledge-based venture.

These thoughts clash significantly with the fact that in Malta natural areas are on the decrease. Moreover, children seem to be spending a considerable part of their free time engaged in virtual indoor activities, becoming less and less exposed to nature and more and more environmentally desensitised. For the sake of more effective ESD, it is of utmost importance to promote the preservation and creation of local natural areas where children can experience nature directly as part of their everyday lives. The narratives have also shown that parents have quite an important role to play in fostering pro-environmental attitudes and behaviour in children through their own attitudes and behaviour. Although other role models such as peers may then take over throughout the life course of an individual, parental influence in the early childhood years seems to have a stronger influence. The narratives also highlight the importance of education in all its forms and throughout an individual’s life in promoting pro-environmental attitudes and behaviour.

Through tackling the issue of climate change, this study has made us realise the local and global political dimension of environmental issues. It is also clear that fundamental change in societal behaviour requires more than just a few individuals acting on a voluntary basis – it requires societal norms and rules that compel pro-environmental behaviour (Booth, 2009). FoE, both as a transnational and as a local organisation, tries hard to bring about such political changes. Environmental activists work hard to shape the way governments, multinationals and societies in general respond to environmental issues. In this study, environmental activism is viewed as the epitome of a personal commitment towards pro-environmental behaviour, and so the motivations and challenges behind such work are viewed as important not only to learn more about volunteering in environmental organisations, but also about pro-environmental behaviour.

It is quite clear that pro-environmental attitudes and behaviour are a result of different factors and experiences. Humans are complex creatures, and their behaviour reflects their complexity. This means that behaviour cannot be easily explained, and any attempts to do so are bound to be simplistic. Thus we will resist from doing so ourselves. We picture all of the factors and experiences outlined in the narratives as possibilities, together with others, which can be present in any combination inside an individual. Each individual is unique, and their combination is also bound to be so. Before making an attempt at promoting pro-environmental behaviour, we believe that we must appreciate and understand the complexity of such behaviour and the diversity of possible factors affecting it. Trying to change behaviour by promoting just one of these factors, like knowledge, is bound to be unsuccessful. Because of its complexity, behaviour is also very difficult to change. It is easier to influence attitudes and behaviour in the childhood years than it is to change behaviour later on in life, when that behaviour has become habitual. The implication is that ESD efforts will probably yield more positive outcomes when addressed at children and young people. This does not imply, that we should focus all our ESD efforts towards a younger audience, but rather that attempts towards adult ESD should be even more intense and unrelenting rather than weak and sporadic.
References:


**Correspondence:**
Karen Buttigieg, G.F. Abela Junior College, Msida, Malta. Email: karen.buttigieg@um.edu.mt
A MODEL FOR DEVELOPING META-COGNITIVE TOOLS IN TEACHER APPRENTICESHIPS

Paige Bray
University of Hartford, the United States of America
and
Steven Schatz
University of Massachusetts, the United States of America

Abstract

This research investigates a model for developing meta-cognitive tools to be used by pre-service teachers during apprenticeship (student teaching) experience to operationalise the epistemological model of Cook and Brown (2009). Meta-cognitive tools have proven to be effective for increasing performance and retention of undergraduate students. Postulating that the student teaching experience is a new type of learning – learning about practice (knowledge in action), instead of learning curriculum or pedagogy (knowledge possessed) – we suggest that a meta-cognitive tool set may prove similarly useful. Before studying the effectiveness of a tool set, however, a model which enables different programmes to evolve and develop appropriate tools is necessary. This case study research explores a model for the development of a context-specific tool set over 18 months, incorporating user feedback, researcher reflection and multiple-tool development. The model showed promise as a starting point for understanding and operationalising complex interactions with theory and practice.

Key words: apprenticeship, teacher education, learning community, case study, meta-cognitive tools

Introduction

The culminating experience in teacher education is the student teacher apprenticeship. Traditionally, this is a time when pre-service teachers apply what they have learnt about curriculum and pedagogy to the practice of being a teacher (Britzman, 1991).

However, this model has proven to have some drawbacks. The focus of student teacher and supervisor is largely on transmitting curriculum, not exploring the activity of teaching or the ‘risky behaviour’ of engaging pupils’ learning (Edwards & Protheroe, 2003). While difficult to teach, the crucial knowledge of how to teach is not learnt by student teachers. The efficacy of the student teacher apprenticeship could be increased by helping pre-service teachers learn the implicit knowledge that in-service teachers use daily, including time management, student interactions and learning how and where to seek information and guidance.
Studies have shown that meta-cognitive tools, such as study skills and note taking, increase performance and retention of incoming college freshmen (Tuckman & Kennedy, 2011). Student teachers are faced with a new kind of learning different from college courses. They must learn how to, what to and when to apply skills, knowledge and techniques. Perhaps a different set of meta-cognitive tools could increase efficacy.

Quickly developing and testing the effects of a tool set would be less useful. It would take time and experimentation to develop a working set of tools. However, as there are differences between teacher education programmes, we saw value in developing a systemic model for developing tools, allowing different programmes to share and discuss the results and impact of tools. The field is best served by studying a model for developing tools. Then, with the model in place and tools developed, research on efficacy can proceed in the future. The research described in this paper is a case study of the evolution of a model for developing a set of meta-cognitive tools.

Our work was greatly influenced by the epistemological model of Cook and Brown (1999) who postulate two types of knowledge – knowledge that is possessed (I know how to add 2 + 2) and knowledge that can only be accessed through action (I know when to shift the gears in a car, what my child’s cry means, but only when I am in the activity). Teacher preparation course work focuses on knowledge of possession. However, much of the practice of teaching relies on knowledge that is based in action. An experienced teacher knows when to push, repeat or encourage based on the moment and the situation. The knowledge of how to be a teacher is inextricably tied to the activity of teaching.

The student teacher learns from watching and, in part, from Legitimate Peripheral Participation (Lave & Wenger, 1991). However, instead of a focus on reflection on practice as an end in itself, we sought to use reflection on practice to explore knowledge of practice as well as methods and sources for seeking new information knowledge. The aim is not for teachers to ask a question: How did I do? but Where can I find more to improve my knowledge of my practice? We hoped this would facilitate consideration and transfer of learning between students during the seminar and would carry forward as a learned behaviour into the students’ professional lives, encouraging the formation of communities of practice to support continued learning.

This research addresses the following questions:

1. How can the epistemological model of Cook and Brown be operationalised in a meta-cognitive tool set for use by student teachers?
2. Can we develop a model for developing tools that allows the tools to evolve over time in a theoretically sound and systemic way which can be applied and studied by other programmes of teacher education? What are the features of this model of development?
3. What tool set results from questions one and two above?

**Methodology**

This is case study research (Yin, 2002) based in an objectivist epistemology and a postpositivist methodology (Crotty, 1998; Phillips & Burbules, 2000) in a naturalistic setting. The unit of study is both the researchers developing a set of meta-cognitive tools and the model for development of those tools. We study and present here the method used for evaluating the tools and the evolution of the tools. We expect that
other researchers will find need for different tools. We expect the tool set will change over time, as needs change, sometimes because of the implementation of the tools. We report on the evolution of the tools only as they inform the model for development of such tools.

As case study research, we do not claim that the tool set developed can be generalised to the population of student teachers or to other programmes of teacher education. We cannot claim the model for development can be generalised. Every programme will adjust the model and tool set to meet their specific needs. However, this case provides a starting point and process for beginning to understanding the complex interaction between pedagogy, epistemological stances and research on student teaching experiences.

The research was carried out by two researchers. One, a participant/researcher, taught the seminar class required during the student teaching experience. The other, not associated with the university, took the role of outside ‘foil’ to reflect upon the practice of using the tool set. In addition, as the outside researcher had no influence on student evaluation, it was possible to review student feedback gathered through online questionnaires during the semester. The outside researcher could view answers and check to make sure responses were complete, while ensuring anonymity for students. The participant/researcher only saw data without names of students and then only after the semester was over.

A model for development

The model for development of meta-cognitive tools studied during this research was as follows:

- **Initial tool development.** Reading and discussions between the researchers focused on methods to operationalise the epistemological model of Cook and Brown, with guidance from the literature of apprenticeship, teacher practice and success of meta-cognitive tools.

- **Feedback.** We believed our first attempts to develop tools would need alteration, so we developed feedback mechanisms that could provide input during implementation and could be analysed at the end of the semester. These included online surveys from students, observations by the participant researcher and reflections by both researchers. The participant researcher’s entries specifically noted instances that indicated student teachers’ information seeking from new venues and transferring the lessons learned from specific incidents to overall practice. The outside researcher focused on decisions made and changes to tools, feedback mechanisms and instructions for assignments.

- **Researcher reflection and discussion during semester.** Both researchers engaged in regular discussions throughout the semester, specifically discussing methods to introduce and explain tools and assignments, how much and the nature of modelling and guidance to be given by the participating research during the seminar as well as the significance of incidents and activities of student teachers.

- **Debriefing.** At the end of each semester, the researchers held an extensive debriefing session, discussing what was learned, what worked well, where problems arose, incidents which offered evidence of impact and how the research was informing the underlying epistemological framework.
Set future changes. At the end of every semester, the researchers made adjustments to the tool set, instructions for students and research methods. Based on Alexander’s work (Alexander, 1979), we believe that the development of any model is an ongoing process of ‘repair’. Based on how the tools were used, we developed changes for the next semester.

Findings

The programme studied was an initial teacher certification (undergraduate and graduate programmes) in Early Childhood Education (ECE) at a small, private Eastern United States university. The department graduates about 100 students in all programmes. The ECE programme graduates about 25 teacher candidates per year.

Teacher candidates must complete two semester-long student teaching experiences before graduation. During the first semester, students are placed in a pre-kindergarten or kindergarten classroom for a half-day, 20-hour per week experience. They are overseen by a cooperating teacher in the classroom and a university supervisor who observes them five times during the semester. In addition, they must attend a weekly seminar on teaching methods. The tool set was explained and used in this seminar.

During the second semester, the student teaching experience is full day, 40-hour per week in either infant/toddler or forms 1–3, depending on the student’s concentration. During the second semester, the seminar alternates between in-person and online meetings.

This research into the model for developing meta-cognitive tools extended over three semesters. Below we explore how the model was used in each semester.

Semester one

Tool development. Initially, we used faculty awareness of Cook and Brown’s epistemology, coupled with explicit statements to teacher candidates about the nature of the student teaching experience. The following statements were used repeatedly: This is not a test of your skills, but a new kind of learning-learning in action. Learning about practice. This is different from taking a class. You will continue to learn this way throughout your teaching career. You may find it difficult, even if you have found classes to be easy. There is no clear right way to do most things. In this seminar, you begin a continual improvement of your practice as a teacher.

The advantage of using awareness as a tool is that it is an inexpensive and easy intervention, not requiring systemic or curricular changes. Faculty leading the seminar need to gain as well as communicate a new understanding.

Feedback. To gather information from student teacher candidates, we developed and implemented an online survey, using 18 questions—most open-ended, asking students to discuss and reflect upon an experience during teaching that provided a challenge to their practice. The survey was administered at the end of the semester. Researchers’ observational journals were maintained.

Researchers’ reflection and discussion during semester. The researchers gave consideration to having the outside researcher present Cook and Brown’s model explicitly to the seminar. We decided a theoretical discussion would confuse, not serve the students
in the midst of the student teaching experience. We opted for learning through guided action and practice.

The practicing researcher realised that she was guiding students to answer questions about practice, but the students were not initially learning what questions they could ask of themselves or each other, that could be applied in future situations. For instance, she guided students to identify authentic issues of practice, distinguished from complaints. Then, using clarifying and guiding questions, she elicited further description and detail, demonstrating that responses, feedback and answers were all useful in gaining understanding and formulating strategies for this and other issues. Students, with such guidance, began to understand that there is most often not one solution, but progress towards resolution of a specific issue. In discussions, the participant researcher stressed her observing the importance of student teachers’ experiencing these explicit, collaborative, interactive opportunities in order to ‘own’ their learning, to act on it and learn from and with others.

In exchanges about this issue, we saw the need to create an explicit tool with intentional activities, requiring use and fostering understanding, which would encourage developing practice and skills that could be transferred to other situations and could be used throughout the teaching career.

Debriefing. Upon review of the semester, some key decisions were reached. Some students were confused by the directions for certain questions in the survey. It was clear a survey used as a pre- and post-assessment would yield more informative data.

We decided to create a meta-cognitive tool, an assignment with an explicit discussion protocol. Each student would identify an issue that they faced during their student teaching practice and would present it, guided by the following protocol:

1. Describe the problem.
2. What did you do?
3. Whom did you ask for help or feedback?
4. Upon reflection – whom else would you like to have talked with? What other sources of information could/would you like to have used (resources, people, materials, professional organisations)?
5. Upon reflection – would you have done something different? What? Why?
6. Questions/What do I need from the seminar group?

Each student completed this assignment once in the semester, one student presenting each week. Fellow students would offer feedback and make connection to their own practice.

The participant researcher explicitly modelled and directed students to understand that this was not just one more assignment to be completed and forgotten, but a meta-cognitive tool that could improve practice and inform their actions in the future.

The second tool discussed was an online discussion board. We wanted to extend the class discussion beyond the boundaries of the seminar meeting time, into the real-time student teaching experience. We decided to establish an online discussion board and resource depository. The hope was the assignments would be posted between meeting times and other members of the seminar could read, reflect and write within that forum. We also hoped that after graduation, this board would become an ongoing forum for discussing issues and sharing resources among pre-service and in-service teachers.

Set future changes. These changes to the tool set and instructions are the implementation of decisions reached during the debriefing stage. The previous step looked
backward as the researchers revisited what occurred. This step looks forward to implementation during the coming semester.

The following changes were implemented before the beginning of the second semester:

- implementing online discussion board, not using the university’s learning management system, to encourage the creation of a repository of discussion and resources during and after student teaching;
- clarifying instructions for survey instrument (specific incidents queried were specific to teaching situations);
- implementing pre- and post-administration of online survey.

**Semester two**

**Tool development.** With tool changes described above, the major change in practice for the participant researcher was implementation of the explicit discussion protocol. During each seminar session, one student presented an authentic issue for discussion that arose during the student teaching experience using the above protocol to prepare themselves in advance. The participant researcher established norms for the depth of presentation, level of feedback and richness of the discussion. The presenter was graded, a web-based discussion board was created, and the revised survey was administered at the beginning and end of the semester.

**Feedback.** Pre- and post-surveys administered, researchers’ observational journal continued.

**Researchers’ reflection and discussion during the semester.** The participant researcher was concerned that students would be simplistic in their answers and cursory in their responses during discussion. However, the students were compelled by the authentic issues. The added scaffolding of modelling presentation and reinforcing active listening by the participant researcher was of value. In addition, guidance was provided to self-monitoring the amount of talk time and hearing from all seminar participants.

Extensive reflection and discussion by students supported the decision to provide active modelling by the participant researcher, then fading out her primary role as the modelling and feedback were shared by all seminar participants.

**Debriefing.** The discussion board did not work as an online venue. It was another forum and online location, so became more of an assignment to complete. We decided to use the discussion forum integrated with the learning management system that the students were already using, opting for greater use during the seminar and forgoing the possibility of in-service teacher input after graduation.

We decided to add a new tool to integrate with an existing key assessment. The seminar already required a teacher inquiry project where students formally formulated a question, utilised multiple data sources, analysed, reflected upon and presented their inquiry during the final seminar session. A formal rubric assessment was added to the tool set in order to assess the semester-long, iterative process. Students were required to make explicit connections between what was learned during their presentation, discussion and the inquiry project. By doing this, we hoped to enrich both the discussion and the inquiry project.
Future changes:
- change instructions of inquiry key assessment to add rubric to the tool set;
- use university-linked system for discussion board;
- formalise explicit instructions as developed during semester discussion.

Semester three

Tool development.
- implement new instructions for inquiry assessment and rubric for evaluation;
- implement a new discussion board;
- implement instructions for discussions.

Feedback. Pre- and post-surveys and researchers’ observational journal continued.
Key assessment data of teachers’ inquiry were made available at the end of the semester, as well as the incorporated discussion board content was made available for review.

Researchers’ reflection and discussion during the semester. Participant researchers’ entries in the observational journal note the students’ taking greater responsibility for guiding their conversation at the beginning of in their full day student teaching experience and by mid-semester stewarding their own conversations with minimal participant researcher facilitation.

Debriefing. We confirmed our confidence that the tool set – the explicit discussion protocol, the discussion board and the teacher’s inquiry assignment – was now stable. We recognised the feedback – student pre- and post-survey, researchers observational journal and documentation created via the discussion board – was also functioning well, although we desired more perspectives.

We recognised a need to provide guidance for students to initiate discussions about practice with their supervising teachers. As these professionals are used to discussing curriculum transmission and are in a supervisory role, it is often not easy for a student to steer the direction of a conversation into less certain waters. We felt that an assignment requiring students to ask their supervising teacher about a specific practice would help. During the coming semester, we will develop a new tool, perhaps as follow-up to the students’ presentation that requires the student to broach this subject.

Future changes:
- begin to develop a tool for students asking teachers about practice;
- expansion of feedback to supervising teachers and cooperating teachers;
- outreach to graduated, in-service teachers to gather anecdotal evidence of changes in practice.

Conclusion

Based on this research, we have found the above model for developing meta-cognitive tools shows promise. At this point, we believe the tool set, now in its third iteration, is rich and relatively stable. The model has provided a useful framework for developing tools and researchers’ reflecting upon their effectiveness. Student teachers engaged in the seminar have been observed demonstrating an increased awareness of their practice and have employed what they have learned when participating in discussions with other seminar members.
One of the strengths of the model for tool development studied is the in-process reflection of tools followed by a summative debrief. This two-pronged approach enabled us to determine what needs the students exposed while considering the overarching theoretical application. In attending to both the practical and the theoretical, we affirmed that some tools worked, some were not effective.

We continued to see the power in our decision not to talk about theoretical frameworks within the seminar, but rather make explicit the theoretical grounding/framework through assignments, activities and experiences – operationalising the theory.

We have seen the importance of not merely providing directions for assignments, but, instead, using clear, explicit modelling and directed feedback to support yet intentional reflection and discussion, which moves the focus from completing to enacting the assignment. Within this case, modelling led to rich discussions of the importance of effective teaching, thinking about learning and, by listening to each other, seeing ways to apply knowledge in new contexts.

While not explicitly addressed in either model or tool set, the participant researcher worked to empower the students in the seminar to form a learning community. Through instruction, facilitation and feedback, the researcher set expectations for the seminar to have a less hierarchical structure than is typical. Group norms included: increased accountability, active listening, respective feedback and responsive engagement by each seminar student. An important result of these norms was that students took responsibility for their own and their colleagues’ learning. They assumed accountability to each other.

Finally, an important lesson learned was taking time to implement and consider the effect of the tools. In some cases, the tools were not weak, but the students needed time to apply them over two semesters in two distinct school contexts and seminars in order to understand their usefulness. It was in the second semester, when the students where familiar with the tool, that they were able to reap more complex and complete rewards. Related to this finding is the importance of multiple uses of each tool with guidance. We believe the effectiveness of the tools are enhanced by the duration of engagement and facilitated by the length of time provided to revisit overtime rather than limit engagement with a short-term assignment. The goal is a change in practice over a career, not the completion of a single assignment.

Based on this case, this model for the development of a meta-cognitive tool set shows promise for further study. Two areas to investigate in future research include: efficacy of the tool set on student teachers’ practice as measured by feedback from classroom cooperating teacher, university supervisor and the student, effect on the P-12 student learning and further evolution of the tool set and an application of the model in other programmes by other programme-based researchers.

References:


**Correspondence:**

Paige M. Bray, Assistant Professor of Early Childhood, Early Childhood, University of Hartford, Hillyer 232, 200 Bloomfield Avenue, West Hartford, CT 06117. Email: Bray@hartford.edu or schatz@powerstart.com
REFLECTIONS OF DESIGN-ORIENTED PEDAGOGY FOR SUSTAINABLE LEARNING: AN INTERNATIONAL PERSPECTIVE

Henriikka Vartiainen and Jorma Enkenberg
University of Eastern Finland, Finland

Abstract

This paper focuses on the expansion of design-oriented pedagogy that encourages approaching global phenomena such as sustainable development from the perspective of local environments, cultures and associated ways of doing things. It aims to determine how project members and teachers from eight different European countries (n = 221) who had participated in the project “Case Forest – pedagogy towards sustainable development” experienced the pedagogical model and evaluated its usability from the perspectives of their own educational cultures. The main sources of both theory and data-driven qualitative content analysis are the reports obtained from each country and transcripts of the oral presentations and collaborative discussions. The results indicate that the teachers find current school practices, belief systems and traditional teaching models problematic and see the model as one way to change their schools’ practices towards sustainable learning.

Key words: pedagogical model, design-oriented pedagogy, design-based research

Introduction

Sustainable development is related to the values, activities and practices of individuals, communities and organisations, required for a sustainable society and future. The key challenge of our time should be addressed in multiple ways from different vantage points in locally grounded but globally connected ways (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2009). As stated in UNESCO documents (1998, 2005, 2009), education is essential for moving towards a more sustainable future as the world’s hopes for the future rest with today’s children and young people and their readiness to take up the complex challenges of today and the future.

Education for sustainable development calls for new kinds of learning that are not so much of a transmissive nature but rather of a transformative and continuous engagement in sustainability in formal, non-formal and informal settings. The complex and multi-disciplinary nature of sustainable development requires intensive collaboration between disciplines, schools and the wider community, along with the capacity to connect and reconcile multiple ways of looking at the world (UNESCO, 2005, 2009).
To meet these challenges and to offer teachers tools to facilitate teaching and learning for sustainable development, a consortium consisting of 12 partners from eight different countries was formed: Sweden, Finland, Estonia, Latvia, Lithuania, the Czech Republic, Slovakia and Bulgaria. This study focuses on the project entitled “Case Forest – pedagogy towards sustainable development”, which was based on design-oriented pedagogy, developed by a research group led by Professor Jorma Enkenberg. The present study aimed to determine how teachers that represent different educational cultures and backgrounds experience the pedagogy and evaluate its usability.

Towards sustainable learning

In a recent UNESCO publication, Kozma (2011) argued that while people in the ‘outside world’ work collaboratively and use a variety of digital tools and resources to solve complex problems and create new ideas and products, students in schools have remained in structured classrooms where teachers cover the standard content by lecturing a large class of students. Students work individually and reproduce this knowledge that is then assessed, and their use of information and communication technology (ICT) is limited. Furthermore, an international survey of teachers from 23 countries (Law, Pelgrum, & Plomp, 2008) supported this argument as the three most common classroom pedagogical practices were: having students fill out worksheets, working at the same pace and sequence and answering tests. ICT was rarely used. Given the role of education and schools in society, the question that arises is: Is this type of educational system capable of educating individuals to meet the challenges they will face in the emerging society?

As the pace of change in the twenty-first century increases, many researchers have shifted their focus from education to life-long learning. Learning is a lifelong process that occurs in various situations (life-wide) and in cultural practices in which we participate (life-deep). It is proposed that these practices are also the most powerful mediators in learning and that most of the learning that occurs across an individual’s lifetime appears to occur outside schools, in various informal and non-formal environments (Banks et al., 2007). If we wish to deeply affect our students’ learning, learning environments, including authentic and technology-enhanced activities, should be seen as part of an extended school environment (Edelson & Reiser, 2006).

Complex challenges such as sustainable development (SD) as global phenomena are multifaceted in nature and require individuals with different points of view to collaboratively design and redesign solutions from various perspectives. According to Schank (2011), one major problem in current school systems is that teachers teach subjects instead of teaching students to think and act. If students are to participate in a society in which the construction, sharing and use of new knowledge and cultural artefacts are the basis for sustained development, their education should go beyond the learning of established knowledge (Kozma, 2011). We must also take into account that professions and personal lives have changed as compared to life in the industrial society and schools can no longer educate students about everything there is to know in a lifetime. Most students will tend to follow a working trajectory encompassing multiple careers, and students should be prepared for jobs that do not exist at the time of their schooling. Therefore, we need to enhance adaptive learning skills with the ability to learn and work in cross-disciplinary teams (National Education Technology Plan [NETP], 2010; Thomas & Brown, 2011). Many researchers underline the so-called ‘twenty-first century
skills’ such as communicating and collaborating to solve complex problems, adapting and innovating in response to new demands and changing circumstances and using technology to create new knowledge and expand human capacity and productivity (Binkley, Erstad, Herman, Raizen, Ripley, & Rumble, 2011).

Sustained knowledge development is essential for social progress of all kinds, and the fundamental task of education is to enculturate youth into this knowledge-creating civilisation and to help them find a place in it (Scardamalia & Bereiter, 2006). From a social perspective, there is a well-grounded need to move from individual learning and solo teaching to work in cross-disciplinary teams that encompass multiple ways of knowing (NETP, 2010). Classroom educators should build learning communities consisting of students, fellow educators and professional experts from museums, community centres and other settings, who can support a student’s learning on demand (NETP, 2010) and enhance the activities in which students learn and work together with different roles, perspectives and responsibilities and apply their own expertise. This process would require confidence that the students can create knowledge that can be shared with their community for further knowledge building that is a legitimate part of civilisation (Scardamalia & Bereiter, 2006).

Fischer and Redmiles (2008) proposed that, if the world outside school relies on collaboration, creativity and problem solving and requires dealing with uncertainty, change and intelligence distributed across cultures, disciplines and tools, then education should foster transdisciplinary activities that prepare students for having meaningful and productive lives in such a world. Having students become active agents in their lives and learning in settings far beyond classrooms, we must change our perception of what and how we teach in schools (NETP, 2010). If an innovation- and knowledge-based society is anticipated in the future, it calls for developing and implementing such pedagogy in teaching and learning for learners of all ages.

**Design-oriented pedagogy**

Building on the above-mentioned perspectives of learning, design-oriented pedagogy (Vartiainen, Liljeström, & Enkenberg, 2012) was developed to enhance collaborative learning activities situated both in and out of school. The pedagogy is based on collaborative designing (Seitamaa-Hakkarainen, Viilo, & Hakkarainen, 2010), highlighting the role of real-world phenomena and mediating objects and artefacts as a basis of the design and inquiry process. The pedagogy encourages approaching global phenomena such as SD from the perspective of learners’ own ideas and interpretations, scaffolded by open-ended learning tasks that give students the opportunities to design and choose different kinds of perspectives and paths to engage inquiry (Liljeström, Enkenberg, & Pöllänen, 2013).

The learning community consists of a student, fellow students and teachers, working with domain experts and other adults. New technology, especially social media and mobile technologies, provide great tools for collaboration, data collection and help to transform ideas into digital representations that can be jointly negotiated, developed and shared with a wider community. The structure of the design-oriented learning environment is like dynamic activity systems, where a community of learners negotiates common goals, divides duties and focuses their object-oriented and tool-mediated activities to accomplish the multifaceted learning task (cf. Engeström, 1987). The learning process is outlined in Figure 1 below (described in greater detail in Vartiainen et al., 2012).
Research methods

New educational innovations call for systematic research supporting development and implementation processes in a variety of contexts (Plomp, 2010). Therefore, many studies utilise the ‘design-based research’ approach to promote learning, create usable knowledge and advance theories of learning and teaching in complex settings (Design-based Research Collective, 2003). Following the principles of design-based research, the model of design-oriented pedagogy has been tested and validated in several design experiments (iterative case studies) (Vartiainen et al., 2012; Liljeström et al., 2013). After several stages of development and prototyping research of the design-oriented pedagogy model, the main interest of the present study was to achieve a fuller implementation of the pedagogical model and to determine how teachers that represent different educational cultures and backgrounds experience this pedagogy (practicality) and their willingness to apply it in their teaching (relevance and sustainability) (Plomp, 2010). Based on these findings, the
study then aimed to find answers to the following questions: What could be the problems, possibilities and possible users of the design-oriented pedagogy according to the participating teachers? and How did the teachers of the project envision the possibilities of the design-oriented pedagogy?

Research object

Some of the Case Forest project participants had previously formed a network, aiming to increase the education about SD and to improve the communication between foresters and the public. They found that a research group at the University of Eastern Finland had developed a new kind of instructional model that they thought would suit their goals and ought to be spread to other countries. Since the project focused on design-oriented pedagogy and involved teaching and learning of the forest’s role in a sustainable society, the pedagogy was termed “Case Forest Pedagogy”. The role of the researchers was to introduce the model and its theoretical background and analyse the data produced by the participants.

The instructional model and its background were initially presented to the project participants in Estonia in January 2009. In the spring of 2009, the project participants and two teachers from each country attended a workshop in Finland. In this model course, the participants implemented their own learning projects related to the common theme of SD by designing learning objects from samples selected from the collections of the Finnish Forest Museum. Then, a similar course was arranged in every country. The project members and teachers attending the model course were responsible for implementing this teacher course in each country, with ten teachers per course. More than 80% of the participants in these teacher courses were women. Most of them had been teaching for more than ten years and had taught in a secondary school. Table 1 describes the responsible organisations and the total number of project participants from each of the participating countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of participants (N)</th>
<th>The responsible organisations and number of project participants</th>
<th>Participants in teacher courses organised by the project participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>16 Swedish Forest Agency (n = 4) Umea University (n = 2)</td>
<td>Teachers in primary school (n = 10)</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>14 Finnish Forest Association (n = 2) University of Eastern Finland (n = 2)</td>
<td>Teachers in pre-school (n = 1) Teachers in primary school (n = 3) Teachers in secondary school (n = 1) Other: teachers in a Steiner school, professors of education, pre-service teachers (n = 8)</td>
<td></td>
</tr>
</tbody>
</table>

Sequel to Table 1 see on p. 62.
Sequel to Table 1.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
<th>Organization/Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>23</td>
<td>Estonian Forest Industries Association (n = 3)</td>
<td>Teachers in primary school (n = 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>State Forest Management Centre (n = 2)</td>
<td>Teachers in secondary school (n = 13)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Estonian Biology and Geography Teachers Association (n = 1)</td>
<td>Other: teachers in a nature school, university student, communication expert (n = 2)</td>
</tr>
<tr>
<td>Latvia</td>
<td>110</td>
<td>Stora Enso (n = 1)</td>
<td>Teachers in primary, secondary and upper secondary school (n = 109)*</td>
</tr>
<tr>
<td>Lithuania</td>
<td>18</td>
<td>Kaunas College of Forestry and Environmental Engineering (n = 2)</td>
<td>Teachers in primary school (n = 2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Teachers in secondary school (n = 12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other: teachers in upper secondary school, teachers in an agricultural school (n = 2)</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>15</td>
<td>University of Forestry (n = 3)</td>
<td>Teachers in secondary school (n = 12)</td>
</tr>
<tr>
<td>Slovakia</td>
<td>16</td>
<td>National Forest Centre (n = 1)</td>
<td>Teachers in primary school (n = 9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Teachers in secondary school (n = 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other: representatives from a methodical-pedagogical centre for teachers (n = 2)</td>
</tr>
<tr>
<td>The Czech Republic</td>
<td>9</td>
<td>Forest Management Institute (n = 1)</td>
<td>Teachers in secondary school (n = 5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other: university lecturers, teachers in a special education school, Forest Pedagogy (n = 3)</td>
</tr>
</tbody>
</table>

* Details of the teachers’ prior work experience were not included in the report from Latvia.

The final meeting was held in Bulgaria in the summer of 2010.

Data collection and analysis

Country reports and presentations

To evaluate the teacher course, the project leaders from the Swedish Forest Agency designed a compulsory questionnaire that sought to identify teachers’ backgrounds and their attitudes towards the model. The project members in each country translated the questionnaire into their native language and then summarised the results in English. In these country reports, the project members were asked to describe the teacher course that they organised, summarise the result of the course evaluation and answer the fol-
lowering questions (designed by the project leaders) related to the pedagogy: 1) problems, 2) possibilities, 3) users, 4) dissemination of results and 5) EU policies and education systems. These country reports (n = 8) were used as the main source to answer the first research question. This paper focuses on the first four questions (because very few short answers were obtained in response to the question related to EU policies and education systems).

In the final meeting, the project members from each country also gave an approximately thirty-minute PowerPoint presentation on the basis of their written reports and experiences. All the presentations were recorded, transcribed and used as supplementary material in the data analysis.

**E-Questionnaire**

Before the meeting in Bulgaria, the project members were asked to participate in a short online questionnaire conducted by the researchers. The questionnaire focused on views about and experiences of the Case Forest Pedagogy. Thirteen people answered the questionnaire: project members from Lithuania (n = 4), Bulgaria (n = 1), the Czech Republic (n = 1), Sweden (n = 1), Latvia (n = 1), Estonia (n = 1) and Finland (n = 4). The questionnaire was used as supplementary material in the data analysis.

**Collaborative discussions**

The collaborative discussions held in Bulgaria after the presentations of each country were used as the main source to answer the second research question. The project participants were asked to divide themselves into two groups and discuss the following questions: What solutions can be provided by Case Forest Pedagogy to address the challenges we face in teaching and learning?

The discussions lasted for about 40 minutes. The discussions of both groups were recorded and transcribed with comprehensive coding. The first group had one member from Bulgaria, two from Finland, one from Latvia, two from Lithuania and one from Sweden. The second group had one member from Bulgaria, two from Estonia, one from Slovakia, one from the Czech Republic, two from Sweden.

**Data analysis**

We employed both theory- and data-driven qualitative content analysis (Mayring, 2000). For the first research question, the teachers’ responses were coded after deductive, theory-dependent content analysis. Categorisation was based on the questions used in the country reports. For the second research question, the teachers’ responses were coded following inductive data analysis. The analysis involved three iterative phases (cf. Zhang, Hong, Scardamalia, Teo, & Morley, 2011): a) identifying initial categories based on the teachers’ responses; b) identifying similarities and differences among the initial categories and creating sub-categories; c) aggregating the categories into abstract interpretations about problems and possibilities of the pedagogy, elaborated more detailed in the following.
Results

Problems in implementing the pedagogy

All countries except Finland, Bulgaria and the Czech Republic cited the lack of technological tools in schools. According to project participants from Slovakia, another problem encountered is that the students are more skilled in ICT than the teachers. The reports of Slovakia and Latvia mentioned the problem of the insufficient information technology (IT) skills of teachers and the recognition of this issue:

*It is hard to neglect the fact that majority of teachers knew nothing about the possibilities afforded by IT. They are afraid to lose reputation.* (country report; Latvia)

The participants also emphasised the activities and attitudes of the teachers. According to project participants from Estonia, Slovakia, Sweden, Finland and Lithuania, the teachers’ attitudes present a problem, especially their attitudes towards new pedagogical approaches and new technology:

*Older teachers are conservative and feel fear to use new methods.* (presentation; Slovakia)

Also, the routine and lack of cooperation among teachers were mentioned in the report from Latvia. According to project participants from Finland, problems also exist in the general attitudes of students, colleagues and principals.

Also, problems related to organisational and administrative activities, such as the lack of time and financial resources, were mentioned. The Czech Republic and Latvia further stressed on the political regulation of education:

*School reform (reduction of the number of teachers; increasing amount of work; increasing demand for paper work; reduction of salary) – very hard to be optimistic and creative in such kind of conditions.* (country report; Latvia)

*Forest pedagogy isn’t certified by the Ministry of Education as an educational topic, and schools don’t want to spend their money on uncertified courses; the Ministry of Agriculture doesn’t have enough money to provide such courses for free.* (presentation; the Czech Republic)

The time constraints, structure of the school system and curriculum were broached by many project participants. However, the problem does not always exist in the curriculum itself, but rather in its implementation:

*We don’t have any constraints regarding the curriculum in Sweden. Outdoor teaching is a natural part of the school day in many schools, but many schools do not offer any outdoor education at all to their students.* (questionnaire; Sweden)

Table 2 summarises the problems in implementing the design-oriented pedagogy.
Table 2. Problems in implementing the pedagogy

<table>
<thead>
<tr>
<th>Problems of implementation</th>
<th>COUNTRY</th>
<th>CZ*</th>
<th>EE</th>
<th>LV</th>
<th>SK</th>
<th>FI</th>
<th>LT</th>
<th>BG**</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technological problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of equipment</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers with insufficient IT skills</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social attitude problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes of teachers towards new technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes of teachers towards new pedagogical approaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes of pupils, colleagues, or principal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contextual problems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of financial resources</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of time</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political regulation of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Czech Republic, Estonia, Latvia, Slovakia, Finland, Lithuania, Bulgaria, Sweden

(*) Note that one teacher from the Czech Republic present at the Czech workshop discussed how to adapt the pedagogy to meet the mental level and technical abilities of the students. All the other teachers checked “no problems” to this question, but one teacher mentioned the lack of cameras and another mentioned the students’ interest level as a problem.

(**) According to the report from Bulgaria, implementing this methodology would pose no problems. In the presentation, they mentioned “obligatory problems”, but no further explanation was provided.

Possibilities of the Case Forest Pedagogy

The project participants from each country presented several possible future users for the method, from kindergarten to university and programmes outside of formal education, for instance, School educational programmes (the Czech Republic), RMK Nature Centres and Environmental Education Department of Environmental Board and Camp-schools (Estonia), kindergarten, primary school and secondary school teachers, youth education programmes (Finland), Professional Schools on Forestry and University of Forestry (Bulgaria) and high school schoolchildren, teachers themselves, primary schools, young forest friends cluster, seminars, extracurricular activities, camps, family gathering, distance studies (Lithuania).

The project participants from Estonia saw several possibilities for collaboration.

[The] Case Forest methodology develops cooperation between formal education system (schools) and informal education (museums/nature education centres), which strengthens networks for sustainable development.

The pedagogical model was also deemed appropriate for integrating different subjects in Estonia and Finland. In Sweden, the project members planned to continue collaboration with the teachers who attended their teacher course.
Many project participants also discussed the learning possibilities created by the pedagogy:

*It enables working outside the classroom, allows us to use inquiry as a learning method, makes learning methods more versatile, allows a child to be a subject of his [sic] learning, allows the cooperation of the pupils and changes the role of the teacher from a teacher to a co-learner.* (questionnaire; Finland)

*It is very good. Also, it is not a traditional way for education, and it will be very interesting for pupils and for teachers.* (presentation; Bulgaria)

Also, in the reports of participants from Latvia and Slovakia, the Case Forest Pedagogy was seen as a way of changing the current models of education:

*It also has a potential to be one of the important tools for realisation of reform in education system to change a traditional school to an advanced school by implementation of new methods and innovation involvement.* (country report; Slovakia)

**Collaborative reflection of design-oriented pedagogy**

After reading the collaborative discussion transcripts several times, four discussion themes were identified in both the discussions (research question 2). Based on the teachers’ responses, the initial categories were identified and divided into sub-categories (elaborated below) and ultimately into abstract interpretations about problems and possibilities of the pedagogy.

**Knowledge**

The nature of knowledge was the most common topic of discussion. For instance, a participant from Estonia in Discussion 1 said, “*They (teachers) wanted to control this learning ... it (pedagogy) is very open ... They can’t say that this knowledge and these skills.*” Several comments were indicating that the pedagogy had challenged the teachers to see knowledge as developmental in nature. In Discussion 2, a participant from Sweden commented, “*We don’t give them (students) the answers either, they have to think for themselves.*” In Discussion 1, the participants saw the children taking on greater responsibility in knowledge development and started envisioning new possibilities in student learning by building bridges between the students and experts in terms of knowledge and practices. As an example, a participant from Finland said in Discussion 1, “*Where could we find the answer and let’s go ask some professional who could help us.*” In Discussion 1, another participant from Finland saw knowledge advancement as a community rather than individual achievement, “*And questions might also be so complicated that you need ... several opinions ... and several people for them ... not one person can know all the answers ... you need the network.*”

Another example from the same Discussion 2 elaborates on the skills needed for living in the world where all the students do not have to have the same knowledge and competencies.
Sweden 2: ... people who grow up now, they change jobs many times, and it is impossible for the school to prepare them for everything ... to know everything about everything... It’s not possible ... but you can help them to ... know how to find ... how to learn ... the tools for managing ... in situations ... that is what the project is about.

Sweden 3 (continues): So Case Forest methodology is the part of life-long learning

**Learning task**

In Discussion 1, a participant from Finland strongly criticised the current practices.

The school system now and what kind of adults it brings out. They always want some manuals on how to behave, what to do. They are not making decisions by themselves because, if there is a curriculum, it says what you are supposed to learn. They are used to that system, and there is somebody who is saying what you are going to learn.

In the same discussion, a participant from Bulgaria brought up the challenge set by the extant curriculum.

Teacher should have some more freedom in curriculum, because the curriculum is obligatory ... [sic] ... because they have to implement their curriculum, and it is not possible to give different questions and different objects et cetera.

However, in Discussion 2, some comments about the open-learning task emphasised in the design-oriented pedagogy indicated a desire for clearer goals. A participant from the Czech Republic commented, “I think that there should be some kind of aim or target where to guide the students, there must be a sort of result.” A participant from Slovakia responded similarly.

In Slovakia, teachers are used to set the object for doing something, so our teachers wanted us to help them formulate those objectives, set the goals to have clear objectives what pupils should know after this project.

In Discussion 1, a participant from Latvia commented that she experienced that real-life learning tasks can make learning more meaningful by giving the students the feeling of ownership of their own learning, “I know that pupils feel that it may be necessary to learn because it’s real life, not this [sic] previous method of books and answers.”

**Instructional model**

In Discussion 1, a participant from Lithuania described the current practices.

Our teachers have very conventional models, our students have trained how to answer, how to make some exercises and this Case Forest method is a new way, more creative.

In Discussion 2, one of the Estonian participants described the design-oriented pedagogy as collaborative inquiry, where students co-construct the process, “They
have to discuss what problems they have to solve, and they have to do something to solve the problems.”

The practices of today challenge the implementation of a new instructional model, as observed by a participant from Slovakia in Discussion 1.

*It might be difficult to organise it in normal school life, because they have some lessons which are mattering [sic], and each teacher are [sic] responsible for different lessons, so they have to main an agreement to this topic, have enough space, enough time to use this methodology.*

Despite such challenges, the participants suggested that the pedagogy can be seen as a cross-disciplinary inquiry that integrates multiple goals of curriculum and school subjects.

Learning community

In both groups, the role created by the pedagogy for the teachers provoked much discussion. The teacher still needs to interest students in the learning process and facilitate the inquiry process. However, the teacher does not have to control and know everything, as emphasised in Discussion 2 by a participant from Estonia, “The teachers are also learners, a teacher can learn from students [sic] and also these specialists from centres and museums that they do cooperation with.”

Trust in student’s agency and peer-to-peer teaching and learning also emerged in both discussions. In Discussion 2, a participant from Sweden stated, “They help each other and perhaps they have more fresh knowledge than teachers have, it is some kind of team work.” A participant from Estonia described the emerged learning community and connected teaching, “The learning communities that we created during this methodology... [sic] ...They are team, there must be specialist and teachers and also students.”

Discussion and conclusion

The results of the study indicate that in most of these countries, the participants perceived teachers’ attitudes towards technology and new pedagogical approaches, lack of equipment, financial resources and time as problems to implementing this new approach. Many project members criticised the current subject-based school curriculum that offers limited opportunities to implement these deeply engaging and time-consuming learning methods. Overall, it seems that some of the Eastern European countries experienced problems related to political regulations of education and the financial constraints of learning institutes. In the Nordic countries, the problems were related to the teachers’ attitudes and the strict division between school subjects and lessons.

Data analyses of collaborative discussion revealed four interconnected themes, providing an insight into the tension of current school practices and principles of the design-oriented pedagogy. Figure 2 describes the vast variation of teachers’ reflections to knowledge, learning tasks, instructional models and social settings in learning.
To summarise, the traditional forms of instruction, in which students study something constructed or announced by someone else, still seem to value factual knowledge and correct answers, where the teacher tries to guide the students with specific tasks, scripted procedures and fixed routines. Schools and teachers are used to thinking about what is needed to be learned in terms of school subjects (Schank, 2011), and teachers do not necessarily invent and implement new ways of using technology in their work (Valtonen, Pöntinen, Kukkonen, Dillon, Väisänen, & Hacklin, 2011). Yet the complex challenges of society, such as SD, seem to generate pressing demands for teachers to transform their teaching methods. Beyond transmission of prevailing knowledge, design-oriented pedagogy was considered to be a co-developmental process that occurs in groups, communities and networks. A further step is to organise the students to work as a learning community pursuing to develop community knowledge by solving real-life problems with a diversity of perspectives. Breaking boundaries between school and cultural communities opens possibilities for connected teaching and facilitates the students’ learning in settings beyond the classroom. However, this poses greater demands on teachers; they have to re-think the core issues of learning and teaching, create new meanings for themselves and understand the cultural contexts, practical conditions and barriers in different classroom settings to accordingly develop effective strategies (Zhang, 2010).

Design-oriented pedagogy is characteristic of what Zhang et al. (2011) referred to as a principle-based approach that defines core values and principles, leaving to teachers the challenge of reflective interpretation when applying these principles in different educational contexts. The four perspectives emphasised in collaborative discussions indicate that the current school practices and the new pedagogical approach affect one another in many ways, so that the actual pedagogical practices implemented in schools
may share characteristics of both rather than correspond with the defined core values and principles. This reflects Zhang’s (2010) argument that implementing new innovations provided by researchers is difficult, as the new practices are often assimilated into ongoing practice and are ritualised as surface procedures in implementation, without resulting in significant change.

The results of the study suggest that the participating teachers, coming from different educational backgrounds, perceived the pedagogy as an effective approach to facilitating a sustainable future. However, the differences in learning cultures and available resources are creating various challenges for the teachers to implement and sustain a design-oriented pedagogy. To some extent, the result of the study reflects the beliefs, traditions and norms that organise the educational practices in these countries. One of the limitations in this study is that it cannot thoroughly explain the possible cultural differences in implementation of design-oriented pedagogy.

The most obvious limitation of the present study was the language barrier. The project members served as brokers (Wenger, 1998) between the teaching communities and researchers that created important opportunities to cross over the language differences and disseminate the pedagogical model, but also created a transparency issue. Also, the online questionnaire was in English, which could explain the very low response rate. According to Penuel, Fishman, Cheng and Sabelli (2011), because design-based researchers often seek to collaborate with teachers that are also ‘ready for change’, that may be a necessary condition for partnerships, but leaves open the question as to the scalability of the innovation.

After the final seminar, we have had the opportunity to observe the work of some Finnish project members (see Finnish Forest Association) and teachers (at the University of Helsinki, University Teacher Training School), who have organised workshops for other teachers and several learning projects with their students since their introduction to the program four years ago. These cases provide valuable avenues for future research for sustained innovation and understanding of the new ideas, designs and practices derived from the design-oriented pedagogy.

Acknowledgements

This study has been supported by the doctoral program for Multidisciplinary Research on Learning Environments (OPMON) and partly by the project “Blended learning: Technology-enhanced teaching and learning environments” (UEF, project No. S11822). We would like to thank professor Patrick Dillon and Anu Liljeström for fruitful discussions and comments on the manuscript.

References:


Correspondence:
Henriikka Vartiainen, M.Ed., Junior Researcher, Philosophical Faculty, School of Applied Educational Science and Teacher Education, Savonlinna Campus, University of Eastern Finland. Postal address: P.O. Box 86, 57101 Savonlinna, Finland. Email: henriikka.vartiainen@uef.fi
COUNTRY’S COMPETITIVENESS AND SUSTAINABILITY IN THE CONTEXT OF THE HIGHER EDUCATION SYSTEM REFORMS

Elita Jermolajeva and Ludmila Aleksejeva
Daugavpils University, Latvia

Abstract

The accumulation of knowledge and its use have become important factors that promote economic development as they contribute to a country’s competitiveness in the global economy. The basic significance of research is obtained by defining new approaches in the organisation, function and efficiency of the higher education system (HES) by emphasising its qualitative aspects. The aim of the article is to describe the influence of education reform on economic competitiveness, paying special attention to analysing and evaluating international experiences from an interdisciplinary perspective, including economics, pedagogy, etc. Quantitative indicators are used to characterise specific features of the HES and the interaction of this system in the overall context of state development. Some aspects of the Latvian HES are also analysed. The economic activity of inhabitants often directly depends on their level of education. In order to reorganise the Latvian HES and increase its competitiveness and efficiency, thus ensuring quality and availability, the Latvian education system must define a middle-term (4–5 years) and long-term (10–15 years) development plan that is coordinated with national economic development.

Keywords: higher education system, sustainability, innovations, economic competitiveness, education reform

Introduction

Knowledge management, the coordinated and directed creation, accumulation, distribution and use of knowledge, is a complex process that represents one of the pillars of economic and social life covering the entire country and society. The functioning of the higher education system (HES) and the activities of individual higher educational institutions (HEIs) takes place in a very complex and not completely explicable context within an unpredictable changing social, political and economic environment. The interdisciplinary perspective that includes economic, pedagogic and social challenges, among others, significantly influences the choice of indicators and the results of efficiency measurements. Thus, if there is not a successful interaction of external and internal factors related to the HES and if the level of the HES’s efficiency does not correspond to societal conditions and goals, in this case, the balanced development of the country, its competitiveness
can be hindered. The HES and the outcomes it creates considerably influence the development of the country. On the other hand, contextual changes demand that a stronger attention be paid to the development of the HES. In this way, the improvement of higher education (HE) can be promoted with the goal of ensuring the sustainable development and competitiveness of the country. Consequently, the improvement of the HES must be realised in close relation to societal development, in general.

Changes in HE in Latvia and all over the world are connected to the general development of the state and society. The HES of Latvia has experienced fast and important changes during the last 20 years, evolving from a system that was largely elitist to its present form, which is widely accessible. This transition can be best evidenced by the more than doubling of the school population while the actual number of inhabitants significantly decreased. A study of the Latvian HES reveals that career choices, programme availability, facilities, equipment, etc. have increased substantially. Furthermore, an institutional base has been created, educational financing and the mechanisms to allocate resources are constantly being improved and a unified system of degrees and qualifications has been ensured.

But, at the same time, new challenges have arisen that are determined by international tendencies and by internal factors of the system. For instance, the funding of the HES is not regular and stable (especially following the global crisis and its consequences). Additionally, the negative character of demographic tendencies, the lack of innovative capacity and potential, and obstacles limiting knowledge transfer also negatively affect the HES. These factors, together with the globalisation process and the development of knowledge-based economy as well as internal structural imperfections of the system, create significant challenges for the sustainable development of the system in general.

**Conceptual framework and research methods**

Presently, European countries face new tendencies in the global environment that influence not only the way the HES operates, but effect the ultimate aims and objectives of this system. Scientific findings during the past 30 years have significantly changed many premises of education, making reform necessary in practically every education system (Carnoy, 1999; Fullan, 2005). Experts underline that contemporary HE in the Western Europe is undergoing its third wave of reforms in response to global tendencies such as massification, internationalisation and autonomy of the education services (Hargreaves & Goodson, 2006). Many countries are reforming their education systems to provide their citizens with the knowledge and skills that enable them to engage actively in democratic societies and dynamic knowledge-based economies (Riley & Torrance, 2004).

Individual experts also note the increasing mercantile tendency of educational services since the last decade of the 20th century (Apple, 2001). The mercantilisation of education values labour productivity, efficiency, responsibility and competitiveness, all of which are extensively included in the global education reforms. As a result, the standardisation and, as a consequence, responsibility and reporting were offered as means to increase education and education efficiency. Educational requirements of building democratic societies and enhancing economic competitiveness often contradict the changes introduced in these global education reforms (Sahlberg, 2004).
The methodological approaches used to ensure the integral evaluation of the socio-economic impacts of the HES is systemic, synergetic and qualimetric in nature include graphic, monographic and abstract-logical methods, institutional analysis, statistical and economic analysis. Quantitative indicators are used to characterise specific features of the HES. Calculations, methodology and definitions are provided by Eurostat. Educational statistics collected by the Ministry of Education and Science of the Republic of Latvia and the Global Competitiveness Report were also used.

To process and analyse research data, both the descriptive and the experimental-analytical method were used. In the first case, descriptive methods were used to obtain a quantitative-qualitative description of the research object, its properties and condition. The experimental-analytical method was used to construct a model of functional and causational interactions that would provide an opportunity to develop appropriate policy alternatives.

Findings and discussion

Successful economies compete on the basis of high value, not only low cost. High value is best guaranteed by well-trained and educated personnel and flexible lifelong learning opportunities for all citizens (Hargreaves, 2003). Competitiveness is based on the determinants of the complex process of economic growth and development. When the competitiveness of economies is compared, a set of institutions, policies and structures is constructed using sub-indices that attempt to grasp the heterogeneity of different countries (Porter, Schwab, & Lopez-Claros, 2005). Based on these commonly used determinants of economic competitiveness and various indicators of the knowledge economy, three core domains have been utilised to explain economic growth: education and training (human capital); use of information and communication technologies; innovations and technological adaptation (Porter et al., 2004).

Improving of the HES is a condition for successful development of the country as it ensures competitiveness. Figure 1 shows how education reform influences the factors that increase economic competitiveness (Sahlberg, 2004).

![Figure 1. Factors of economic competitiveness and education reform (Sahlberg, 2004)](image-url)
From the macro point of view, the country’s education system, including the HE sub-system, is linked in its external environment with three universal bonds: 1) societal education needs (HE demand) and the resources needed to satisfy these needs; 2) the possibilities of the education system (HE offers) and 3) the satisfaction of society’s education needs (HE results) (Pañina, 2010). The concept of the education system must include four basic components: values, goals, politics and elements for execution of decision making (mechanisms of need and financing or resource distribution) (Broks, Geske, Grünfelds, Kangro, & Valbis, 1998).

Thereby, if there is no successful interaction of external and internal factors put into practice in the HE system and if the efficiency level does not correspond to the existing state and overall societal goals, a balanced development and competitiveness of the country is hindered.

The goals of the education system are complex because they include both the preparation of people for labour market and the broader long-term objective – personal development. For instance, according to the data of the Flash Eurobarometer survey “Students and Higher Education Reform” (2009), 74% of students indicated that the main objective of HE is to ensure employment (the total number of students questioned n = 14 964, in Latvia n = 525). It should be noted that, in Latvia, the estimation of students was similar to the average European Union (EU) indicators, respectively, where 84% of HEI students stressed that the objective of HE is to ensure employment. In the same study, 56% indicated that an important aim of HE is to enhance personal development, also 49% noted the goal of HE is to educate an active citizen (Students and higher education reform, 2009).

Thus, assessing HE must be performed within a framework of a particular socio-economic, historical, legal and political environment, taking into account not only the strategies of national economic development, but also global priorities of the system’s development. Of course, the aims and objectives of education in different countries may mean different things; they may be different even for different groups of inhabitants of one country since there are differences in microeconomic tendencies among geographical areas, in the quality of the state institutes and technological development (Figure 2).

Beginning in the 1990s, considerable changes began to take place in HE systems of the EU which determined there was a need for reform in many countries. Some of the most important influences include globalisation, the constantly increasing value of knowledge as the main driver of growth and the rapid development of information and communication technologies. The accumulation and use of knowledge has become one of the most important factors affecting economic development as it increasingly determines a country’s competitiveness in the global economy. In such conditions, its principal importance is acquired in the search for new approaches to the organisation, function and increased efficiency of the HEI, emphasising its qualitative aspects.

The most important reforms in the fields of the HE management and economy in Scandinavian and Baltic countries during the previous decade are shown in Table 1 (Progress in higher education reform across Europe, 2008). In Table 1, C indicates competitive institutions; N indicates negotiations-based institutions; E indicates evenly distributed across institutions.
Figure 2. Interaction of the higher education system and sustainable development

Table 1. Targeted funding to address education-related goals: Areas where initiatives took place from 1995 to 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Initiatives on area of Access</th>
<th>Initiatives on area of Efficiency</th>
<th>Initiatives on area of Quality</th>
<th>Initiatives on area of Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td></td>
<td>Completion and time to degree (E)</td>
<td>Excellence (C)</td>
<td>Attracting international students (E)</td>
</tr>
<tr>
<td>Finland</td>
<td>Special programmes (C)</td>
<td>Mergers (N)</td>
<td>Quality of teaching (C)</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td></td>
<td></td>
<td>Student exchange (E)</td>
</tr>
</tbody>
</table>

Sequel to Table 1 see on p. 78.
One of the most important driving forces of reforms in modern times is the improvement of the HES. This HE component is related to several aspects. Firstly, it is linked with the constantly increasing diversity of HEI resources and, consequently, the number of participants involved as well as the diversity of their demands. Secondly, it is related to the global competition among education systems. Thirdly, the global recession has created financial difficulties for students to pay for their studies and for governments and businesses to finance the work of HEI.

A country’s ranking in the global competitiveness index represents an important source of information about the economic situation of a country as it uses a unified system to reveal the strengths and weaknesses of every country in specific fields of competitiveness. One of the determining factors of competitiveness is the quality of HE. The most recent available data (2011) show that among 131 countries the competitiveness of Latvia’s HE ranks 35th (Estonia – 22nd place, Lithuania – 25th place). The analysis of the pillars and factors determining the competitiveness in Latvia when compared to other Baltic and Scandinavian countries (Figure 3) is carried out within the global competitiveness monitoring (Schwab, 2010).

Figure 3. Comparison of the indicators of the Global Competitiveness Index among countries in 2010–2011 (Schwab, 2010)
Latvia lags behind the Scandinavian countries both by the rating of the HE and by other indicators related to the education: innovations, level of technologies and efficiency of the labour market. The innovation index in Finland is 5.56, in Sweden – 5.45, in the United States of America – 5.65, but in Latvia – only 3.02. Latvia has the lowest ranking among its neighbouring countries. Innovations and qualitative aspects related to the development of entrepreneurship are determining factors in economic development and the development of a knowledge-based economy. Latvia has a very low rating both among world countries and among our neighbour countries. The low level of cluster development (113th place), the low quality of research institutions (66th place) as well as the low cooperation of HEIs and branches in the field of research (86th place) deserve particular attention (Table 2).

Table 2. Indices of competitiveness, higher education quality, innovation and knowledge-based economy in different countries

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>14</td>
<td>12</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Sweden</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Finland</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Denmark</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Estonia</td>
<td>33</td>
<td>22</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Lithuania</td>
<td>47</td>
<td>25</td>
<td>31</td>
<td>39</td>
</tr>
<tr>
<td>Latvia</td>
<td>70</td>
<td>35</td>
<td>32</td>
<td>44</td>
</tr>
</tbody>
</table>

The same is true with innovation and knowledge-based economy indices. The World Bank ranks the knowledge-based economy (KEI) of Latvia 32nd, which is the lowest indicator among the Baltic countries. However, it is important to note that northern European countries lead the field of knowledge-based economy development. Also, Latvia is 44th in the innovation index (GII), while Lithuania and Estonia are 39th and 29th, respectively. A higher level of education promotes fundamental innovations as well as the adoption and imitation of global high-tech practices. Lamentably, Latvia does not appear to use these possibilities (Table 2).

Countries like Denmark, Sweden, Norway and Finland are consistently reforming their HES, constantly improving the system in general and in its components. The HES of these countries have gradually ensured the competitiveness and sustainable development of the country, and this is confirmed by their leading positions in the global competitiveness index, global innovation index and other indicators. The reforms of the previous decade include associations, integration, structural cooperation and the creation of strategic alliances with Norway, Denmark, Finland and other European countries.

Paying a more detailed attention to Finland’s HE system and examining its correlations with the processes of national economy, it is possible to reach some conclusions. Firstly, Finland’s economic policy is based on the integration of different branches (Aho, Pitkänen, & Sahlberg, 2006). The mid-term policy anticipates the integration of the education and vocational training systems, involvement of the private sector and industry participation in evaluating the education system’s quality, in formulating require-
ments and in monitoring process (Sahlberg, 2006). Secondly, the strategic framework of education system development and reformation has a long-term character. Thirdly, the influence of the state administration and institutions has a significant role in the policy of the HE and in the implementation of education and economic reforms (Sahlberg, 2009). Efficient state administration and the high level of development of public institutions play a significant role in the creation and execution of the policy of society’s subsystems as well as in the implementation of the changes planned. Fourthly, well-educated human resources and their expanded involvement in continuous education guarantee the improvement of human capital that is necessary to ensure HE services and economic growth. One of the main qualities of the Finnish education and economic systems is their flexibility.

The most important changes in Finland’s HE took place in the early 1990s when the majority of state regulatory functions were cancelled but educational opportunities and directions expanded (Routti & Yla-Anttila, 2005; Aho et al., 2006). In the same way, the regulatory influence of the state in the private sector was diminished, while more flexible standards were introduced. All of that ensured the development of network interaction between the region, state and business in HEI. The integrated policy and long-term state strategic planning ensured the Finnish HE system took a leading position in the whole world as well as consolidated the country’s competitiveness and successful development of the private sector. A constant dialogue between state and private HEIs permitted a mutual understanding about the anticipated results and factors of society and the development of a knowledge economy. As a result, education institutions, too, were more actively involved in the introduction of experiments by using creative technologies, developing business skills and promoting positive student attitudes towards work. Strong integrated policy frameworks and long-term strategic visions have enhanced sustainable leadership in education and private sector development (Sahlberg, 2006, 2007).

World practice shows that the increasing distribution of HE is strongly related to work productivity and economic competitiveness (Figure 4). Also, in this aspect, the tendency in Baltic and Scandinavian countries is similar.

![Figure 4. Expenditure per one student compared to GDP per capita in the EU countries in 2008, EUR](image-url)
Researchers stress that one of the contributing factors for regional development could be a partnership between HEI and regional businesses that more efficiently integrates HEI in the regional context (Eglitis & Panina, 2010; Jermolajeva, Eglitis, Panina, & Ostrovksa 2010). Integration of HEIs and the business environment is the usual practice in developed countries (Goddard, 2006; Organisation for Economic Co-operation and Development [OECD], 2007; Huggins Jones, & Upton, 2008). HEIs are one of the important factors promoting regional development (Pawlowski, 2009).

The development of the world’s economically most powerful countries shows that these countries have opened their economies to innovative solutions decades ago. Despite the comparatively high indicators of HE achievements, the HE systems in the Scandinavian countries are still in the reformation process. The same is true about the Baltic countries where the HE systems have undergone intensive reforms since the 1990s and whose performance is not yet outstanding. The Baltic countries do, however, continue to search for better mechanisms to manage and govern the educational system as well as improved directions for general system development. When analysing interconnections, one of the most important conclusions is the following: the economic activity of inhabitants and their involvement in the processes taking place in the country directly depends on the person’s level of education.

HE provides opportunities and benefits not only for HEI graduates, but there are ‘external benefits’, too, that are related to progress in science, innovative potential, economic growth and cultural development. Society is directly interested in how HES contributes to the economic and social needs of society and ensures international competitiveness.

On the other hand, macroeconomic policy may provide a considerable impulse for the development of HE (demand-driven HE) in different ways. For instance, when supporting the business sector and promoting the stability of the labour market, it is also possible to achieve the development of the HES. Of course, it is a long-term activity, but the opposite is also true: a highly developed HES with promotes macroeconomic growth, providing balanced regional development and increased international competitiveness.

Conclusion

The economic activity of inhabitants and their involvement in socio-economic life is directly dependent on the person’s level of education. The HE system and the outcomes it creates have a clear impact on the development of the country. The improvement of the HES is a condition for the successful development of the country and its competitiveness. Target-oriented reforms in the HES depend on a positive synergy between the education structure and the participation of all stakeholders. This positive synergy is important for both the education system itself and the economic growth of the country.

The experiences of economically advanced countries show that they opened their economies to innovative solutions several decades ago. For some countries, economic globalisation and rapid technological development have created a unique opportunity for accelerated development. However, for other countries, there are threats of stagnation or even recession. Countries such as Denmark, Sweden, Norway and Finland are consistently conducting reforms of their HES, constantly improving the efficiency of their educational system, in general as well as its particular elements. During the previous
decade, the most important changes were directed towards improving the performance of HE. As a result, the structure of resource investment indicators has been improved, activities of system reorganisation have been carried out and student mobility is significantly expanding. The system and performance indicators of HE have also been improved with the goal of motivating HEIs towards self-improvement. The HES of these countries has gradually ensured competitiveness and sustainable development, as revealed by their leading positions in the Global Competitiveness Index, Knowledge Economy Index and the Global Innovation Index (2011), among others.

In Latvia, it is necessary for the economic policy to create conditions that contribute to the competitiveness of Latvia and foster the development of a knowledge-based economy with a strong export sector, including high technology with high added value that will play a leading role in furthering economic development.

To accomplish the reorganisation of the HES needed to increase the competitiveness and efficiency of HE, the Latvian education system must create a middle-term (4–5 years) and long-term (10–15 years) development concept that would be coordinated with the corresponding planning and vision of Latvian national economy.

References:


Riley, K., & Torrance, H. (2003). Big change question: As national policy-makers seek to find solutions to national education issues, do international comparisons such as TIMSS and PISA create a wider understanding, or do they serve to promote the orthodoxies of international agencies? *Journal of Educational Change, 4*(4), 419–425.


**Correspondence:**

Elita Jermolajeva, Doctor of Economics, Associated Professor, Daugavpils University, MeRSA (Member of Regional Studies Association), 1 Parã£des Street, 331, Daugavpils, LV-5401, Latvia. Email: elita.jermolajeva@du.lv
COPING AT SCHOOL – ACADEMIC SUCCESS OR/AND SUSTAINABLE COPING IN FUTURE?

Monica Sakk
Tallinn University, Estonia

Abstract
The purpose of the research was to monitor opinions of learners, parents and teachers on the aspects of coping at the second level of primary school in both Estonian-medium and Russian-medium schools. The research was carried out from 2006 to 2011. The research used a questionnaire which was administered to 652 learners and their parents in Forms 4 through 6 at both Estonian-medium and Russian-medium general education schools. In the second part of the research, 30 teachers from the same selection were interviewed. The results of the research show that the learners, parents and teachers who took part in the research in both Estonian-medium and Russian-medium schools link the aspects of coping with academic success. Additionally, teachers in schools with Estonian as the language of instruction consider the learners’ skills of social coping also important. Both the Estonian-medium and Russian-medium school teachers consider home and parents the main factors that influence coping skills. According to the teachers, changes in society have changed common beliefs, attitudes and the way of thinking among the parents and the learners, causing difficulties in learners’ academic as well as social coping. Based on the rapid changes in society, it is important to reorient teacher education. Social skills, forming the basic skills of learning, and accessing different websites for studying will become crucial in teaching the new generation.

Key words: learners, teachers, parents, coping, change in education paradigm

Introduction
In previous decades, changes in society have brought about changes in education. Estonia is characterised by the spread of market mechanisms, including the sphere of education, competition between schools, ratings and benchmarking of educational institutions, state examinations and standards for learning outcomes. The number of learners has been decreasing, which requires a reorganisation of the whole school network. The deepening social inequality and economic stratification influence learners’ coping or failure at school.

In 2009, learners from Estonia were in 7th place in functional reading, 5th place in scientific literacy and 10th place in mathematics. Thus, the majority of the learners have gained basic knowledge and skills necessary for successfully coping in society. At the same time, many learners in Estonia still suffer from fatigue, consider classes boring,
their relationship with teachers – not trust-based, and they have also been bullied (Eesti Inimvara Raport, 2010). Research conducted at schools has shown that Estonian learners have little joy and contentment from school (Ruus, Veisson, Leino, Otts, Pallas, Sarv, & Veisson, 2007; Veisson & Sakk, 2009).

Poor academic performance is the tip of the iceberg since there are plenty of unsolved problems: conflicting relationships, bullying at school and low self-esteem. The beginning is Form 5 where the rate of at-risk children is 37%. From here, the number of at-risk children increases dramatically until Form 8 when 42% of learners admitted they had problems and could not cope with learning (Pettai & Proos, 2012).

In Estonia, at the second stage of basic school, there is usually a shift from the form-based learning (when all the subjects are taught by one teacher) to subject-based learning (when different subjects are taught by different teachers). Learners leave primary school, and their teachers change. During this period, learners’ academic performance shows a decreasing trend and problems with coping begin at this school stage.

The dropout rate from school is high, especially in basic school, where the number of dropouts during the academic year 2009/2010 was 880 learners, and, in the academic year 2010/2011, 736 learners dropped out of school (Haridus- ja Teadusministeerium [Estonian Ministry of Education and Research], 2012). The percentage of 18–24-year-old young people who have basic or lower level education and do not study is 14%, which is about the average in the European Union. According to the Europe 2020 Strategy, the indicator should not have exceeded 10% in the year 2020.

The Estonian education is also experiencing problems due to the transition of Russian-medium schools to Estonian-medium instruction. The Basic and Upper Secondary School Act enacted in 1993 states that Russian-medium upper secondary schools transition to Estonian-medium instruction. In 2000, it was stated that defining the language of instruction means that 60% of subjects are taught through the medium of the Estonian language. The state arranged the precise schedule for the transition in 2005. According to the current Basic and Upper Secondary School Act, in the case of young people entering Russian-medium upper secondary schools in 2011, 60% of the instruction was to be conducted in the Estonian language. The transition of Russian-medium upper secondary schools to the Estonian-medium instruction will be finalised in the spring of 2014, when state examinations will be taken by learners who will have studied in the Estonian language most during their upper secondary school experience (Haridus- ja Teadusministeerium, 2012). The educational reform has caused many worries among Russian parents, as the reduction of quality of subject teaching both in basic and upper secondary school is considered the main disadvantage. Adaptation to the new requirements has caused additional stress for learners, teachers and parents.

In the academic year 2009/2010, 141,802 learners studied in general education schools in Estonia. For 110,749 of these students, the language of instruction was Estonian, for 30,854 – Russian, and 199 learners studied in a language different from either of the two (Haridus- ja Teadusministeerium, 2011).

In 2011, 135,683 learners studied in general education schools. Of these, 105,273 learned in the Estonian language, and 30,410 learned in the Russian language (Haridus- ja Teadusministeerium, 2011). Thus almost 22% of learners learned in the Russian language. The results of the population census in 2011 show that more than one million people live in Estonia: 68.7% of them are Estonians, 24.8% are Russians and 4.9% are representatives of other nationalities (Eesti Statistikaamet, 2012).
The decrease in the dropout rate from school is an important issue for the whole of society. Preserving and valuing the human capital is one of the preconditions for the sustainability of society. People without an education are a social source that is costly from an economic point of view in addition to having a negative influence from the long-term perspective.

What are the reasons for dropping out of school? Does coping at school mean good marks or does it mean more than that? Is the education learners are obtaining at the moment going to help them in future? Estonian education looked for answers to these questions, and, in the autumn of 2010, the new National Curriculum for Basic Schools and Upper Secondary Schools was implemented. The curriculum provides schools with more opportunities and more freedom to organise their work based on the learners’ needs.

Theoretical background

The theoretical foundation of the research is based on the mutual influences of individuals and the environment. The basis of the research is the bio-ecological systems approach of Bronfenbrenner in which the person and the environment are in a mutually influential relationship that is constantly changing. Changes occur as a result of the mutual influences and the time factor (Bronfenbrenner, 1977, 1979, 1996, 2000, 2005; Lazarus, 2006).

Coping is analysed on the basis of the theory by Lazarus and Folkman (1984). Lazarus and Folkman defined coping as the individual’s cognitive and behavioural effort to meet (reduce, minimise, solve, adapt) the internal and external needs emerging in the transaction of personal environment using existing resources (Lazarus & Folkman, 1984).

This is fine as a process definition, but coping thoughts and acts are presented without reference to the personal meaning of what is going on. Meaning incorporates our goals, cherished beliefs and situational intentions (Lazarus, 2006).

Coping can be viewed as a process that is subject to personal and social forces, a personality trait or style (Lazarus, 2006). When coping strategies change over time and circumstance, they must be thought of as a process (Lazarus & Folkman, 1984).

Coping is a function of the situational determinants and the individual’s characteristics and perception of the situation and coping intentions. The individual brings a host of biological, dispositional, personal and family characteristics to the encounter. It is how these impact the perception of the situation and the response to the stress or concern that are of most interest (Frydenberg, 2004).

The two coping strategies are problem-focused (direct, active) coping, in the case where the focus is on the reason for the problem and emotion-focused coping. Problem-focused coping can include gathering of information about the problem, considering of several solutions and being realising about the chosen solution. For instance, there might be the elimination of the danger of direct actions or a search for social support. Emotion-focused coping focuses on regulation of emotions and often represents the use of various protection mechanisms such as negation or avoidance (Lazarus & Folkman, 1984).

Problem-focused and emotion-focused coping are two independent types of coping: one addressing problems and the other regulating the emotions (Lazarus, 2006).

Coping resources can be divided into personal and environmental. Character traits, abilities and skills and cognition as applied to the world can be considered personal coping resources. Financial resources and social support are associated with environ-
Coping at school – academic success or/and sustainable coping in future?

Coping at school – academic success or/and sustainable coping in future? --- 87

mental coping resources. Coping resources protect an individual from stress and affect evaluations of the coping process (Lazarus & Folkman, 1984) The meaning of the previous statement is not clear and should be rewritten. At this time, there is a growing belief that all coping processes have both positive and negative consequences for a person, and the evaluation of each coping and adaptation should take into consideration different levels of analysis (both biological and sociological) as well as short-term and long-term consequences (Lazarus & Monat, 1985).

Coping is a key feature of the emotional process. Cognitive, motivational and relational processes lie at the heart of all our lives. Coping is concerned with our efforts to manage adaptation demands and the emotions they generate. Coping is an integral feature of the emotion process (Lazarus, 2006). The terms connected with the word coping are coping resources (social, personal and physical factors as parts of the situation), coping strategies (concrete plans, action used to reduce stress) and style of coping (habitual or stereotypical way to solve crises) (Rice, 1999).

Important aspects of personality include the participants’ goals, goal hierarchies, beliefs about self and the world (including what they have learned to expect from each other) and personal resources. Resources include intelligence, social and work skills, health and energy, education, wealth, supportive family and friends, physical and social attractiveness (Lazarus, 2006).

Learners’ coping within the school environment has been researched by Skinner and Wellborn (1997). Their research showed that the key question which affects learner’s academic performance and contentment at school is the concept of academic coping or the way in which learners interpret academic challenges, difficulties or backlashes and react to them.

In Skinner and Wellborn’s (1997) opinion, school stress is connected not only with learning, but also with relations in school. The way a learner reacts to stress depends on his/her evaluation of the stress. They also believe that different stresses connected with studying affect learner’s coping and learner’s reaction to school-related stress will also affect his/her future. In the learners’ opinion, the majority of the problems at school are caused by school tasks, relationships with peers, personal achievements or failures and the loss of one’s feeling of comfort. The school environment has its own rules following which can cause stress for learners. Children’s coping responses were constrained by the power, structures, norms and rules of the classroom (Skinner & Wellborn, 1997; Wentzel, 1998; Pettai & Proos, 2012).

Patterns of coping can have a direct effect on the way others react to children’s coping. The social context can either magnify or compound the problem. Optimal coping in academic contexts may not simply be to approach coping. In addition to problem solving itself, children also need to know how to move away from learning interactions in order to gather more information, to cooperate, to skip problems that they know how to solve, to conform or to get help.

The learner’s achievement at school and his/her contentment depend on the teacher’s attitudes and ability to convey knowledge, to guide and to be a supporter and a mentor. The way the teacher treats learners also affects their achievement. A teacher’s negative attitude towards his/her learners influences the learner’s academic performance, school stress, contentment and coping strategies (Piekarska, 2000). A good relationship with the teacher creates a safe classroom environment (Boulton et al., 2009). The way the teacher treats learners as well as his/her attitudes affect the learners’ optimistic attitude.
towards life, their physical and emotional well-being as well as their academic performance (Ruus et al., 2007).

Close relations between the teacher and learners, or conflicts between them influence social and academic skills. Children’s skills at school are connected with the quality of the teacher-learner relationship. The teacher-learner relationship plays an important role in the formation of skills which are important for a child and which are extremely essential for successful coping in school. The quality of the relationship influences learners’ coping in the long-term perspective (Pianta & Stuhlman, 2004; Wentzel, 2009).

Learner’s coping is influenced by his/her well-being, the way the learner feels at school, the extent of his/her involvement in the school life and the teacher’s role, which is decisive. The way the learner feels at school depends on the teacher to a great extent. The effectiveness of the learner’s coping strategies depends on his/her connectedness to school and the extent to which he/she feels involved in the school life. The learner’s emotional well-being at school is positively connected to involvement in the school life. This is particularly the case with basic school learners (Frydenberg, Care, Freeman, & Chan, 2009).

The quality of the children’s relationship with the teacher is of crucial importance in shaping the children’s interest towards learning and motivation for learning. The qualities of efficient teachers are emotional closeness, safety and trustworthiness. These are the qualities that provide learners with help when they need it and also hold up spirituality of the community and consideration in the classroom. These qualities support the development of learners’ emotional well-being, positive self-image, self-esteem, motivated orientation towards social and academic achievements as well as social and academic skills. Research has shown that positive relations between the teacher and learners affect learners’ motivation for learning as well as academic and social skills at school (Wentzel, 1998; Pianta, Hamre, & Stuhlman, 2003; Pianta & Stuhlman, 2004; Wentzel, 2009).

Safe and emotionally supportive relations between the teacher and the learner support the learner’s positive self-image, help him/her to have desired social values and achieve goals as well as support the development of social and academic skills (Wentzel, 2009). In social relations, learners need connectedness and closeness. In the school context, it means that if the learner feels that the school climate or teachers are cold, distant, uncaring or rejecting, then the learner has problems with coping (Skinner & Wellborn, 1997).

Parents’ beliefs are influenced by current and past contextual and cultural elements and the micro-climate of the family (Bronfenbrenner, 1986, 2000), relationships and values (Talts, 1997). An additional factor is the way the school impacts these beliefs. As noted by Vygotsky (1978), socio-cultural backgrounds, experiences and events impact learning and development. Similarly, teachers’ and families’ socio-cultural backgrounds affect their interactions and impact how parents are viewed and how the process of parent and family involvement is constructed (Suoto-Manning & Swick, 2006).

Young people coming from a background of positive family relationships use more active methods of coping when solving problems at school and at home. Positive relationships with teachers support learners’ active coping with problems, especially at school (Zimmer-Gembeck & Locke, 2007).
Method

The data was gathered using self-report questionnaires for learners and parents. Teachers were also interviewed. The questionnaire for learners consisted of 75 questions, and they incorporated different elements: 1) typical coping strategies, which learners think they use in the academic environment; 2) questions about academic success and meeting the demands of the school (marks, school attendance/cutting classes, homework); 3) learners’ self-esteem concerning psychological and physical well-being; 4) learners’ future optimism/pessimism; 5) learners’ evaluations of different characteristics of the school climate; 6) background factors, including learners’ interests (Ruus et al., 2007).

The coping questionnaire consisted of 36 statements; the respondent was to decide to which extent one or another statement characterises his/her typical ways of coping in the school environment. The minimum score on the scale used was 1 and the maximum score was 4. The use of the scores 1 and 2 of the scale indicated that the respondent generally perceived failures occurring at school as threats and tended to use unconstructive coping strategies. However, the use of points 3 and 4 of the scale indicated that the respondent perceived the situation rather as a challenge and used constructive coping strategies.

Analysing the results, 13 indexed variables were identified to describe learners’ coping processes through standardised means. The results of the research were analysed by the school type and the age group (ANOVA, t-test).

The questionnaire for parents consisted of 53 questions and used a 4-5-point Likert scales for most responses. The content blocks of the questionnaire were as follows: parents’ evaluation of school as an organisation, including values, participation in decision making, motivation for learning, innovativeness; evaluation of the reality of professional work; relationships (between learners, between learners and teachers); parent-school cooperation, parental involvement; questions about coping strategies; personal data.

The interview with teachers contained questions based on the results of the previous research of Tallinn University and also specified questions from the pilot research. The semi-structured interview included the following aspects which influenced coping: learner’s coping at school (academic/social), cooperation with parents, learner’s relationship with his/her parents, relationships between learners within the form, learner’s basic values, boredom in the lesson, tiredness at school and changes at school which occurred during the last five years.

The data was analysed using SPSS 14.0 and Microsoft Excel data analysis programs. In the analysis of the qualitative part of the research, content analysis and the NVIVO 8.0 program were used in parallel.

Procedure

The research was carried out from 2006 to 2011 in two stages. During the first stage, in 2006 and 2007, a survey was conducted among learners of Forms 4–6 in both Estonian and Russian-medium schools and their parents. The learners were instructed during the filling in of the questionnaire and completed in the questionnaire during a lesson. The learners were instructed according to the language they studied in, either Estonian or
Russian. The questionnaires were also either in Russian or in Estonian, depending on the language of instruction at school. The learners who filled in the questionnaires received questionnaires for their parents. Parents filled in the questionnaires at home and then returned them to school. Learners and teachers’ questionnaires were encoded according to the schools to ensure confidentiality.

In 2006, a pilot research study with interviews was conducted with six teachers, three from Russian-medium and three from Estonian-medium schools. The results of the pilot study were analysed using the content analysis and the questions from the interviews. The reason for conducting the second stage of the research in five years was to study how coping factors of the same sample change over time. Interviews were conducted, accordingly, in Estonian or Russian.

At the second stage in 2011, teachers from the sample were interviewed in the Estonian and Russian languages. Each interview took from 30–110 minutes. If needed, the questions asked during the interview were repeated or clarified. Dictaphones were used to record the interviews and the results were transcribed word for word. The interviews were analysed using texts analysis where fragments of the text carrying the same meaning were encoded. Then the fragments were categorised and encoded. The text analysis was conducted in several stages by two different researchers, and the categories and sub-categories that were revealed in the encoding process were unified (identified may be better here).

Sample

The sample comprised Stage II of the basic school which was justified according to statistics of the Estonian Ministry of Education and Research. Most of problems with coping occured at Stages II and III (Forms 6–9) of general education in the basic school, where the number of dropouts is also the highest.

The sample composition was based on the following principles: 1) both Estonian-medium, Russian-medium and bilingual or Estonian and Russian-medium schools (hereafter referred to as bilingual schools) would be included; 2) city and rural schools would be included; 3) schools with different academic progress (based on the results of the state exams for the last five years) would be included. In total, nine general education schools from different places in Estonia participated in the research conducted from 2006 to 2011.

The questionnaire was completed by 652 learners and 373 parents from Forms 4–6. The learners were from both urban and rural schools and schools of different languages of instruction. The schools were located in different regions of Estonia.

There were 383 learners from Estonian-medium schools, and the numbers of the learners by the form were as follows: Form 4 – 105; Form 5 – 133; Form 6 – 145. The number of parents who completed the questionnaire was as follows: Form 4 – 63; Form 5 – 85; Form 6 – 69.

A total of 269 learners from Russian-medium schools participated in the research, and the numbers of the learners by the form were as follows: Form 4 – 89; Form 5 – 88; Form 6 – 92. The number of parents who completed the questionnaire was as follows: Form 4 – 60; Form 5 – 64; Form 6 – 32.

A total of 24 teachers participated in teacher interviews. The interview sample included teachers at Stage II of the basic school, i.e. Forms 4–6. There were 14 teachers
from Estonian-medium schools and 10 teachers from Russian-medium schools. The age range of the teachers from Estonian-medium schools was between 25 and 58 years, with an average age of 46 years old. The length of work experience at the school was between 4 and 36 years, and the average length of work experience was 23 years. The teachers’ education was as follows: 2 had secondary education and 12 had higher education. Out of 14 teachers, 13 were females and 1 was a male. The age range of the teachers from Russian-medium schools was between 33 and 59 years old, with an average age of 46 years. The length of work experience at school was between 12 and 43 years, and the average length of work experience was 24 years. All of the 10 interviewed teachers had degrees from institutions of higher education.

The research aimed at answering the following questions:

1. How do learners, parents and teachers evaluate learners’ coping and factors affecting it at school?
2. To which extent do the evaluations of learners, parents and teachers differ?
3. What are the differences between the learning outcomes of the respondents from Estonian-medium and Russian-medium schools?

Results

Learners evaluated academic performance as the most important indicator at school. Learners of both Estonian-medium and Russian-medium schools also considered it to be the most essential indicator at school (Veisson & Sakk, 2009).

The analysis of the results in forms of Stage II of basic school showed that, in Form 4, learners’ evaluations of the coping process standardised by the central values were higher in the case of each indicator. With age, the indicators decreased. In connection with the study process, the evaluations of the learners were relatively the same in all forms; however, in overall indicators, there was a significant difference in the evaluations of learners from Forms 4 and 6. Results indicate 6 were more negative. In the case of psychological well-being indicators, there was also a large difference between the self-esteem of learners of Forms 4 and 6 as well as in the way they felt at school. In the case of learners in Form 6, the evaluations of their self-esteem were significantly more negative. There were also negative evaluations in the case of optimism indicators and indicators of the teacher-learner relationship, and indicators of relationships with peers. Learners of Form 6 had more negative evaluations than learners in the previous forms in the case of such indicators as innovativeness, determination, the school values system and discipline. In the case of coping indicators, evaluations were negative already in Form 5, where relationships with peers and discipline also received lower evaluations.

The results showed that, even if Form 4 learners were relatively optimistic and positive about what was going on in school, then in Forms 5 and 6 the situation only got worse. Low evaluations connected with social coping influenced learners’ academic performance and became obvious. At the same time, it is known that in basic school, the learners’ priorities are rather social relations, while parents and teachers consider academic performance and the related factors important. The difference in the relationship between the teacher and learners is remarkable: teachers evaluated it positively, while learners’ evaluations in this case were significantly different.
Learners’ evaluations of coping indicators at different types of school

The analysis of learners’ learning outcomes according to the type of school revealed no significant changes in the way Estonian- and Russian-speaking young people evaluated the study process and marks. However, evaluations of Estonian-speaking learners were somewhat higher. In the case of the psychological well-being, evaluations of the Russian-speaking learners were the highest and learners from Estonian-Russian-medium schools gave lower evaluations. The Russian learners’ evaluations in the case of physical well-being and optimism indicators were also higher. However, a difference occurred in coping indicators that were evaluated the lowest by Russian learners and the highest by Estonian learners. Learners’ opinions about relationships with the teacher and peers were relatively similar, although relationships with the teacher were evaluated as being better than relationships with other learners. The biggest difference was in the section on innovativeness and the value system; the corresponding indicators were evaluated by Russian learners higher than by learners from Estonian or Estonian-Russian-medium schools. Concerning the order and discipline, the lowest evaluations were given by learners from Estonian-Russian-medium schools. The most negative evaluations were concerning the coping indicators as well as relationships between learners, order and discipline. It indicated that learners from Estonian- and Russian-medium school have problems with their coping and social relations.

When taking into account the language of instruction, learners’ evaluations indicated statistically significant differences in overall evaluations of the study process (p < 0.036) and psychological well-being (p < 0.017). The differences also included innovativeness/determination (p < 0.000), the school value system (p < 0.000) and order/discipline (p < 0.026) (Table 1).

There were statistically significant differences between different groups.

- Statistically significant differences appeared in the overall evaluations by learners from Estonian- and Russian-medium schools regarding such indicators as the study process (p < 0.009), coping (p < 0.000), innovativeness (p < 0.000) and school values (p < 0.000).
- A statistically important difference between learners from Estonian and Estonian/Russian-medium schools was revealed concerning order and discipline (p < 0.004).
- Statistically important differences between learners from Russian and Estonian/Russian-medium schools were revealed concerning psychological well-being (p < 0.006), innovativeness/determination (p < 0.000) and the school value system (p < 0.000).
Coping at school – academic success or/and sustainable coping in future?

Table 1. Statistically significant differences of standardised unified indicators of coping by different types of schools (ANOVA, t-test)

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>ANO-VA</th>
<th>t-test, Estonian/Russian</th>
<th>t-test, Estonian + Russian</th>
<th>t-test, Russian/Estonian + Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estonian</td>
<td>Russian</td>
<td>P</td>
<td>df</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td>n = 174</td>
<td>n = 184</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Learning process, marks</td>
<td>2.90</td>
<td>2.84</td>
<td>2.81</td>
<td>0.501</td>
<td>348</td>
</tr>
<tr>
<td></td>
<td>n = 172</td>
<td>n = 172</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Learning process (aggregated characteristics)</td>
<td>7.18</td>
<td>6.86</td>
<td>7.05</td>
<td>0.036*</td>
<td>345.04</td>
</tr>
<tr>
<td></td>
<td>n = 172</td>
<td>n = 171</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Psychological well-being</td>
<td>12.74</td>
<td>13.06</td>
<td>12.43</td>
<td>0.017*</td>
<td>327</td>
</tr>
<tr>
<td></td>
<td>n = 160</td>
<td>n = 169</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Physiological well-being</td>
<td>8.76</td>
<td>9.06</td>
<td>8.75</td>
<td>0.379</td>
<td>343</td>
</tr>
<tr>
<td></td>
<td>n = 167</td>
<td>n = 178</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Group indicator of optimism</td>
<td>21.95</td>
<td>22.43</td>
<td>21.95</td>
<td>0.498</td>
<td>354</td>
</tr>
<tr>
<td></td>
<td>n = 173</td>
<td>n = 183</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Optimism, pessimism</td>
<td>3.21</td>
<td>3.26</td>
<td>3.18</td>
<td>0.298</td>
<td>351</td>
</tr>
<tr>
<td></td>
<td>n = 171</td>
<td>n = 174</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Coping</td>
<td>2.86</td>
<td>2.82</td>
<td>0.065</td>
<td>351</td>
<td>2.453</td>
</tr>
<tr>
<td></td>
<td>n = 171</td>
<td>n = 171</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Teacher/learners</td>
<td>7.11</td>
<td>7.26</td>
<td>7.30</td>
<td>0.437</td>
<td>338</td>
</tr>
<tr>
<td></td>
<td>n = 164</td>
<td>n = 176</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Peer relationships</td>
<td>4.41</td>
<td>4.47</td>
<td>4.49</td>
<td>0.587</td>
<td>305</td>
</tr>
<tr>
<td></td>
<td>n = 154</td>
<td>n = 153</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Professional characteristics of teachers</td>
<td>7.08</td>
<td>7.05</td>
<td>7.26</td>
<td>0.235</td>
<td>340</td>
</tr>
<tr>
<td></td>
<td>n = 168</td>
<td>n = 174</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Innovativeness, strength of purpose</td>
<td>6.47</td>
<td>7.24</td>
<td>6.42</td>
<td>0.000*</td>
<td>325.94</td>
</tr>
<tr>
<td></td>
<td>n = 166</td>
<td>n = 168</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Value system of the school</td>
<td>32.81</td>
<td>36.70</td>
<td>32.94</td>
<td>0.000*</td>
<td>318</td>
</tr>
<tr>
<td></td>
<td>n = 153</td>
<td>n = 145</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Order/discipline</td>
<td>6.57</td>
<td>6.40</td>
<td>6.05</td>
<td>0.026*</td>
<td>330.90</td>
</tr>
<tr>
<td></td>
<td>n = 166</td>
<td>n = 173</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the .05 level
Learners’ evaluations of school values by mother tongue

Comparing evaluations of school values by learners from Estonian and Russian-medium schools, no statistically significant differences were revealed in the case of two indicators. In the case of diligence and desire for self-realisation, the evaluations of all learners were similar, and, according to learners’ evaluations, these were important in the case of the school with either language of instruction.

However, there were statistically significant differences in the case of all the remaining indicators (Table 2). In the case of learners’ safety (p < 0.000), learners from the Russian-medium schools felt safer at school that their Estonian-speaking peers. There was also a statistically significant difference concerning learners’ academic performance (p < 0.009). The reason may be that Russian-speaking learners are more motivated and orientated to learning because, in the future, it will allow them to get employment easily and secure their position in the Estonian society. An analysis of learners’ health in the case of Russian-speaking learners also revealed a statistically significant difference (p < 0.000). Learners’ healthy behaviour and worries about their health in Russian-medium schools were also confirmed by previous research (Veisson, Kallas, Leino, & Ruus, 2007; Veisson & Sakk, 2009). There was also a significant difference in the case of learners’ evaluations of the relationships between them (p < 0.000). Russian learners were more positive in evaluations of these relationships than their Estonian peers. The politeness indicator also had a statistic difference (p < 0.070) and higher evaluations by Russian learners. The indicators of smart appearance (p < 0.000) and honesty (p < 0.000) were statistically different. There was also a significant difference between learners in the case of joy from school, curiosity and tolerance.

Table 2. School values of learners (t-test)

<table>
<thead>
<tr>
<th>Means</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estonian</td>
</tr>
<tr>
<td>Learners’ security</td>
<td>3.18 n = 231</td>
</tr>
<tr>
<td>Academic success</td>
<td>3.39 n = 287</td>
</tr>
<tr>
<td>Learners’ health</td>
<td>3.23 n = 258</td>
</tr>
<tr>
<td>Good interpersonal relationships</td>
<td>3.16 n = 241</td>
</tr>
<tr>
<td>Politeness</td>
<td>3.42 n = 282</td>
</tr>
<tr>
<td>Correct appearance</td>
<td>2.43 n = 207</td>
</tr>
<tr>
<td>Honesty</td>
<td>3.27 n = 263</td>
</tr>
<tr>
<td>Helpfulness, caring</td>
<td>3.18 n = 246</td>
</tr>
<tr>
<td>Enjoyment of school</td>
<td>3.09 n = 240</td>
</tr>
<tr>
<td>Discipline</td>
<td>3.25 n = 239</td>
</tr>
<tr>
<td>Curiosity, brightness of thought</td>
<td>3.00 n = 206</td>
</tr>
<tr>
<td>Tolerance</td>
<td>2.92 n = 213</td>
</tr>
<tr>
<td>Wide knowledge</td>
<td>3.09 n = 232</td>
</tr>
<tr>
<td>Wish to improve oneself</td>
<td>3.30 n = 244</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the < 0.05 level
Learners’ evaluations revealed that Russian learners’ evaluations in the case of all indicators were higher, i.e. more positive than those of Estonian learners. Learners’ attitudes to the learning environment of the school and its values were statistically different. At the same time, according to evaluations of learners from Stage II of basic school, the most important value is the academic performance, as the research conducted in 2009 indicated.

Learners’ evaluations showed that the differences between Estonian and Russian learners concerned both indicators connected with academic performance, components of social coping and general human values that have been formed by the school.

Parents’ evaluations of school values

The comparison of evaluation of school values by learners and parents showed that their evaluations have statistically significant differences in the case of learners’ health (p < 0.041), appearance (p < 0.000) and tolerance (p < 0.051). Learners in Stage II of basic school are teenagers, and their understanding of health problems is different from that of their parents. In the teenage years, risky behaviour is rather typical as a means of finding one’s identity or testing one’s skills and abilities. At the same time, opinions of friends and group behaviour, where there is less responsibility, can influence different factors connected with health. That is why parents’ worries for their children’s health are understandable. Appearance is another issue in the case of teenagers who often disagree with their parents. Tolerance in school is connected with learners’ relationships both with their teachers and peers. Social relationships are very important for learners in basic school; conflicts often occur due to different problems and misunderstandings. That is why learners often perceive tolerance differently than their parents, who see the school primarily through evaluations of their children. Parents are very often not aware of the conflicts in social relationships as learners would rather discuss their problems with friends than with parents. On the one hand, the reason can be the lack of trust at home and the child-parent gap. On the other hand, the reason can also be the fact that the learners do not want to burden the parents with their problems and try to cope with the problems on their own.

The comparison of the responses of parents of children from Estonian-medium and Russian-medium schools revealed a statistically significant difference in the Estonian and Russian parents’ evaluations of appearance (p < 0.000) and tolerance (p < 0.003). Thus, the disagreements between parents and learners from Estonian-medium schools are connected rather with learners’ understanding of looks and tolerance.

There were no statistically important differences revealed in the evaluations of parents and learners from the Russian-medium school.

Evaluations of Estonian and Russian parents showed statistically significant differences in regard to several different indicators (Table 3). There was a statistically significant difference in the case of learners’ safety (p < 0.000), and Russian parents were more worried for their children. There was also a statistical difference in the regard to indicators of academic performance (p < 0.002), learners’ health (p < 0.011) and good relationships (p < 0.008) where the evaluations of Russian parents were also higher than those of Estonian parents. There was a statistical difference in the areas discipline (p < 0.000) and general knowledge (p < 0.010). Russian parents were more worried about safety and health of their children. At the same time, they considered academic performance and good relationships more important. They also indicated that discipline and general
knowledge were essential. Estonian parents’ evaluations of school values were lower; this can be explained due to the fact that Russian parents feel the pressure of society and would like their children to integrate into the Estonian society as painlessly as possible. One possibility for such integration is supporting child’s education and providing him/her with all the possible help and support.

Table 3. School values of parents (t-test)

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estonian</td>
<td>Russian</td>
</tr>
<tr>
<td>Learners’ security</td>
<td>3.12</td>
<td>3.54</td>
</tr>
<tr>
<td>Academic success</td>
<td>3.36</td>
<td>3.60</td>
</tr>
<tr>
<td>Learners’ health</td>
<td>3.13</td>
<td>3.42</td>
</tr>
<tr>
<td>Good interpersonal</td>
<td>3.18</td>
<td>3.45</td>
</tr>
<tr>
<td>relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Politeness</td>
<td>3.34</td>
<td>3.48</td>
</tr>
<tr>
<td>Correct appearance</td>
<td>3.02</td>
<td>3.37</td>
</tr>
<tr>
<td>Honesty</td>
<td>3.45</td>
<td>3.53</td>
</tr>
<tr>
<td>Helpfulness, caring</td>
<td>3.27</td>
<td>3.46</td>
</tr>
<tr>
<td>Enjoyment of school</td>
<td>3.22</td>
<td>3.30</td>
</tr>
<tr>
<td>Discipline</td>
<td>3.27</td>
<td>3.61</td>
</tr>
<tr>
<td>Curiosity, brightness of thought</td>
<td>3.16</td>
<td>3.31</td>
</tr>
<tr>
<td>Tolerance</td>
<td>3.22</td>
<td>3.40</td>
</tr>
<tr>
<td>Wide knowledge</td>
<td>3.27</td>
<td>3.51</td>
</tr>
<tr>
<td>Wish to improve oneself</td>
<td>3.29</td>
<td>3.43</td>
</tr>
</tbody>
</table>

* The mean difference is significant at the < 0.05 level

Teachers’ understanding of learners’ coping at school

In the teachers’ opinion, learner’s coping at school is how he/she copes with learning, his/her academic performance. Teachers indicated that learners’ ability to cope with life in general, including independent living skills, is important. Learner’s coping also includes communication with both teachers and peers as well as the skills to cope with teachers’ instructions and tasks during the lesson and at school. Skills of playing and behaviour during the break are also coping skills.

Well, he/she copes with learning, communication with peers and can cope during the break. If a learner understands what he/she is told and can organise his/her things nicely, can work independently with a textbook already in Form 4.

In the opinion of Russian teachers, learner’s coping depends primarily on the child’s motivation in terms of school and learning. Academic performance and learning skills are among the most important indicators of coping. The child’s physical preconditions, health and psychological characteristics also play a role in coping.

First of all, it is the result the learner gets in the learning process. And the learner can achieve this result if he/she systematically works in a class and at home. Then there is a result.
Well, I think the most important is if the child wants to go to school. If he/she comes to school and if he/she studies, then the child copes if he/she wants to. Well, motivation, in any case, if there is a target, a goal. If there is no goal, then the child comes to school just to spend time, he/she is not successful; he/she does not cope.

The difference between opinions of Estonian and Russian teachers is that Estonian teachers consider social skills to be a part of coping, too, while Russian teachers mentioned health only.

When speaking about factors that influence academic coping, teachers, first of all, mentioned different factors that can cause problems. Lack of motivation for learning and poor learning and cognitive skills cause difficulties in learning. Academic coping can also be influenced by personality. Health problems, emotional state and learner’s helplessness can also cause academic failure.

Home was mentioned as the second factor. Parents’ lack of time, social problems at home, parents’ attitude towards school and education, their attitudes towards life and their values can influence the child’s coping along with parents’ level of education and the demands they set on the child.

The family certainly matters, and, well, the learners in the form and their background. To the extent children are successful or how many of them are successful. Not successful in the sense of how many of them get fives, but how motivated to learn they are.

The school and related influences were mentioned as a third factor. Teachers found that the teacher, his/her attitudes and requirements influence learner’s coping. At the same time, learner’s coping can be influenced by a change of class, teacher or subject teachers during the academic year.

The form’s general influence was mentioned as a factor related to school. Relationships between children in a form, the micro climate of the form can also influence child’s coping.

Such general mood and attitude, which create the microclimate of the form and help to achieve good marks, good academic results and contribute to knowledge in general are favourable.

The last major factor teachers mentioned was the environment in which the learner is and which influences the learner.

Well, it is also about environment, I imagine that it is influenced by many things – it can be influenced by media, neighbours, school staff. I cannot say even. Everything can influence it. It is all, all which surrounds the learner.

In their evaluations of learners’ social coping, teachers mentioned, first, factors connected with the learner which can cause problems, including communication and behavioural difficulties with peers and classmates as well as problems connected with learners’ self-esteem and confidence, lack of attention or desire to dominate in class. Learners may also have problems with adaptation in new situations, unstable emotional states and negativism. Teachers also thought that health and peculiarities of teenage years could also cause problems in social relations.

Yes, yes, confidence and all like that, so that there is no confidence at home and, then, at school, and the student does not have courage even to ask a question.
The second factor which, in the teachers’ opinion, influences learners’ social coping is the home. Teachers thought that family’s life style, relationships within the family, the number of children in the family and parents’ divorce influence child’s social skills. Children are also influenced by parents’ education, social status, unemployment and resulting poverty and alcoholism. Parents’ own coping with everyday life, material security, working abroad, which is a growing tendency in Estonia, cause social problems at school. In the last years, the number of parents working abroad has been increasing, and children are left by themselves or in the care of grandparents. The number of the so-called European Estonians is increasing, thus bringing drastic social problems to school.

Child’s social coping is influenced by child’s home environment, the family’s own coping and the example of parents. If there is a family, but one parent has to work outside Tallinn or farther, for example, abroad, it also matters.

The third influence teachers mentioned are those connected with school. They thought that transition from primary school to basic school with its subject-based system causes learners’ problems with social coping. Social coping is also influenced by trust in the teacher or lack thereof. On a class level, teachers pointed out the influence of relationships within the form, existence of leaders and their attitudes and values in the form.

I think that every student has a self-image, the way the student sees him/herself, the way he/she feels and where he/she would like to be. Some values and beliefs are brought from home: what a value is and what – is not.

What changes have happened within the class in the last five years?

Broadened horizons due to better possibilities like travel around the world were mentioned as a positive change. Teachers think that modern learners’ way of thinking is different, it is getting more and more difficult to understand each other.

Almost all teachers pointed out that learners spend a lot of time with the computer. Teachers believe that the indifference has increased while the ability to concentrate and pay attention has decreased. Reading skills have worsened, and there is a lot of learned helplessness and insufficient skills of independent work.

Learners’ attitudes towards learning have changed. The mark is not the motivator for learning any more. Education is not as valued.

If comparing to previous forms, then the older I myself become, the more difficult it is to understand them. Their thinking world is different – ethical issues, the way they express themselves, even this money thing. I do not understand their games or their jokes. The attitude to learning has changed; they have become indifferent, even to marks.

Teachers believe that relations with parents have also changed in the last five years. Social and financial situations have worsened drastically. Parents have less and less time for children. At the same time, children are increasingly unsupervised due to the fact that parents are at work. Some of them work abroad, and children are by themselves. Parents cannot cope with their children, and parents’ responsibility for their children has decreased.

There are many families where parents become unemployed before the child finishes school, because there are unemployment issues in some places. I
In teachers’ opinion, learner’s coping is connected rather with studying or academic performance. In the case of Estonian teachers, social coping was also mentioned as a part, which influences children’s coping in a more general perspective. Teachers value learner’s social preparedness and skills which support academic coping at school. Factors operating at the micro level – home-parents, school-teacher, form, classmates – directly influence learner’s coping at school. Teachers also pointed out factors of the environment. They also mentioned the time factor, which also influences children’s coping. It is the fast changing society, changes in society with time. Constantly developing information technology causes changes in both social and academic coping of learners.

Discussion

As a result of the previously stated research, it can be argued that fast changes in society are also reflected in the educational life. Society’s expectations and schools’ possibilities as well as understanding the learner’s coping are contradictory. Expectations of both learners, parents and teachers are connected with academic performance at school.

How do learners, parents and teachers evaluate learners’ coping and factors affecting it at school?

The results of the research indicate that the learners, parents and teachers who took part in the research in both Estonian and Russian schools link the aspects of coping with academic success. Additionally, teachers in Estonian schools consider the learners’ skills of social coping to be important.

Valuing academic achievement is also confirmed by previously conducted research in Estonian-medium and Russian-medium basic and secondary schools in Estonia from 2004 to 2007 (Veisson et al., 2007; Sakk, 2008; Veisson & Sakk, 2009).

Both the Estonian as well as Russian school teachers consider home and parents the main factors that influence coping skills. According to the teachers, changes in society have changed common beliefs, attitudes and the way of thinking among the parents and the learners, causing difficulties in learners’ academic as well as social coping. Parents and teachers of the Russian community are more demanding and more worried for the future of their children, which has been shown by results of previous research (Lukk, Sakk, & Veisson, 2008).

The teachers of the upper primary stage of schools or at the secondary level are focused on teaching their subject and on learners’ learning (in its narrow meaning) rather than on the social development of children. School values are oriented towards academic success and soft values like tolerance and helpfulness are relatively less important (Lukk et al., 2008).

The current situation clearly shows that, in the teachers’ opinion, independent thinking, creativity, critical and analytical thinking and social skills are not constituents of learners’ coping. However, these are the skills and qualities school graduates are expected to have to help them make the right choices and decisions in their lives. In Estonian-medium as well as in Estonian/Russian-medium schools, the main focus is on academic success, i.e. successfulness of coping is evaluated by marks. There are certain scales, and the teacher’s role is to prepare a learner for state level tests and examinations.
which are the basis for evaluation of teacher’s skills. At the same time, social skills and independent thinking skills are not the focus of attention. Learners’ independent thinking, skills of cooperation and teamwork, analysing capability, public speaking skills, confidence, the skills to make the right choice and bear responsibility for the decisions made – development of these skills is not a priority at school. Emotional competency and social competences presuppose teachers’ conscious and skilful guidance of learners, learners’ cooperation with teachers on partnership conditions, learners’ active participation in the study process, discussions and possibilities for making mistakes. However, at schools, the role of the teacher is still understood in the outdated way meaning the teacher is to convey knowledge. Thus, the role of the teacher does not allow learners to express their opinion or thoughts. Teachers’ understanding of learning is contradictory to new requirements to the study process, and this contradiction is reflected in learners’ learning outcomes.

The fact deserving attention is that, when the teachers evaluated the aspects of learners’ coping, they focused on the learner, parents-home, environment, but none of the teachers mentioned his/her role as an aspect of learner’s coping. Teachers’ low reflection capabilities illustrate the fact that they do not see their contribution to or role in formation of learner’s coping skills. The responsibility for success or failure of coping was directed outside the classroom/school. However, the initial and basic role of the teacher is to form learners’ learning skills, emotional competency and social skills so that they could cope at school.

The research of the efficacy of Estonian basic schools carried out in 2009 showed that teacher training in Estonia is directed to development of learners’ cognitive rather than social competences. The reasons can be both requirements of the curriculum and educational priorities acknowledged by the society (state level tests, international tests) (Uibu, 2009). Teaching and Learning International Survey (TALIS) of the the Organisation for Economic Cooperation and Development (OECD) also revealed that teachers relations with learners are problematic, and the reason for that, in the teachers’ opinion, is the low capability of learners. Teachers who evaluated their relationships with other teachers as being better also assessed learners’ capabilities higher (Loogma, 2010). Teachers’ low self-efficacy and reflection capabilities are also connected with the feeling that the teacher established a good contact with learners and could influence his/her learners and motivate them. Teachers’ with high self-efficacy, i.e. professionally confident teachers, felt more secure in a lesson, and they used new teaching methods more boldly. In comparison to teachers from other countries, teachers from Estonia have low self-efficacy (Sarv, 2008; Loogma, 2010).

To what extent do the evaluations of learners, parents and teachers differ?

The results showed that the most troublesome issues for learners were, first of all, social relations, coping, relations with teachers and peers. These issues were also revealed by the research “Prevention of drop-out from basic school”, which was conducted in 2012. According to the results of this research, learners consider school-related problems to be connected primarily with studies. However, in the second place, there were relations/conflicts with teachers which caused students to get behind in their studies and drop out of school (Pettai & Proos, 2012).

The results of the research showed that learners’ evaluations of studies-related aspects and the school, as the learning environment, turned negative in Form 5, and, in Form 6,
the situation worsened, and that was the case of both Estonian-medium and Russian-medium schools. The reason may well be the fact that the form teacher and the school stage change, and learners begin with subject-based learning at the second stage of basic school.

Poor academic performance is the tip of the iceberg below which there are plenty of unsolved problems – conflicting relationships, bullying at school, low self-esteem. The beginning is Form 5 where the rate of at-risk children is 37%. From here, the number of at-risk children increases drastically till Form 8. 42% of learners who admitted they had problems could not cope with learning. The main bottlenecks for children at school are languages and mathematics, where falling behind begins from (Pettai & Proos, 2012). That was also shown by the result of the given research.

Contradictions in the values and evaluations of learners and adults can be explained by the different understandings between generations and age-conditioned peculiarities of learners. The results of the research among parents conducted in 2008 revealed that, in the parents’ opinion, school for a child is the place where he/she belongs and where he/she finds friends easily. Thus, parents consider that the school plays a positive role in the life of their child. In parents’ evaluation, the school values children’s safety and considers academic success very important. For the parents of children from Russian-medium schools, the indicator of academic success is more important and considered to be a very important indicator. For the parents, the important issues are learners’ success at school, safety and health, while for learners themselves social relations are important (Sakk, 2008). The parents evaluate learners’ learning potential higher than teachers do (Kärkkäinen & Räty, 2009).

Academic development is social both by the environment and by the essence. In addition to learners themselves, the essential participants of learning are teachers, classmates, family members and other people important for the child. Learners’ relations have an impact on academic development, and, in primary school, beside the important role of adults, relationships with peers become more essential (Pianta & Stuhlman, 2004; Sakk, 2008; Mailend, 2009).

The results of the research showed that the differences between the responses of learners from Estonian-medium and Russian-medium schools lie in Russian learners’ higher evaluations of aspects of coping as well as in Russian parents’ and teachers’ larger concern about the results of learning outcomes. Russian parents and learners were more concerned about health, which was also revealed from answers of Russian teachers. At the same time, the focus of Russian teachers in the coping process was directed to learner-related aspects. They considered learner’s learning outcomes, motivation and active involvement to be important. Social coping was not mentioned. Thus, for Russian teachers, learning is acquisition of classic knowledge where learners are not seen as cooperation partners and learner’s social skills do not play any role. Russian teachers are also more authoritarian, which, supposedly, is due to their background, teacher training that they had in the Soviet Union times and acquired understanding that the teacher is the decision-maker at school. The higher level of authoritarianism of Russian-medium schools in Estonia has also been shown by previous research (Veisson et al., 2007).

At the societal level, it is important to reconsider learning and teaching-related issues. It is essential to change the way of thinking of the whole educational life, which can cause changes in the education paradigm.

Learning is a continuous process; it is not only a concentration of knowledge in the learner’s head. Learning and teaching is a cooperative venture between the teacher and
the learner where new knowledge or skill is born as a result of the contribution from both sides. Provision of learners with basic knowledge requires a teacher to have increasingly new knowledge and skills about the ways of involving learners actively into the study process.

The important question here are numerous: What basic knowledge and skills does a young person need to cope successfully in the future? Is the previous fact-based knowledge enough or is it important to pay more attention to the formation of human values and to the development of personality? Should we rather support the development of coping skills, social skills, communicative competences, skills of cooperation, teamwork, creativity, independent thinking and responsibility?

How do we use different modern learning environments in formal education, and how do we use knowledge gained in informal education for the learning process? These are the new challenges in teacher education and training as well. Reconsideration of the teacher’s role and keeping up with the times is the key of sustainability of education.

It is important for learners to gain a positive experience from learning, to be able to study, to evaluate their resources adequately and to build their career and learning paths. Life-long learning is an important part of sustainable education.

One of the possibilities to find a solution is to provide working teachers with corresponding skills via in-service training. In initial training, it is important to provide the teacher-trainee with corresponding basic skills and practice. Based on the rapid change of society, it’s important to reorient teacher education and training. Social skills, forming the basic skills of learning and using different websites for studying will become crucial in teaching the new generation.

Limitations of the research

The questionnaires used in the present research were developed by the Institute of Educational Sciences of Tallinn University within the framework of the research project “School as Developmental Environment and Learner’s Coping” (registration code 0132495s03). The questionnaires were designed with the goal of finding out how learners feel at school and which aspects affect learner’s coping. Different questionnaires were developed for different target groups. As questions for learners and parents (except for number 14) were not analogous, the results allowed comparing of general characteristics of coping. The given research did not use the academic achievement of the sample of learners as the background research. The results of this research were presented based on the learners’ own evaluations of factors of coping.

Recommendations and suggestions to improve the situation

- In order for the school to support learners’ academic and social coping when they move from Form 4 to Form 5 and also to receive an overview of their learning skills and habits, it is necessary to establish cooperation between the class teachers in the primary school and learners’ future subject teachers and the class teachers in the basic school. The aim of the cooperation should be to find out about the level of learners’ knowledge and learning skills as well as to equate requirements in transition to the subject system.
- It is necessary to value the role of the class teacher and the importance of extra-curricular activities at stage II of the basic school.
• During the transition from the primary school to the subject system of the basic school, each teacher is to find out and be aware of the level of learners’ learning skills and of their learning habits. The teacher is also to provide an overview of the way his/her subject is taught and which learning skills are required for the subject.
• Using different forms of cooperation, it is necessary to make parents aware of the importance of their role, their support and its effect on the learner’s academic achievement. The school and teacher are the counselling support for those parents whose children have problems with coping.
• It is necessary to apply the school system of mentors who support learners who have problems with coping.
• In the development of study materials, it is necessary to pay more attention to the content, its correspondence to learners’ ages and abilities, taking into consideration peculiarities of their development. It is also essential to apply different digital and media environments in the teaching and learning processes as in these environments because learners’ skills enable them to acquire this knowledge in an appropriate environment.
• In initial and in-service teacher training, more attention should be paid to teachers’ skills/possibilities to form and support the development of learners’ social skills.
• In the case of initial teacher training, the important aspects are personal qualities of teachers-to-be, good communication and cooperation skills, emotional intelligence, empathy and creativity. The modern approach to education supports the child-based learning concept (the socio-constructivist approach), in which adults create different possibilities for initiation of the learning process. These skills and this knowledge should be valued more and dealt with in teacher training.
• You may want to add a conclusion about the importance of teacher efficacy as a goal since it was mentioned in the study.

Possibilities for further research

As a first step, it would be essential to carry out research which focuses on teachers’ own reflection and possibilities as well as on teachers’ vision of their role in supporting learners’ coping in school and their own efficacy. Secondly, it would be necessary to carry out research on learners and parents where the research questions would be analogous for the both sample groups. And it would be possible to bring them into compliance through coding. This would allow finding out how parents and learners evaluate the role of the teacher in the formation of learner’s coping skills and to what extent the school uses different methods to support learners’ academic learning skills and social skills. Thirdly, it would be useful to take characteristics of learners’ academic and social coping for the background data of the sample. The characteristics should be measured and described so that they could be compared to the future results.

In teacher education and training, a significantly greater attention should be paid to the development of emotional competences and social skills, which help teachers to cope more successfully in the classroom (Bosacki, 2008; Corcoran & Tormey, 2012). Emotions and emotional information are an important part of problem-solving and adaptation in everyday life (Salovey & Mayer, 1990).
The globalised world is open for youth, and the labour market offers possibilities of equal competition for everybody. The challenge that schools and teachers face is to provide learners with coping skills, which guarantee their successful coping in the future.

References:


Sakk, M. (2008). Kool kui õpilaste toimetuleku mõjutaja lapsevanemate hinnangul [Parents’ opinions about school as environment which fosters success (coping) of their children depending on a school type]. In N. Zorina (Ed.), *ACTA et Commentations Collegii Narovensis* [Publications of the Narva College of the University of Tartu] (pp.74–91). Narva: ÕÕ SATA.


Correspondence:

Monica Sakk, PhD candidate, Institute of Education Sciences, Tallinn University, 25 Narva Street, Tallinn 10120, Estonia. Email: Monica.Sakk@tlu.ee
WHY EDUCATION FOR SUSTAINABLE DEVELOPMENT NEEDS EARLY CHILDHOOD EDUCATION: THE CASE OF NORWAY

Kristin Gregers Eriksen
Telemark University College, Norway

Abstract

With this article, the author intends to outline a legitimising basis for implementing education for sustainable development (ESD) in early childhood education, in juridical, pedagogical and political terms. Starting from our current ecological crisis, the ontological assumptions of modern culture are considered obstructive to possibilities for mitigation. The author affirms a need for constructing new conceptual frameworks in the field of ESD suitable also for the youngest children. The very logic of the reigning notion of knowledge requires revision in order to secure successful implementation as well as fostering citizens with the moral agency required to meet calamity. Ontological insights from deep ecology are suggested integrated with the more practical epistemological concept of ecological habitus. Possible gains are not exclusively related to sustainability, but also include positive impacts on the life quality of young children as such.

Key words: early childhood education, kindergarten, cultural formation, habitus

Introduction

Following up on international initiatives on education for sustainable development (ESD) such as the United Nations [UN] Bonn Declaration (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2009), the Norwegian Directorate for Education and Training [UDIR] stated in a central strategic policy document that knowledge on sustainable development (SD) should imbue all levels of the educational system (UDIR, 2006). However, empirical studies implicate that this seldom pans out in practice (Raabs, 2010; Sinnes & Jegstad, 2011). While SD as such has become an integral part of the language and justification of policy in Norway, educational practices tell of a different story. The absenteeism of sustainability issues might partly be related to the lack of competence and confidence in interdisciplinarity, a central pillar of and necessary methodological prerequisite for ESD, in current praxis. More significantly, the paradigmatic idea of modernity implicating that problems are to be split up and understood in purely atomistic ways seems to permeate educational thinking (Morin, 2001). The system is serving as apologist for the modern industrial society that brought about our current environmental struggles, as parts of the broad hegemonic process for “consumer dream-structures” (O’Sullivan, 1999, p. 43). The focus of learning is weighted towards developing and accumulating technical knowledge, whilst emancipatory and agentive dimensions
are principally deficient. The ecological crisis we are faced with today challenges this epistemology-based on substantial dualism, with its fundamental ontological division between nature and culture. Such logic has allowed natural resources to appear as inexhaustible sources that the Promethean human being can advantage from (White, 1967; Ingold, 1992). Approaches towards dealing with environmental and distributive challenges are in light of this characterised by a techno-rational logic (Bell, 1991). However, the complexities of environmental issues today reveal the inadequacy of the corresponding understanding of knowledge and epistemology.

Moreover, the understanding of ESD seems to be locked into a traditional logic of education in general and, more specifically, what has commonly been termed as environmental education, with hegemonic weight placed on the traditional ‘hard’ sciences. The importance of cultural and social aspects is not recognised, contradictory to the very purpose of SD with its interdependent dimensions. Importantly, this leads to a lack of integration of democracy and participation in educational practice and learning processes. However, seeing children as competent agents of change is integral to the implementation of ESD. Davis (2009) recognises this as the difference between education about, in and for the environment, arguing that the latter is commonly left out. In addition to the obvious pedagogical arguments in this context, this is not least highly problematic in light of children’s relatively new won formal rights as citizens through the UN Declaration of the Rights of the Child (UNCRC) (UN, 1989). This also holds extensively true concerning the core values of the local juridical framework on education in Norway.

**Aims of the article**

As this article argues, if we are to achieve the goals of ESD, it is a necessary logical step to reconceptualise our very notions of environmental education, pedagogy and children’s development as such. Fundamentally, this includes recognising the important role of early childhood education (ECE). As Sarronmaa and Sarronmaa (2009) point out, the educational system commonly meets ecological challenges either with suggesting isolated practical didactic solutions or emphasising the unclear relation between school policy and political will. The last strategy they suggest, that of establishing theoretical perspectives as foundations for pedagogic praxis, seems to be quite absent from the picture. Hereunder, the forthcoming work is intended as a contribution in this regard, but almost as much purely a legitimating basis for the necessity of turning efforts at the very ontological and epistemological foundations of current educational thinking and including also the very youngest of the system. Interestingly, the article shows that by integrating elements from ecological philosophy and practice theory with educational thinking, the conceptualisation of life quality for young children can also be addressed through the concept of ESD.

Thus, there are two inter-reliant aspects to be elucidated in the forthcoming, hereunder

1) the importance of understanding ESD as a process of social learning and a fundamentally value-based approach in order to develop new theoretical understandings;

2) the significance of an emerging new understanding of young children as citizens for transforming theoretical concepts into educational practice.
The article is primarily intended to function as an outline of a situation and context, the scope is more broad than deep. However, a concept of ecological habitus is tentatively suggested as a starting point for further development of new theoretical frameworks.

**Presentation of the field**

*The Norwegian kindergarten tradition and ESD*

In the undoubtedly quite gloomy context of the conditions for ESD in Norway, a lacking focus on the youngest children is a particularly severe precedence. In the governmental strategy on ESD, ECE is briefly mentioned but not treated in further depth at all. On the one hand, this might be understood to reflect the above-mentioned focus on rationalistic knowledge, in that the pre-school sector in Norway traditionally has held an ambivalent attitude towards being included in the school system as such, given the strong and dominant social-pedagogic tradition in the field (Kunnskapsdepartementet [the Norwegian Ministry of Education and Research] [KD], 2009). This is especially connected with a resistance towards the concept of education. Discourse on kindergartens has been coloured by a parallel need of defining it as ‘something different’ in relation to school and, at the same time, legitimising it as school-preparatory in response to international as well as national political pressures (Oodegaard & Krüger, 2012). Moreover, it might be related to views on the nature of the type of knowledge ESD involves as it is a common view to see the youngest children as too cognitively immature to be faced with the harsh realities of global environmental issues such as climate change (Edlev, 2008).

Not necessarily all wrong, this fails to recognise the dual advantages both in terms of children’s cognitive development and well-being as well as reaching societal goals of SD with the implementation of ESD into ECE. UNESCO states that ESD “should be of a quality that provides the values, knowledge, skills, and competencies for sustainable living and participation in society” (UNESCO, 2009, p. 4). These values correspond strikingly well with the core goals in the Norwegian curriculum document for kindergartens (KD, 2011), where the holistic process of development and learning as Bildung (Norwegian danning) has precedence over pure knowledge acquisition. Additionally, the absence of ESD perspectives reflects the lack of an adequate conceptual framework for politically acknowledging, theoretically understanding as well as practically operationalising the connections between young children, participation and sustainability.

*A field with a plan*

In the curriculum and core strategic documents of the Norwegian kindergarten system, issues related to the environment and sustainability are commonly placed in a ‘nature-category’. Thus, the foundations are to be found in natural science subjects, whilst the crucial cultural dimension is disregarded. In the curriculum plan for kindergarten, aspects related to SD are placed under the headline “Nature, environment and technique”, and only implicitly mentioned in terms of “environmental protection” (KD, 2009, p. 45). This reflects the permeating externalist idea of nature described above, as substantially different from us and something which needs to be protected due to its instrumental value to humans, neglecting its inherent value. More deeply, it is not sensitive to the pluralism of SD as such. While terms like skills and knowledge dominate school curri-
culum, the idea of learning in kindergarten is concentrated towards competences and development in the broad sense. The approach is remarkably consistent with the core idea of ESD. “For the individual, SD is the capacity of lifelong learning and development, which is based on a person’s all-round harmonious development” (KD, 2009, p. 13).

In fact, the term ESD might not even be sufficient to understand the whole picture; we should perhaps aim for educating for a sustainable citizenship as such, related to the choices of everyday life and sustainability as concrete, lived experience (Gadotti, 2008). This is however in no way discipline-specific and should not be confined to natural sciences alone. As Otto and Wohlpart (2009) write, the humanities are especially well disposed to effect values and beliefs and thus effect change in cultural and cognitive systems. After all, the technological and economic solutions proposed will have to be undertaken and interacted with by living human beings. What is more, in the European strategy for ESD developed by the United Nations Commission for Europe [UNECE], it is made clear that both formal and informal learning contexts are fundamental (2003). Thus, there is no factual opposition between a highly social-pedagogical kindergarten ideal and integration of ESD in plans, ideas and practices of learning for the youngest children; rather the opposite. Educating for a more sustainable future is at the core not solely about meeting and mitigating ‘challenges’, but more deeply interconnected with the quality of life by emphasising problem solving, critical thinking skills and “democratic means of promoting values” (Huckle, 1999, p. 38). The interconnectedness between life quality, education and developing self-identity is thus incorporated in the very term. This will in the forthcoming be illustrated by adding insights from deep ecology and place pedagogies to serve as proposed motivational structures.

**Central terms**

**Young children – what are they?**

In the context of the Norwegian kindergarten, the children discussed are at the ages 1–5 years old. After institutions for young children were organised by national law in 1975, the number of children receiving such services has skyrocketed. Today, around 90% of children attend kindergarten, and many spend as much as 40 hours per week there. The new reality of everyday life for the youngest members of society has spurred media debates and made governmental attention within the field more substantial. Contrary to what is described in Davis (2009) on the complexity and diversity of the ECE systems in many countries, the kindergarten sector in Norway is made quite uniform through substantial central governance. Its social-pedagogical tradition has always kept ‘care’ at its centre, but is increasingly challenged by material realities of the institution as well as the much powerful political discourse of learning. Although the responsibility for providing children with joy, care and well-being is firmly asserted in the national laws for kindergarten, the visions of objective rationality is lurking in the background. Already in 1996, the project “Making Lifelong Learning a Reality for All” was launched by the Organisation for Economic Cooperation and Development [OECD], and education in a life-span perspective became part of public debate in Europe (Juell, 2010). With the reports “Starting Strong” (OECD, 2001, 2006) the kindergarten sector in Norway was truly integrated in the educational sector through the concept of lifelong learning. This is, however, a concept of learning strongly grounded in the neoliberal discourse, which
comes with economic connotations, making the learning process figure in a logic of a transaction where the pupil receives ‘goods’ (Biesta, 2009). Quality is hence commonly understood as quantifiable results and the achievement of standardised goals. Among the highly debated issues of kindergartens is the increase in pressure to apply mapping tools and formal testing of children’s basic skills in language and mathematics (Oostrem, 2009).

So what is then ‘education’ and ‘learning’ when it comes to the youngest children? In this context, there is a need to distinguish between different ideological views of what children fundamentally are in social terms. Seeing children and childhood as historically flexible and thus socially constructed is by no means controversial, and Aries (1973) argued that the idea of childhood as such is a modern invention. The ideas of children in modern sociology can be roughly divided into two ideological categories. One perspective regards children as becomings who are naturally set to develop gradually into adult human beings and hence should be considered ‘unfinished’. The other strand understands children as beings in themselves and thus as competent citizens (James, Jenks, & Prout, 1998). The roots of modern pedagogy and educational thinking have been cut out by the former, cultivating our positivistic need to control, form and standardise to preserve order (Steinsholt & Oksnes, 2003). In this view, we ‘produce’ adults through education that is cut out to fit the modern society that actually brings about our current environmental troubles.

Learning and cultural formation

Current research traditions are more commonly based on social constructionist views where children are understood as social actors with agency, quite different from older universalistic traditions such as development psychology and functionalistic sociology (Lysaa, 2012). Children are seen as competent individuals forming their own lives and identities. Here the Norwegian concept of danning can be key to developing a more adequate theoretical platform for implementing ESD as education for the environment. The term can be traced back to the ancient Greek paideia, the Socratic dialogue, critical thinking and active learning as core. It was later revived but the bourgeoisie enlightenment as bildung, bringing with it connotation problems, appearing highly normative and associated with class-specific ideals of the bourgeoisie enlightenment (Ariansen, 2011). However, by applying the term cultural formation as an alternative understanding, the processual aspects as well as participation are emphasised (Oodegaard & Krøger, 2012). In the Norwegian context, cultural formation has been defined as a lifelong process of versatile self-development (KD, 2009). Applying this concept thus frees us from the passive picture of the child as mere receiver and opens for an integration of sustainability as a tool for better life quality and self-development. Moreover, it allows for seeing ESD as something that both can and must be approached already with the youngest children, as cultural formation is a process that principally can be understood to start already at birth and in principle never ends (Oodegaard & Krøger, 2012). Furthermore, as Samuelsson (2011) argues, foundations for knowledge construction as well as attitudes and values are formed in the early years. She illustrates this by referring to a set of interviews undertaken with pre-school children in Australia, demonstrating that their thinking of the state of the world actually connects with the holist concept of SD. They see links between waste, the well-being of the earth and quality of life for human beings.
Moreover, this must be seen in relation to their own interests, understandings and cultural contexts. Children’s participation will, of course, always entail recognition of their individual points of view.

The child as citizen

Within the discourse on the competent child, the development of children’s formal rights is a central pillar. This is strongly related to the UNCRC and most notably in terms of §12 on children’s right to participation. Although the convention has been ratified by all UN nations except the United States of America and Somalia, §12 is highly controversial, and many countries have used their right to modification on this (Smith, 2008). In the context of Norway, children’s right to participation has been thoroughly incorporated in national law in general, and it has become a central principle in juridical documents regarding kindergartens. The strengthening of children’s individual rights has been referred to as a development where children are recognised as citizens (Kjorholt, 2010). However, formal rights are not the same as factual rights, and precisely how this principle is to be translated into practical terms is vague and thus heavily debated. Acknowledging children as citizens also serves as a platform for arguing for the importance of ESD for young children. Although the pedagogical and social imperatives might be clear, ESD still seems difficult to prioritise in curriculum and strategy plans. This is contradictory to the inherent ethical implications in the definition of sustainability as such. SD was initially defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development [WCED], 1987). Thus, it makes strong implications on the responsibility of current generations towards the future. Philosophers have commonly coined the moral responsibility in terms of an imperative resting on Western countries towards the poorer parts of the world, arguing that we have a negative moral duty to not make matters worse for the people that are and in the future will be negatively affected by climate change (Pogge, 2002). This logic bears hold also for children, not only as representatives for ‘future generations’ of this intergenerational justice, but also in terms of the fundamental principles in UNCRC. These include not only their right to participation but not least the principles of prioritising the best interests of the child (§3) and the right to life and development (§6). There is thus a legal imperative towards facilitating a sound use of natural resources for new generations, something which fits straight into the fashionable discussions on children’s participation in ECE institutions as well as the case of ESD in ECE.

Discussion

Developing identity and learning for sustainability

Young children do hereunder not merely represent a target-group among others, but even more so important resources in reaching the goal of integrating a holistic cultural understanding of SD. Simultaneously, ESD approaches and ways of thinking also have potentially important contributions for children’s cultural formation and quality of life in itself. The currently flashing warning lights of increasing weight and physical health problems among Western children as well as psychological and cognitive disorders have
by Louv (2005) been related to the disconnection of children from their natural environment as a kind of ‘nature-deficit-disorder’. Psychiatrists have pointed to a possible connection between children’s detachment from nature and overprotection, with mental health challenges such as depression and anxiety. Such alarming developments are contextualised within core aspects of modern culture. Regardless of the potential relations here, possible gains of interacting with nature are well documented. Furthermore the thesis that aspects of modern culture and societal structures have problematic impacts on identity formation has been coined in many ways, joint by the notion that it makes for insecure children with its high demands of reflexivity (Hoêm, 1978; Ziehe, 1989; Glaser, 2011).

The need for experiencing correspondence between felt expectations and actual experiences is what Giddens described as ontological security (1991), denoting a kind of stable mental state and self-identity. Meaning is hence found in experiencing positive emotions and by avoiding chaos and anxiety. This is reliant on the individual’s ability to give meaning to her life, which is fundamental for self-confidence and well-being. Children create meaning and understand their surroundings through processes of auto-poiesis (Luhmann, 1995), in dialectic interplay with their surroundings. This process is especially closely connected to the body, as one thinks and experiences through and with the body. Yet, for children this pre-reflexive epistemology is completely dominating their experiences (Merleau-Ponty, 1984). Furthermore, in contrast with adults, young children have a generally gestalt-orientated epistemological sense that is lost somewhere along their socialisation process toned towards the specialisation of modern society (Jakobsen, 2005). Seeing nature and culture as detached spheres are hereunder stages in an ‘unnatural’ process of learning to see oneself as external to nature. Empirical studies support this notion that understanding inherent connections in nature is an ability that is developed at an early age (Phenice & Griffore, 2003). This is integrated with children’s moral self development. Children show concern for their natural surroundings already before they experience acknowledgement of their self-identity, and the experience of acting morally is part of creating an understanding of oneself as a moral agent with capabilities. Numerous studies implicates that a positive environmental ethical attitude is deeply interconnected with early play in and interplay with nature (Chawla, 1988). Hence, internalising sustainability as intrinsic part of moral agency is something that should and, perhaps also must, start during the years of kindergarten and pre-school.

Feeling at peace in a protected place

The fractured and unstable characteristics of modern identity formation have led to acknowledgement of our disembeddedness from place (Giddens, 1991) as a representative for ontological security. The externalist ideas of knowledge and nature have not least been severely challenged by the physical realities of the environment literally ‘moving closer’.

In fact modern man for a long time believed that science and technology had freed him from a direct dependence on places. This belief has proved an illusion; pollution and environmental chaos have suddenly appeared as a frightening nemesis, and as a result the problem of place has regained its true importance (Schulz, 1984, p. 19).
This is related to the cognitive challenge of grasping the realities of environmental issues in their essentially global character and its associated problems of placing cause and effects on a comprehensible scale. Reality is that for most people it is far to Greenland and a long time until 2050. Place-oriented pedagogies are thus needed so that the education of citizens might have some direct bearing on the well-being of the social and ecological places people actually inhabit (Gruenewald, 2003). Place is, in the phenomenological sense, understood as particular lived place-worlds of human beings (Birkeland, 2011). It involves both the subjective and objective forms of the world around the individual human being, and, in relation to children’s development, this is in phenomenological terms described as the lifeworld. Place thus becomes a qualitative, total phenomenon that cannot be reduced to its individual, material pieces. It can be described as dwelling or “being at peace in a protected place” (Schulz, 1984, p. 22). In this view, place is related to modern identity formation, stimulating ontological security. Local surroundings and places can become links between children’s harmonious cultural formation and SD. The importance of taking the local as point of departure in strategies for SD is embedded in the concept from its first official documents and definitions. Ideas of local action and global impacts are bearing principles in the UN global action plan “Agenda 21” (United Nations Committee on Education and Development [UNCED], 1992). The local place, or the bioregion, can stimulate attention and identification with the web of life at all levels (O’Sullivan, 1999). Samuelsson (2011) makes clear how the understandings children have of sustainability at a young age are interconnected with their immediate contexts. The children interviewed about the state of the world in Australia, thus related it to bush fires and koala bears.

The importance of place in the existential way is where fundamental insights can be added from deep ecology. The ontological theory of Arne Naess and the basis for deep ecology is based on the holist idea that “everything is connected to everything” (Naess, 1999, p. 15), in opposition to the atomistic picture permeating the modern mechanistic world view. The insight that human beings cannot separate their selves from the greater whole of the world is not to be understood as neither relative nor subjective, but rather as a way of theorising the intrinsic relationality of all things (Diehm, 2006). One could here object that deep ecology is explicitly non-anthropocentric and thus seemingly not compatible with pedagogy, which unalterably has human beings as end. This is also at the root of the barriers for obtaining the goals that SD promise, all the while anthropocentrism is interwoven with the very term. As McShane (2007) writes, anthropocentrism is the view that the non-human world has value only because, and, insofar as, it serves human interests. Although it may well appear that deep ecology ‘wipes away’ the self and dismisses it as relations, Naess is on the contrary well sensitive to the cultural and biological distinctiveness of human beings in more than anything our ability of self-consciousness. This also gives us a special responsibility towards other living beings that lack this capacity (Naess, 1999). Moreover, self-realisation is constantly the ultimate goal for Naess, not as maximisation of one’s narrowly construed interests or with ‘colossal ego-trips’, but in the deep recognition of the true depth of the connection with nature (Diehm, 2006). The core of deep ecology is not a dogmatic programme, but a committed attitude (Naess, 1999). A motivational structure in this sense seems logically imperative. Educational practice must dare to acknowledge its moral aspects, the inherent value rationality where certain modes of action are assigned inherent value.
Towards a concept of ecological habitus

If stopping at individual identity formation, there is little room for the talk of social change which ESD brings with it. This is also true when considering the link between individual development and societal aspects inherent in cultural formation. How may then the ontological insights gained from the gestalt thinking of deep ecology be integrated with a theory of practical action that also can bear meaning for pedagogies? Although vastly criticised and accused for being a sort of theoretical *deus ex machina* (Lizardo, 2004), Pierre Bourdieu’s concept of *habitus* have a lot to offer in this regard. The notion of autopoeisis makes it logically impossible to form children in instrumental ways; because we cannot predict the outcome of the self-creating processes of each individual. The modern mechanistic paradigm is here not just ‘untrue’ in the Naessian logic, it has also been argued to alienate and estrange human beings from their true nature. The instrumental and individualist logic eradicates authenticity and pulls human beings away from their true selves. This can thus be seen in connection with children’s possible inharmonious self-development (Nyeng, 2000).

Bourdieu illustrates the social aspects of relationality. With him, the body is situated in social fields, and individual acts of perception (*noesis*) are made against a background of existing categories of thought (*noemata*) incorporated in the body. The body is in the world but, importantly, the social world is also in the body (Bourdieu, 1984). Habitus is commonly misunderstood to represent an objective, reductionist element, leading Bourdieu into the trap of structuralism and determinism that he so explicitly sought to avoid. However, this is to disregard the way the concept allows for going beyond a phenomenological focus of the lived experience of the social world and point to the correspondence between objective and internalised structures (Bourdieu, 1990). One might actually describe this approach as a ‘cognitive sociology’ (Lizardo, 2004), as there is an association between social structures and mental structures. Such a cognitive sociology hence pays attention to the historical development of schemata of perception. Here children’s individual development and the movement of society at large towards SD can meet. Cognitive and social structural developments are dialectic and continuously ongoing processes, where the objective social structures are translated through individual processes of self-development. The basic idea is that when SD becomes integral in the cultural formation of children, it will eventually influence the structures of our society through their choices of better practices, and the structures will again foster sustainable practices and so forth. It will eventually become a ‘good circle’.

Habitus is made up by *capital*, and Bourdieu emphasises how capital is related to the potential in having a lasting network and relations marked by mutual recognition (1986). This can be related to human interaction with nature, which seems to be morally guided by exactly a sense of reciprocity and duration (Chawla, 1988). By suggesting the idea of *ecological habitus* and *ecological capital*, we allow for theorising this further. Capital is internalised in the semi-reflexive habitus as generative structure or dispositions for practical action (Bourdieu, 1990). Understood this way, habitus comprises both restrictions to and ability for practical agency. This sheds light to the idea that children who interact with nature from an early age, are more prone to develop positive environmental attitudes as adults (Broch, 2004). The dispositions of habitus are persistent, but not absolute, and the main formative period is early childhood. Moreover, they are bodily embedded. This is why it is fundamental to integrate SD into children’s develop-
ment of ecological habitus already in the earliest years. Moreover, the concept transcends a focus on accumulation of abstract knowledge, as it emphasises practical action and competencies and possibilities for action. Hence there is a focus on mastery and the possibilities which include social relations as well as the physical environment. An appropriate allegory here is the common idea in social anthropology of coping and the human bricoleur, who lives in accord with and simultaneously manages to advantage from her environment (Croll & Parkin, 1992). This is an argument for making the complex issues of SD core in ECE, to foster the creativity and interest of young children and stimulate their cultural formation. As some may argue that we make children scared or feel guilty about the ecological crisis and global injustice, the exact opposite is actually done when they are given the understanding and experience that they can influence and think about new ways themselves (Samuelsson, 2011).

Although at some points operating in different scientific realms, both Bourdieu (1990) and Naess (1999) can be seen to have in common an opposition to views that distinguish between reality as experienced and reality independent of our existence. This might be the most important theoretical premise and insight for obtaining pedagogies adequate for implementing ESD in ECE. The modern mechanistic paradigm is based on the Galilean divide between the primary and secondary qualities of things and nature, where nature is allowed to be, firstly, something in itself and apart from us and, secondly, something human beings experience as subjects towards objects (Diehm, 2006). Here lies much of the root of the logic which invariably lets us see the value of nature as instrumental and thus can leave ESD with the mere ‘protection of nature’ logic. Outdoor kindergartens can serve as examples on how good efforts are stuck in a romantic view of nature as something out there, wild nature as a radically different context from the ordinary everyday life. The idea is that being outside is ‘good for children’. This is an example of environmental education as education in the environment, again leaving out education for. This notion of nature as ‘the thing in itself’ is in both the Naessian and the Bourdieuvian logic an abstraction. While deep ecology serves important ontological premises for ESD, establishing the idea of ecological habitus can serve as a move towards more practical, pedagogic tools. It constitutes the difference between education aiming at behaviour modification and education aiming at action competence and, in the societal sense, a shift of focus from human beings as consumers of goods and information to active and capable citizens. The ideology of making resource use serve the quality of life rather than the economic standard of living as generally promoted by consumerism has its clear parallel in the case of children. We must make pedagogy serve the quality of life of children and not only be steered by market mechanisms of the modern, economist logic.

Concluding reflections

Through this article, a legitimatising basis for why ESD should not overlook ECE has been outlined in the context of Norway. It has become clear that there are moral imperatives for including the youngest children in the work towards SD, and pedagogical implications for how the process of cultural learning can gain from perspectives of sustainability have been pointed out. A social learning perspective is suggested integrated through applying the concept of ecological habitus. However, the theoretical construction must be further investigated with insights from further empirical enquiry.
Further responses to the challenges of implementing ESD into ECE should include research capacity building, in order to improve capacity on the subject, creating international networks and stimulating and initiating further initiatives and funding (Davis, 2009). Moreover, a particularly important aspect is to take research into professional learning and hence look further into the conditions of ESD in teacher education related to ECE. This is quite interesting in the context of Norway, as a new framework plan for kindergarten teacher education is currently being implemented. The major novelty of the plan is a reorganisation of traditional scientific disciplines into practically oriented, interdisciplinary fields of knowledge. This corresponds well with core ideas of ESD, at least theoretically, and might represent a fruitful context for developing a better understanding of what ESD can represent for ECE.

Nevertheless, there seems to be a common ground fusing the emerging new understanding of children as democratic citizens and agents and the urgent need for taking SD into practice. The challenge is to gain recognition for ECE as an imperative starting point.

References:


Why education for sustainable development needs early childhood education.


Tonsberg, Norway: Vestfold University College.


Correspondence:

Kristin Gregers Eriksen, Assistant Professor in Social Sciences, Telemark University College, Faculty of Art, Folk Culture and Teacher Education, Postboks 842, 3007 Drammen, Norway. Email: Kristin.g.eriksen@hit.no