



Creating a guidebook for developing sustainable food habits at daycare

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daycare**

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The purpose of this thesis was to introduce food sustainability to children and encourage them to make responsible choices when it comes to food in a kindergarten. The hope was that by educating children about food, food systems, food waste, and the food cycle, it would help them grow a sense of responsibility by choosing a sustainable way of consumption as a starting point for future conscientious consumers. Another goal of this thesis was to develop a guidebook to give teachers at the daycare a simple tool to use in preparing food sustainability lessons for children.

The theoretical framework includes an explanation of the relationship between the environment, sustainability, and food, as well as food waste and sustainable food consumption. The Theory of Planned Behaviour (TPB) was used to explain how habits can be changed toward a more sustainable way of life.

The implementation of this functional thesis comprised of activities based on 3 main topics: Introduction to the theme of Sustainability; a food journey; and food waste and ways to re-use it. In addition, a guidebook was created. The methods used to explain and reinforce sustainable food habits in children included participation, reading and play.

The overall feedback on the implementation of the activities were based on verbal input from children and teachers at the daycare. Overall, they were mostly constructive and supportive, reflecting the gains and values of applying activities on food sustainability in a daycare.

Keywords: Food Sustainability, Early Childhood Education, Food waste, Sustainable food consumption

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1 Introduction

The world that we inhabit is plagued with many problems, most of them are manmade. One of the problems is the climate change and its effects on the humankind as well as the animals and plants. Presently we are facing a crisis of water and food shortages in many parts of the world. Food is life. The global food system is very complex and is controlled by environmental, cultural, social, and economic factors. The interaction between these factors is necessary to improve global food sustainability. Although policies at the national and international level are required for a sustainable food consumption program, a commitment from individuals is also needed to overcome the challenge, so that our present and future generations can live a quality life.

Children are our future, and we need to leave a sustainable planet for them to inhabit. Children are like sponges, constantly keen to soak up information about the world around them. If they understand more about their food and where it comes from, they may be less likely to waste it and they will develop good food habits. What we choose to eat depends on what is accessible to us. Food choices depend on personal preferences and cultural identities, convenience, and a sense of responsibility. Deciding what to eat is a complex blend of these considerations (Gelande et al 2019). Therefore, helping children to develop a sense of responsibility when choosing a sustainable way of consumption by educating them about food, food systems, food waste and food cycle can be a starting point to build future responsible consumers.

The Sustainable Development Goals (SDGs) were agreed in 2015 by 195 nations to protect the planet and to improve the lives of everyone. They have committed and agreed with 17 sustainable goals to address the climate emergency and tackle growing poverty and empower women and girls (United Nations, n.d.). We carry an enormous responsibility in our hands to pass on to our children the necessary knowledge, skills, and consciousness to guarantee that they are both capable and competent to live their lives on the planet in a prudent and thoughtful way. (Clarke, 2012)

Food and sustainability are very much linked, and I cannot think on a better way to address such important subjects into early childhood education settings. It all starts from a young age, what do children listen, see, and are thought in their daily life at their homes, at their daycares and schools. Introducing this matter to children of young age is the first small step to help them internalize and take it as natural as possible.

2 Background of the thesis

2.1 Aims and objectives

The goal of my thesis is to make a guidebook introducing food sustainability to the children and encourage them to make responsible choices. The nature of the food industry and the health of our planet are also affected by our food choices. Helping children care about and value food helps to sow the seeds of sustainability, which they will then use to work on behalf of the world while making food decisions (Sally 2012). Learning about food sustainability is an ongoing process. Children might forget things if they are not practiced regularly. Hence it is imperative that activities related to sustainable food habits are included in the regular curriculum. Values and beliefs that we gain in childhood play an important factor when making choices in life. Good habits influence our behaviour. Sustainable food habits can also change behavior relating to food, its use and wastage. This was the main motivation behind choosing this subject. The activities of the guidebook will be based on the following objectives:

- Introduce children to the topic of sustainability.
- Teaching the children where food comes from and how it is grown. Farm to table.
- Food waste, its effects and how it can be avoided.
- Bio-waste
- Instill good sustainable food habits.

2.2 Working life partner

The implementation of my thesis was done in Albatross daycare. Albatross is an English daycare and preschool founded by Eija Rolamo in 1998 located in Espoo. It started with 2 units and 7 people employed. First customers were basically only Finnish families until 2005 when Nokia started to bring people all over the world that wanted their children in an English daycare.

Then Albatross started to expand, opening another unit in 2006 and the preschool opened in 2011, having now 6 units in total. Currently, the daycare has about 100 children and 21 employees from 17 different countries.

The method or philosophy of Albatross follows Finnish curriculum and the specialty they have is English language. The Pedagogic Manager acts as a liaison regarding education in Espoo and ensures that Albatross follows the Finnish curriculum and practices. She also supports the teachers in implementing pedagogic activities in the children's groups.

Albatross Preschool has been approved to teach preschool activities by the city of Espoo. The curriculum is checked and approved every year. The new curriculum is devised to consider the children's interests. The teacher's role is to plan and guide the activities through these interests. Children will do various long-term projects, throughout the year. (Albatross daycare, n.d.)

Alberga, is the unit, which is located in Leppävaara, Espoo, and the only pre-school group of Albatross Daycare. This premise is a branch with 22 children and 3 teachers and there also one small group of 5 children of 5 years-old with one teacher. The groups work separated, though they meet at lunch time, outdoor time and sometimes during circle time when there is a birthday of a child or a teacher and they all sing together or in some special weeks, for example the international week where teachers talk about a specific country.

2.3 Functional thesis

A functional activity-based thesis seeks to bring together the theory into practical activities on a professional matter. A functional activity-based thesis is an opportunity for the students at University of Applied Sciences to apply and put in practice the competencies and expertise acquired along the studies. This type of thesis should merge into the documentation and evaluation of the process; and the functional part which is the final product. (Vilkka & Airaksinen 2003).

According to Vilkka and Airaksinen (2003) a functional thesis aims to instruct, organize, or rationalize practical activities in a professional field. The purpose of this functional activity-based thesis is to create a guidebook with planned activities for teachers to carry out in daycare as an easy tool to access and put in practice.

2.4 Collecting feedback

During the process of implementing my activities, I will collect feedback from the teachers at daycare who will accompany me during the activities; also, from the children after each activity and by reflecting on each session by writing notes on my learning diary. According to Timperley (2007) one of the most significant impacts on learning and development is feedback, although it can have a positive or negative impact. Its significance is commonly highlighted when learning and teaching. Therefore, receiving feedback from teachers and children will guide me to the right direction of achieving the goals of the activities.

The learning diary will help me to write down what I have observed during the activities (what went well and not so well) and on what I heard from teachers and children after the sessions. That way there is scope to adjust and improve in the next activities.

Observation is a tool which teachers need to constantly use to assess the children's reactions. For example, not all children verbalize what they think and for that, verbal feedback is difficult to get. I am planning to make a visual chart for the children to give feedback.

Gibbs model is an effective method to help one reflect after the activities. The Reflective Cycle (Figure 1 below) created by Gibbs in 1998 illustrates the different stages of the reflective process.



Figure 1: Gibbs Reflective cycle (Stewart n.d.)

The first step of the cycle is to describe the experience which is a factual account of what happened, followed by exploring feelings or thoughts during the activity. Once feelings are identified one can formulate strategies to overcome those hurdles. The next step is evaluation which offers an opportunity to reflect on what went well and which areas need to be developed. After evaluation we need to analyze the process and make sense of what might have helped or hindered the process. Reference to literature and research helps during this stage to improve future activities. At the conclusion stage one can put all the things together and introspect. Lastly, during the action plan stage, one sums up all previous elements of the cycle and create a step-by-step plan to create a new learning experience. (Cambridge community, n.d.).

Finally, feedback will be collected from the teachers as they have considerable experience with the children and their observations as a third person will give me a different perspective. Feedback from the children would be collected in feedback forms and their verbal responses after each activity.

3 Theoretical Framework

In this section there will be discourse about the relationship between environment, sustainability and food, food waste and environment food consumption. Good habits and behaviours relating to sustainable food consumption which include reducing food waste can be introduced in early childhood to make active and responsible citizens of the future. The Theory of Planned behaviour (TPB) is used to understand how behaviours can be altered for a sustainable way of living.

3.1 Relation between environment, sustainability and food

Sustainability is a broad term. The U.N. Brundtland Commission 1987 described it as development that meets the needs of the present without compromising the ability of the future generations to meet their own needs. We are all aware of the climate change effects. Humanity depends on nature for almost all their needs like food, water, materials for survival and safety from natural calamities and threats, epidemics, and environmental disasters and yet we do so little to protect it. As mentioned, we are dependent on nature for our food resources. Therefore, we should be following a sustainable diet which are healthy as well as have low environmental impact that contribute to food and nutrition for present and future generations. Adopting a sustainable diet will help to protect and respect biodiversity, ecosystems will be culturally acceptable, accessible, and affordable while optimally using natural and human resources. (The nutrition source, 2021).

One of the major causes of global environmental change is agriculture. It has caused deforestation, damage to coastal reefs and marine ecosystem. Food production contributes approximately 30% of global greenhouse gas emissions, and the livestock sector alone represents almost half (14.5%) of these emissions. It occupies around 40% of global land and uses 70% of fresh water. It also is the largest factor threatening species extinction and has led to most of the world fish stocks to be over fished. Such global environmental changes increase the disastrous and irreversible effects on the earth's systems which are responsible for human mortality, morbidity, conflict, and food insecurity. (The Nutrition Source, 2021).

The world population is growing. While some people have abundant food supply some less fortunate ones are starving or do not have access to healthy and nutritious food due to various social, economic, and environmental factors. To achieve a healthy and sustainable food program for all, requires collaboration from governments as well as individuals. We should be aware that our food choices and habits ultimately impact more than just ourselves. What is good for the planet is ultimately good for us too.

3.2 Environmentally sustainable food consumption (ESFC)

According to Vermeir et al (2020), Environmentally sustainable food consumption, ESFC has been described at the Oslo Roundtable on Sustainable Production and Consumption, 1994, as the use of food products that corresponds to our basic needs and provide a better quality of life, while minimizing use of natural resources, harmful materials and emissions of waste and pollutants in the environment, so as not to jeopardize the needs of future generations. In all human cultures, food preferences, choices, and habits, form a central role and it has surpassed its functional role as a means to just survive. Food habits are central to people's lifestyles and are hard to change. Nowadays food choices are also subject to marketing strategies of food companies that have transformed the dietary standards changing food and beverage preferences of individuals in society. In this manner, Vermeir et al 2020 refers to Bublitz et al 2020 to conclude that now food related decisions are dependent on social, cognitive, affective, and environmental influences. They further state that we as consumers need to value the environment in a positive way, become aware of the gap between the desired versus the actual state of the environment and choose for action to reduce the evident discrepancy. For this it is necessary to engage in behaviour that is expected to bridge the gap between the desired end state and act in accordance with that intention.

Children are the present and future inhabitants and drivers of this planet. If they are taught and informed about environmentally sustainable food consumption, it will be easier for them to act as responsible and active citizens who care and nurture the environment. They should also be aware that we only have one planet and living sustainably is the only way to lead a quality life in the future.

3.3 Food waste

It is an ironical situation where world hunger is on the rise and yet there are millions of obese people in the world. One third of the total food produced in the world is lost or wasted. With this massive production it is not just our natural resources including land, energy, and water, being wasted, but it is also playing a huge part on the total man-made greenhouse gas (GHG) emissions. (Wrap, 2021). Tackling food waste can help to address food insecurity and mitigate climate change. The Global Report on food crises (2021), indicates that 155 million people experienced acute food insecurity. According to the Food and Agriculture Organization of the United Nations (FAO, 2021) there is more than enough food produced in the world to feed everyone, but still 820 million of people go to bed hungry. We cannot achieve a sustainable food system without addressing the challenge of food loss and waste.

The UN Sustainable Development Goals has goal no.12 related to responsible consumption and production. Over the last century economic and social progress has been accompanied by degradation of the environment leading to endangering the systems on which our future and

survival is dependent. There is a need to reverse the current trends and shift to a more sustainable consumption and production model. Therefore, sustainable consumption and production is about doing more with less. It deals with disengaging economic growth from environmental degradation, increasing resource effectiveness and promoting sustainable lifestyles. It can further contribute considerably to reducing poverty and transformation towards low carbon and green economies. Reducing food waste and loss can add to environmental sustainability by contributing to lower production costs and increase efficiency of food systems. Every year we lose about 13.8% after harvesting, during transport, storage and processing which amounts to 400 billion dollars. (United Nations, n.d.).

Food waste has been recognized as one of the largest contributors to global warming and climate change. A considerable number of resources are used for growing, processing, and transporting food. Ultimately food wastage is wastage of resources too. Food loss is defined as food that is removed from the supply chain during early stages. Food waste on the other hand refers to food, which is removed from the supply chain during distribution, in shops, restaurants and in households. Some food waste is unavoidable, or it is inedible due to it becoming stale or perishing due to heat, etc. Some of this food waste is naturally and anaerobically decomposed to make biogas, composted, or used for animal food, some of it still reaches the landfills where it is burned to give rise to harmful gases. Therefore, minimizing global food waste can be recognized as one of the most potent ways to fight climate change. (Stop food waste, 2021)

3.4 Reducing food waste in ECEC

Pramling et al 2017 state that children need opportunities to make meaning of their own experiences, because that is considered true learning. When children can construct their own meaning instead of just reiterating what adults have told them, knowledge becomes incorporated with their emotions and, due to that children own that knowledge. Educating the future generation is not just about listening to the children but there is also a need for skillful educators who are able to direct children's attention in a play-based environment towards sustainability issues. These perspectives that children gain through play and activity-based learning methods will further engage the children as agents of sustainability. (Samuelson and Park 2017).

According to Närvänen et al, (2020) food waste is mostly the outcome of people's behaviour and attitudes. Why do people waste food? Encouraging people to reduce their food waste levels is challenging and requires a thorough understanding of the behavioural drivers and obstacles to change. Though all of us know that food waste is wasting money as well, a lot of us do waste food. Food is wasted because we have purchased more than we need, or we lack

the capacity to store it. We know that changing behaviours cannot be done overnight. It takes time for us to practice good habits. (Närvänen et al, 2020)

Thus, if a behaviour to stop food wastage is taught to children from young age, they may practice the good habits of reducing food wastage in future or influence consumption behaviour at homes. Behaviours can be changed or developed by informing the children about good and bad aspects of food wastage.

3.5 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) hypothesizes that attitudes are determined by the respondent's behavioural beliefs that the adoption of the behaviour is associated with advantages and disadvantages and the value that the respondent gives to these expected outcomes. It has been applied to studies of the relations among beliefs, attitudes, behavioural intentions, and behaviours in various fields such as healthcare, sport management and sustainability. The theory can be summarized below in the figure 3.

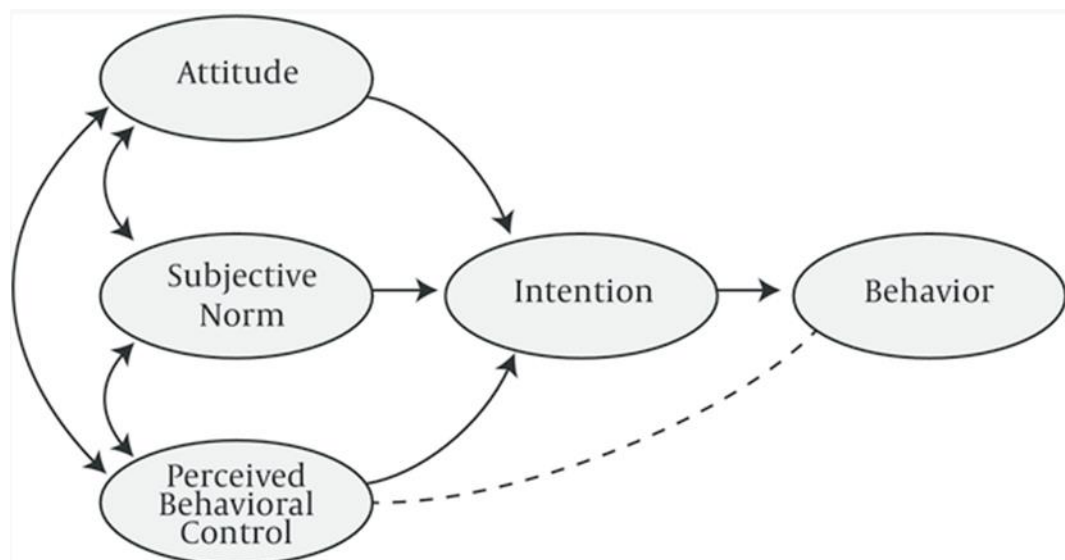


Figure 2: Theory of planned behaviour (Soorgi et al 2015)

All human beings are curious in nature and always look for a reason behind what others do or do not do. Children are also very curious to know why things are done in certain ways. But not all people are the same nor do all react in the same way to a given stimulus. Behavioural intention is shaped by three elements: individual attitudes; prevailing norms which include beliefs and motivation to do something; as well as perceived behavioural control. Theory of

planned behaviour is mainly concerned with the behavioural outcome of the concerned individual and the recognition and evaluation of specific behavioural consequences. It is therefore necessary that the individual understands the outcome of the behaviour only if he/she knows that it is linked with it. According to TBP people who see a strong link between their behaviours and potential outcomes will show stronger pro-environmental attitudes than those who do not. (Luenendonk, 2019)

According to Bauer et al (2018), to maintain our current standards of living for the present and future generations, it is vital that our actions stay within the regenerative capacities of the earth. They further state that our behaviour opposes the concept of sustainability as our demands from the earth exceed its regenerative capacity. Children are a part of consumer society. It is essential to try to help them understand and take responsibility for their consumption behaviour. They can also help influence their guardians' consumption choices. There is a need to equip young learners with conditions to become sustainable food consumers and the concept of education for sustainable development can play an important role.

Bauer et al. 2018 refer to Bandura who explains that acquiring and maintaining new behaviour patterns is not just based on intuition but also on cognitive processes. The intention to act is an important factor in acquiring reasoned behaviour. Behavioural intention implies how hard a person is willing to try and change behaviour. Behavioural intention does not necessarily lead to performance of that behaviour. However, in education for sustainable development the goal is not just to promote behavioural change but also to make competent and informed decisions. (Bauer et al, 2018).

Values are considered an important part of Education for Sustainable Development and are a part of social decision-making process. A person uses his values and beliefs to evaluate the outcomes of his/her behaviour. For example, an adult may become a role model due to his behaviour as that behaviour is compatible with the values that one has. If one's values refer to saving the environment, then sustainable behaviour of others is appreciated and imbibed to make a change and be true to his values. (Bauer et al, 2018).

According to Bauer et al. (2018) there is a need to recognize that a strong link exists between behaviour and their potential long-term outcomes. Knowledge forms an important factor while promoting behavioural change when dealing with sustainability. Unless a child is told about the consequences of his actions that are not immediately visible, he/she will not know the impact of their actions. By providing knowledge and information a child is well informed and warned about the consequences of good or bad actions. They can make better choices. For example, a child may understand that food waste thrown in garbage can end up in landfills where it is burnt and give rise to harmful gases. Therefore, he/she may either put

the food in bio-waste or finish the food or take small portions. In the daycare, the teacher's duty is to include the knowledge component to help children understand and estimate the consequences of their choices and behaviour in relation to food and environment. The principles of this theory will help to instill good habits and help develop good food habits that reinforce sustainability.

4 Early Childhood Education and Care (ECEC)

The early years are the most crucial time in a child's life as it is the period where children learn faster than at any other time in life. Children are growing, learning, and developing and everything what they experience physical, emotional, social, and mental shapes their brain and will be the foundation for their future life. The child's physical, emotional, and social development are all essential to their wellbeing, especially during the first five years of his/her life and therefore, it is important that the child is provided that care in a nurturing place, for example in a daycare. It is important to provide the children responsive environments that allow the children to play and learn how to interact with others. (Irwin et al. 2007)

4.1 Early Childhood Education and Care in Finland

The aim of the early childhood education is to provide support to both physical and mental growth of the children as well as the educational perspective of it. All the children in Finland have a subjective right to daycare that lasts all the way up to mandatory preschool which starts at the age of six. The options for the daycare models are private daycare or municipal daycare, depending on the guardians needs and what the city or municipality has to offer. The early childhood education law is from 1973 and since 1996 the parents have been granted the right to have their children put in a daycare that is being provided by their local authority. (Early childhood education and care policy in Finland 2000)

The objective of the basic education is also to provide the child with a sense of the ethical aspect of functioning and being a valuable member of the society and guide the child into the direction that will allow him/her to make ethical and sustainable choices later in his/her life. The basic education must also be equal towards all the children and make sure that all the children can participate and feel that they all have equal opportunities to life. (Early childhood education and care policy in Finland 2000)

Equality and sustainability in ECEC

Equal opportunities also mean the chance and the responsibility to improve and increase the prospects of those children that come from more humble beginnings and/or disadvantaged

families. The quality is seen through different factors: factors in the infrastructure i.e., the physical, human, and material resources. Whilst emphasis of the quality of the early childhood education is being based mostly on the infrastructure of the daycare system, another aspect is the presence and the interaction with the peers. (Schleicher 2019, OCED)

Sustainability has its place in ECEC, and underlying values are supported too. Children are given the opportunity to observe and explore the nature; learn about its plants and animals, practicing new ways to act conscientiously by reducing the quantity of waste, repairing and reusing things. Meantime, children are conducted to reflect on the impact of their actions. One of the goals of ECEC is to help children learn social skills and artistic thinking in order to help them live healthier and happier lives. Taking into account the social, spiritual, and ecological facets encourage a sustainable way of life. Its aim is to comprehend ecological sustainability as a precondition for social sustainability and human rights realization. Environmental education's position in ECEC is to improve children's relationships with nature, to teach them how to behave safely in nature, and to guide them toward a more sustainable lifestyle. Learning in the environment, learning about the environment, and acting about the environment are the three pillars of environmental education, which ensures that the local natural and constructed environments are both learning materials and learning environments. Children's relationships with nature are strengthened as a result of their interactions with their environments. The natural phenomenon is detected, debated, and investigated. It is a realistic way for students to learn about natural principles by using all of their senses. Environmental education encourages the creation of skills that will allow people to live in a more sustainable manner. Recycling, minimizing and replacing products, conserving resources and water, not wasting food, and not littering in the environment are examples of practical skills. (Finnish National Agency for Education 2019.)

4.2 Guidelines for quality education in Finland

The main goals of the ECEC Act

The definition of EduCare can be used to explain Finland's early childhood education and care (ECEC) policy. It meets both the educational and instructional needs of small children as well as their daycare needs. EduCare is a term that has been used internationally to describe the ECEC model of a Nordic welfare state, which combines treatment, education, and instruction. (Early childhood education and care policy in Finland 2000)

The main principles and goals of early childhood education and care are put in the ECEC Act. Early childhood education and care (ECEC) in Finland is guided by a national core curriculum which guide the development of ECEC content in greater detail and a more goal-oriented manner than before. The foundation for the curriculum is overseen by the Act on Early Childhood Education and Care (540/2018) and is regulated by the Finnish National Agency for

Education. One of its objectives is to promote children's holistic growth, development, and learning. (Finnish national Agency for Education 2019)

The Early Childhood Education Law

The Early Childhood Education Law (Act on Early Childhood Education and Care [540/2018]) states ten objectives, that are to guarantee the good quality of the care that they provide. Those are: taking the child's age in mind, promoting the complete wellbeing, growth, and development of each child; implementing educational equality and supporting the preconditions of lifelong learning, ensuring positive learning experiences, carrying out various pedagogical activities via play, movement and arts and introducing cultural heritage aspects, safeguarding healthy and safe environment that is also developing and learning-promoting, ensuring child-friendly approach and a as long-lasting interaction possible between the children and the early childhood caregiver, providing all children (from whichever cultural, linguistic, religious or ideological background) with equal opportunities and understanding and appreciating the cultural, etc.) heritage of each individual, whilst promoting gender equality, identifying and providing the individual support that is age appropriate for every child in need of it in multidisciplinary co-operation when necessary, evolving the child's interactional and co-operational skills and promoting activities in peer group, also leading a way to a ethically and sustainably enduring activities keeping in mind the respect towards others and being a member of the society, guaranteeing that every child has the right and opportunity to be involved and heard in matters that concern him/her, and working together with parents and/or other guardians in the child's benefit to ensure wellbeing and all-around balanced development and working in co-operation to support the parents' or other guardians' educational responsibilities (Finland 2018).

The National and local curriculum

The National core curriculum is a norm, which is then developed further to meet the needs of local specific and unit specific curricula plans, as well as individual plans for each child. This is a legally binding document that is both for public and private ECED providers. A binding National Core Curriculum for Early Childhood Education and Care (2018) and a reformed Act on Early Childhood Education and Care (540/2018) guide the implementation of ECEC content in detail and with a more goal-oriented approach than before. Local governments and other service providers must develop local curricula based on the national core curriculum. (Eurydice Finland 2020)

When coming from the general curriculum to the level of making a personal study plan for each child, the process of making the ECEC plan consists of many stages. The process is conducted in co-operation from the side of the early childhood education with the child's parents and/or other guardians. It is extremely important that the views from both parties'

observations and concerns are considered when conducting the plan. The special education teacher from the ECEC is also available in the process if needed. The child him/herself must be also heard when preparing the plan according to the abilities of his/her age. (Finnish national Agency for Education 2019)

4.3 The pedagogical goals and documentation of ECEC in Finland

The pedagogical goals and framework

The goals in the child's individual ECEC plan must have a pedagogical bases and when assessing the child's individual plan, its focus is placed on how the pedagogical part is embedded in the activities arranged for him/her. The plan must be revised at least once a year. Pedagogy refers to systematic and goal orientated activities that come from multidisciplinary knowledge from educational sciences and early childhood education. That knowledge is then put to action by the professionals of the early childhood education. With that, the emphasis on the pedagogical side requires that of pedagogical expertise as well as expertise in the personnel for adequate implementation. (Finnish national Agency for Education 2019)

The framework for the pedagogical activities is presented further below (Figure 2). Those activities are a wholesome approach that are meant to promote the child's learning and wellbeing and reinforce their capacities in the pedagogical framework. The pedagogical aspect of the activities that are carried out in shared activities between the child and the personnel is emphasized throughout. The pedagogical framework is conducted around the learning and wellbeing of the child, with guidelines and information about the child's interests and needs and different learning areas that interact with transversal competences of the individual. (Finnish national Agency for Education 2019)

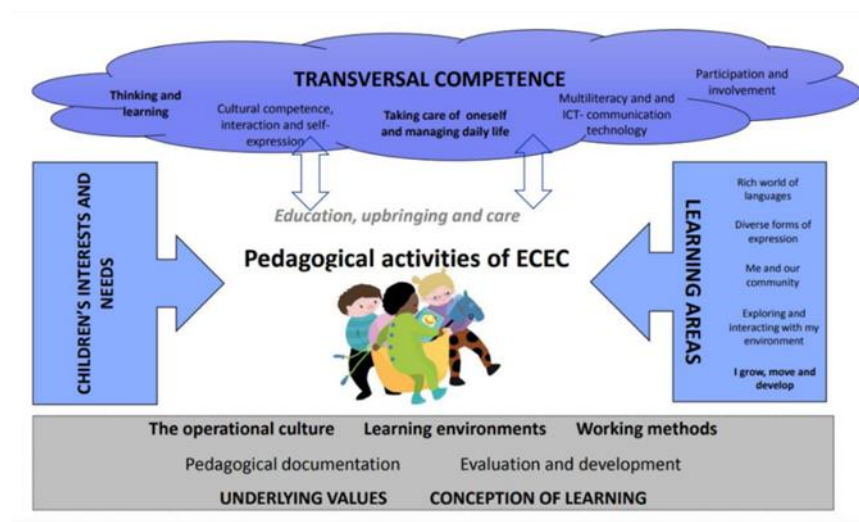


Figure 3: The framework of pedagogical activity in Early Childhood Education and Care. (Finnish National Agency for Education).

Transversal competences within the pedagogical framework

The transversal competences within the framework for pedagogical activity, as stated in the figure above (Figure 2) are: thinking and learning; cultural competence interaction, and self-expression; taking care of oneself and managing daily life; multiliteracy and competence in information and communication technology; and participation and involvement. Transversal competences are a combination of knowledge, skills, values, attitudes and will (Helsinki's curriculum for early childhood education and care 2019). The most relevant areas that will be discussed in this thesis are thinking and learning; taking care of oneself and managing daily life; and participation and involvement. These aspects are very important and give some of the basis to the importance of the activities that I have planned in my guidebook. To better understand the underlined ideas in my guidebook and how and why it is built, it is important to open and discuss these specific areas a little bit further.

Thinking and learning

The purpose of ECEC is to support the children's abilities that are developed in different environments whilst interacting with others. The idea in the lifelong learning process is that the brain continues to develop through various meaningful experiences throughout one's entire life. There must be room and the time to wonderment, discoveries, embracing the joy of learning, trying out new ideas together and exploring the world. The way for children to learn, to analyze, name and describe the things that they see and observe is best done by play. This type of learning via playing is made in an age-appropriate level where the

conducting professionals rejoice, guide, and encourage the children to learn and ask questions within their age groups. The conducting adult's role is very important in helping the child overcome failures as well as helping them find the solutions to the problems in hand. The right amount of daily physical activities supports the children's thinking and learning (Helsinki's curriculum for early childhood education and care 2019). As it is very important that the children learn through playing and get those positive and challenging experiences in a safe and encouraging environment, one of my aims was to design activities where children can safely discover things about sustainability and more specifically about food sustainability and through those activities make them question the ways we are treating our planet and the ways we can better protect it.

Taking care of oneself and managing daily life

It is important to teach the children about how to take care of oneself, their health and safety. Children are guided towards a responsible way of living - whether comes to nature and environment or their personal well-being (Finnish national Agency for Education 2019). The purpose of ECEC is also to help the children in making choices that embrace the sustainable lifestyle. This includes a broad selection of different types of activities placed inside, outside or in the nature (Helsinki's curriculum for early childhood education and care 2019).

I chose to put in my guidebook those activities that take place indoors and outdoors and therefore offer the children hands on activities in the environment most suitable for these types of tasks - the surrounding nature.

Pedagogical documentation and implementation

Pedagogical documentation generates tangible and flexible information about children's lives, growth, interests, thinking, learning, and needs, as well as group activities. Individual documents, such as photos, drawings, or staff observations, allow for a joint evaluation of the children's development and learning. Through pedagogical documentation, the children's prior experience and abilities, as well as their interests and needs, are made visible and used as a basis for planning the activities (Finnish national Agency for Education 2019).

The high-quality pedagogical implementation and activities require an always on-going cycle of evaluation and development to maintain its' function. Equally as important is a systematic documentation that help guide and specify the pedagogical needs. Pedagogical documentation is a vital tool that allows both the parents/guardians and children as well as the early childhood professionals to participate in the whole process of planning, evaluating, and developing the activities intended. The goal of the documentation process is important in ensuring that the personnel working with each child and family get to know and understand the individual needs of each one of them. Its' aim is also to enhance the co-operation and

understanding between the professionals and the families as well as to better understand the relationships and interactions between the children in the group (Finnish national Agency for Education 2019).

The goals defined in the Early childhood Education Act as well as the responsibility to consider the child's best interests when planning and implementing are the foundation of all activities. Early childhood education is a combination of education, teaching, and caring with a pedagogical emphasis. It is more than just day care; it is a goal-oriented and planned activities that encourages children's growth and learning and is evaluated and developed on a daily basis (Opetushallitus 2021).

4.4 The role of Early childhood Education in food sustainability

According to Sandell et al (2016), food is an important part of the daily life and wellbeing of children. The food experiences gained during childhood can be important guides to the eating behaviour in adulthood. Food is an easy way of developing our social and communicational skills in family, society, community and in early childhood education centers. It provides a way to learn about different cultures and acquaint us to people of different backgrounds. When eating or cooking, children perceive and actively investigate food, through the five senses. Therefore, by encouraging them to take a trip into the world of food we can support them to expand and explore their food preferences.

Furthermore, the future of food education is sustainability and eco-friendly food choices. Parents and adults can be role models in showing the way to develop good and sustainable food habits and choices. Food habits that are acquired in childhood may contribute to sustainable food habits in the long run, for example, in guiding children to reduce food waste and encouraging consumption of vegetables and fruits. It can also be termed as consumer education and practical skills for the future, after all children are our future consumers. Therefore, kindergartens are a good place to start teaching and promoting sustainable food cultures. (Sandell et al., 2016)

5 Activities/methods reinforcing sustainable food habits

In this part I will explain the different methods used to explain and reinforce sustainable food habits in children. These include participation, reading and play. While working at the daycare I observed the various methods the teachers were using to implement the activities. These methods are also recommended in the National Core Curriculum. Since the children were familiar with those methods, I decided to use them to design my guidebook. During implementation I also used observation, reflection through a learning diary and the feedback from the teachers to improve my actions. While designing the guidebook, these methods

formed the basis of all the activities. The activities are age appropriate and will help the children to think, introspect and apply what they have learnt in their daily life.

5.1 Participation

“Tell me and I forget.

Teach me and I remember.

Involve me and I learn.” B. Franklin

By including children in activities, there is a better chance that the children absorb and understand what adults are trying to teach them. Although very young children have minds of their own. They have thoughts, opinions and maybe a very different kind of viewpoint than adults or other children. They have immense potential in them. It is for teachers and caregivers to harness that potential, encourage it and tap it, so that the child can become an asset to the society and can contribute positively when he grows up. If the children do and learn through participation, it can greatly affect the quality of their learning process. The teacher has a very important role to play in the child’s development. In Finland, emphasis is on the child’s path of growing and learning. The children’s learning process is diverse and takes place in the form of different methods. The teacher has a responsibility to make sure that all the children benefit equally from these activities. The activity starts with planning, organizing, participation and implementation, which requires that there is input from the children as well. This promotes equality and equity in all activities. An inclusive operational culture promotes participation, equality and equity in the activities carried out. The initiatives, views and opinions of the children, teachers and parents are respected. Through participation, children develop their understanding of the community, rights, responsibility, and consequences of their choices. Participation is strengthened when the children are handled sensitively and when they realize that they are being heard and seen. The participation should be through children’s equity, democratic rights, and sustainable learning. (Finnish National Agency for Education 2018.).

According to Sheridan (2001), Dewey ([1916] 1999) states the importance of education for developing democracy and emphasizing that children can become a part of social development through education. He further stated that a good society can develop through the children’s participation, their experiences and understanding of shared interests. This can be achieved through dialogue, uninterrupted communication and communicating their views on diverse subjects including good and sustainable food habits.

Kangas (2016) states that children’s participation includes giving them opportunities to have an influence on their learning and on the culture of the daycare, for example it can be to

reduce food waste within the daycare. The goal is to become respected and listened to by the teachers and having the chance to practice responsibility and self-regulation. The children are included in discussions about food and its wastage, how does it affect them and the daycare and how it is reduced. Their observations and unanimous decisions can positively affect the food waste and their ideas about food consumption. Their collective actions can support reducing food waste and cultivating a sustainable food culture in the daycare.

5.2 Reading

In Early Childhood settings, children should be involved in activities which helps them to develop their language and listening skills. Story-reading method ought to be implemented in the daycare and pre-school groups as a routine activity to enhance children's language growth. (Yuniar et al, 2016)

Reading aloud to children is an activity that benefits children to develop new vocabulary, promotes better communication abilities and comprehension when discussing what they listened and visualize on illustrations from the book. (Isbell et al, 2004)

Dickinson et al (2012) states that reading storybooks to children boosts their vocabulary and ability on word learning. With the help of adults to explain them the meaning of the words and having discussions with them for a better understanding by using intonation or gestures to signify the meaning. The illustrations of children's books often incorporate bold colours that draws attention of children therefore having them engaged in asking about the word meanings. The more children are exposed to language more ability they have to interpret new words.

In many early childhood education facilities, reading storybooks is a common practice. Telling children stories about nature and environmental issues will provide them with information or insight into relevant sustainable food consumption issues, as well as help them understand current environmental concerns, their causes, and the strategies required to solve them. Moreover, this type of literature has the potential to address children's emotions and have a constructive effect on their minds, allowing them to gain insight into current environmental problems, as well as the roots of those issues and strategies for coping with them, both personally and collectively. (Gaard 2009)

5.3 Play

Play is an important method through which young children acquire essential knowledge and skills. Everyone knows what play is when they see it. Children from all strata of life and from all places have engaged in some kind of play. However, play is very difficult to define. Researchers agree that an important feature of play is children's agency and control on the

experience, where agency refers to the children's initiative, decision making and own choice in play. Play fulfils the basic human need to express imagination, curiosity, and creativity. These are key resources in an ever-changing world. (Unicef 2018)

Play is an integral part in ECEC, the kindergarten should provide children with opportunities of different play and games. The teacher has the duty to secure preconditions and supervision for play and ensure that each child gets an opportunity to participate according to his or her capabilities and skills. The personnel must observe and document the children's play. The teacher must have the professional competence and gender sensitivity while detecting children's initiatives for play and responding them in an appropriate way. The learning environment must be flexible and should provide for traditional as well as modern play tools such as digital and media devices. (Finnish National Agency for Education 2018.)

Moments during play are helpful to naturally harness characteristics that drive children's learning, being active, trying out new ideas and interacting with others while finding meaning and joy in that experience. Although playful experiences present learning opportunities, they also need high quality interactions with peers and adults for learning to take place. Play offers children a chance to develop skills, to learn, to solve problems and develop healthy relationships. Physical activity during play also brings health benefits. There are various ways to play, where there are separate and distinct roles for children and adults. (Jensen et al. 2019). Guided activities, sensory play, games, and direct interaction are in the scope of this thesis.

According to Jensen et al. 2019, in learning through direct instruction, the facilitator initiates and directs an activity and the child follows. The activity has more structure and less choice for the kids. The teacher forms goals relating to the child's learning needs and interests and has the responsibility to prepare the space, materials, guide, encourage the child to work independently, explain, support their efforts, and observe their involvement and skills. The child benefits are improved academically and gains socio-emotional skills. Such kind of activities are more traditional, but the basic knowledge that children need can only be provided by the teachers.

Jensen et al. 2019, states that in guided play the facilitator initiates and the child directs. The play has a balanced structure, and the teacher sets the goals according to the learning needs and interests of the children. Although the facilitator is present and interacting with the kids, the kids choose and decide what to do and how. This method can be used to gain children's literacy, number skills, social skills, and self-regulation. I also used other types of play such as sensory play and games which are described next.

Sensory Play

In rapidly advancing world a lot of attention is paid to technical things and we forget to use basic factors like our senses. Teachers should understand that simple and basic methods can be more productive when learning about food and sustainability. There is no doubt about the importance of our senses in our development, learning, and awareness of the world around us. Some of us use some of the senses in a more sensitive way than others but we all need them to our existence.

According to Pagliano (2012) the senses are the channel to our brain, meaning that we explore the world through our senses and then senses passes the information to the brain. And without our senses we are deprived of experiencing the world around us.

Sensory play consists in play that involves one or more senses. In Early Childhood setting it is vital to create opportunities for children to enthusiastically use their senses as they explore the world around them. This type of playing can be seen as the hands-on method appeals to children with unique thinking and learning styles. Smell and taste are two of the senses five senses which are connected to each other and to our emotions and memory. The smell and taste of some foods, for example, can bring memories of happy feelings. (Gascoyne 2011)

Games

Game is another way of playing where children can learn a lot. Children love to play various games. Almost all games have rules. According to Sivevska et al (2013) the game is essential part of the development of a preschool child, as it discloses a path which children learn about themselves, about others, and the world that surrounds them. Children need to learn new competences and habits and through games is an excellent way to develop understanding and enhance their experience about the world. Children are eager to play games as their favorite way of playing and it keeps their attention as they are entertained by the games content. (Sivevska et al. 2013) states that in preschool group, games are taken as big part of child's development and with a significant value in children's education. Spontaneous or directed games with pre-designed rules by teachers with an intention to achieve a variety of pedagogical impacts. Teachers should assist children by stimulating them and guide them to find solutions to the game they are playing. Games brings numerous benefits such as enlarge children's imagination, nurture their curiosity, improves their social skills and human relations, etc.

6 Implementation

The idea of creating a guidebook of activities based on sustainable food habits in a daycare, was a process that started when I had a meeting with the working life partner to discuss about my 10-week work placement and about the topic of my thesis which they thought it was interesting. During my 10-week work placement in Alberga unit, I noticed that there was not much work related to food sustainability, recycle or sustainability in general, due to their busy schedule with lessons. Having a ready guidebook gives the teachers the opportunity to save time in planning lessons related to food sustainability, so that more time is spent in activities. The activities are simple, and material is easily available.

Action plan

My experience in Albatross daycare was my very first encounter working in a daycare setting, learning how to plan activities based on the national curriculum and implement my thesis activities. Understanding in reality the meaning of “why”, “what for”, “for whom” and “how” when preparing activities for children, helped me to think on why would be important to create a guidebook, what is the point of creating one, for whom (age-appropriate activities), and how could I respond to the daycare needs.

I have come to know that some units of Albatross do composting with earthworms, following a program from the city of Espoo. Unfortunately, I never had the opportunity to visit the unit due to corona, the manager thought it was not safe. And the time I was in work placement was between January and middle of March, and the weather is cold and not sunny enough to plant outside.

As described earlier, the pre-school has 22 children, and it is a practice of the daycare to divide the children into 3 groups and swap the groups between teachers and different lessons. Each teacher is responsible to different subjects such as: science, drama, music, mathematic, arts & crafts, and English. Monday and Tuesday there is a Pedagogic Manager who is giving Finnish lessons to the non-Finnish speakers and those days the group of 22 children is divided into Finnish speakers and Non-Finnish speakers.

Between the busy and well-organized schedule of the pre-school group, and some other factors which affected the time I could use to implement all the activities, I had to plan the activities in a way that would work for both parts and would not affect teacher’s own curriculum goals and classroom plans.

As seen in the chart (Figure 4) the activities that I implemented in the daycare were divided in 3 main parts: Introduce the theme of Sustainability, Food journey, and Food waste and ways to re-use it. Each part had few activities to develop with the pre-school group.

TOPIC	ACTIVITIES	OBJECTIVES
Introduce the theme of sustainability Session 1	<ul style="list-style-type: none"> ○ Start to show a picture of children cleaning the planet. (dialogue) ○ Story telling “Dear earth” 	<ul style="list-style-type: none"> ○ Finding what are the understandings on the topic of sustainability. ○ How dependent we are on earth for all resources. ○ Importance of preserving the earth.
Food journey Session 2 & 3	<ul style="list-style-type: none"> ○ Where does food come from? Draw where the different vegetables and fruits are grown. ○ Use a picture and a video to show them the process from farm to table. 	<ul style="list-style-type: none"> ○ Understand the amount of time and effort that goes into growing food. ○ Explain the process of food from farm to table.
Food waste and ways to re-use it Session 4 & 5	<ul style="list-style-type: none"> ○ Bio-waste checker at lunch time (weight the waste every lunch) ○ Ugly Food Taste Test: oddly, shaped carrot and “normal” and a ripe banana ○ Make a cake/smoothie with a ripe banana. 	<ul style="list-style-type: none"> ○ Reduce food waste and re-use leftovers. ○ Change perception around ugly looking food. ○ Activate the senses

Figure 4: Chart of my plan for the implementation activities

Session 1: Introduce the theme of sustainability

In this first session I had planned to introduce the theme of sustainability to children, to get to know what they know about the subject and introduce new concepts of sustainability in general. As it is a complex subject, I decided to focus on their interpretations on the topic and for that I opted to use pictures to be easier for them to understand the topic and could tell what they observe in the image and from there having a discussion. The “children around the planet” picture (see figure 5 below), was used to start the discussion. Children were eager to answer what they observed: “they are cleaning”, “there is a factory and smoke sign”, “watering the plants”, “recycling”, “refill the water”. From these answers, we could

have a nice conversation and realizing that we have only one planet earth and maintaining the planet is very important. We should maintain the planet clean, make use of the things as long as possible, avoid buying new things, caring for the planet and each other. These are all good definitions of sustainability.

After the nice discussion, we had a book (see figure 6 below) “Dear Earth” to read and delve into the illustrations. There are some steps that teacher should follow before, during and after the story-reading to children. The book should be age appropriate to the group of children who the story is read to. The space where the group is sitting down should be comfortable and arranged depending on the story activity needs, for example if needed to do some movements. The reading should be appealing to children, by making different voices to the different characters of the story, mimic, gestures, etc. At the end of the story is good to make questions or even to ask them how they think the story ends, just before telling the end. (Yuniar et al 2016)

The story is about a little girl called Tessa which writes a love letter to the Earth. Tessa wants everyone to know how special our planet is. She believes that there is a chance to save the Earth if enough of us share the message. Children listened attentive to the story and were participative whenever I made questions and were excited about the illustrations. They got inspired by Tessa’s story and when I asked them to think with me on some ideas on how we could save our planet they show interest on the request.



Figure 5: Children around the planet

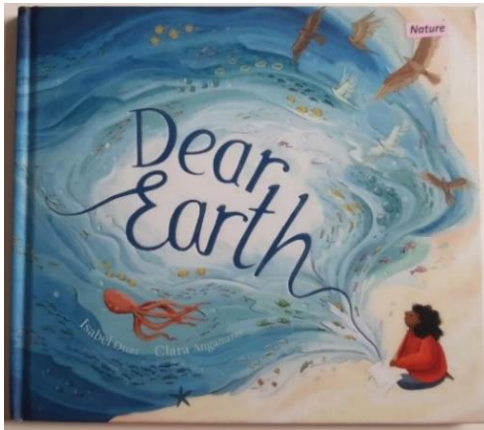


Figure 6: Book “Dear Earth” (2020)

After reading the story and talk about few ideas to save the Earth, I asked children to sit in a square table and altogether had access to a big white paper and started to put their ideas on paper on how we can save our planet. It was not easy for some of them to know what to draw in the paper, but after I asked them some questions like “How can you come to the pre-school besides car so there is no pollution?” and many answered, “By bicycle”, and then they draw few bicycles. A drawing that children did a lot was trees, as their explanation was “so we have clean air”. The result is shown in figure 7 below.



Figure 7: “Save our planet” drawing made by children

Reading is an integral part of the daycare daily activities, I thought it would be a good idea continue to use reading as a method for teaching children about sustainability.

In a morning circle with children, I read a book called “The tale of a toothbrush” (see figure 8 below), which shows children what happens to their plastic toothbrushes after they are thrown away. People use their toothbrush each morning and evening and get new ones every few months. That is billions of toothbrushes! What happens to them all when they are no longer needed? And if toothbrushes take thousands of years to break down, what does that mean for our planet? It is a story to help children explore the impact their choices have on our planet.

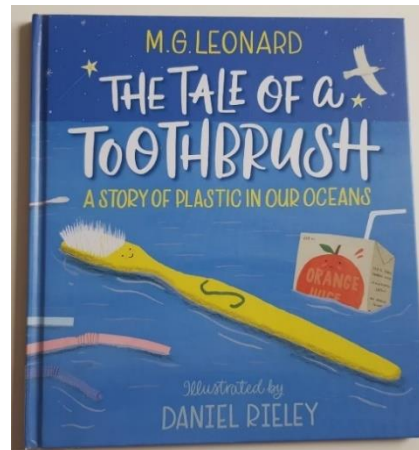


Figure 8: The tale of a Toothbrush (2020)

Session 2: Food journey - Where does the food grow?

This session was followed teachers’ introduction to the theme of “Food”. They had lessons about the 5 groups of food (protein, grains, dairy, fruits, and vegetables), the food pyramid, they also made a salad, etc. It was a good start for children having an idea of what is food, the different types of food and cook something.

Selly (2012) states that it is necessary that children understand the origin of the food they have in their plates, and sadly many do not know and have a misconception of where food originates. It is a disconnection that eventually will affect on their ability to take charge of their own food choices. If children have in their daily lives access to discussions and activities about where the food they eat originates, therefore will prepare them to be Earth-conscious consumers.

I started the activity “Where does fruits/vegetables grow?”, with a set of cards, 45 in total, (see Figure 9 below) with vegetables and fruits, then I put a big white paper on the table and I had some fruits and vegetables for them to hold, observe, touch and smell and that was definitely a good idea. One card was taken, and each child would identify what was the fruit or vegetable and then telling where it grows. After each answer children would draw on the

paper the fruit/vegetable and place where it grows (tree, vines, soil, bushes) as seen in the figure 10 below.



Figure 9: Set of cards of vegetables and fruits



Figure 10: “Where does fruits/vegetables grow” drawing made by children

This activity helped children to comprehend where does food come from. Some of the children did not have any hint where some of the fruits/vegetables grow and it was clearly observed that the ones who knew more about this, were the ones who had some life

experience with a family member on harvesting or planting. The drawing helped children to visualize what we were talking about.

Session 3: Food journey - Food supply chain

I planned to demonstrate and explain the process of food from farm to table so children understand the amount of time and effort that goes into growing food and develop their understandings of how food is grown and produced as reasons not to waste food. The activity comes as complement of the previous activity to enable children to go deeper on the subject and comprehend that there are major environmental impacts in the food processing industry (Selly 2012). As discussed earlier in the Theory of Planned Behaviour (TPB), knowledge and information are important criteria for changing behaviours. By learning about food journey and food supply chain, the children understand the importance of sustainable use of food.

First, they watched in an iPad, a YouTube video “Why not to waste food tutorial for kids”, the video shows the amount of time, land, water, and energy that takes to grow food and to reach to our plates. And if we waste food, all these resources are wasted too, and it harms the environment. The video had a powerful message “food takes long to grow and just a minute to throw”. Children liked very much the video and kept thinking that it is extremely long time to grow rice (6 months) as shown as an example in the video. After the video I showed to children the food supply chain (see figure 11 below), so that they see the long process from farm to table and where the food can go wasted and lost along the process.



Figure 11: Food supply chain

We talked about the steps of the food supply chain. Firstly, I explained that before the food gets into the supermarket shelves, it goes through this huge chain. Every step of the food

supply chain requires human work and resources (land, water, hard work, energy). Even the products such as fruits and vegetables are sorted and packaged to meet the consumers need for acceptable, visually appealing food with a reasonable shelf life. And when food is wasted so are all the resources and hard work. Food waste page from the book “What a waste” was shown to children to corroborate to what was talked. (See figure 12 below)



Figure 12: Food waste. What a waste (2019)

And to put in practice what was told and shown to children, I had prepared a game (see figure 13 below) for them with a set of cards to put in the right order the production of strawberries and the energy used during the process.



Figure 13: Production of strawberries game cards

The game cards set represents the process of producing strawberries with 10 steps being the first step preparing the soil to waste disposal and the last step throwing away the leftovers and packaging. Children were eager to participate in the game and setting the cards in order was exhilarating for them. Then I asked them where they think the energy was used during the 10 steps of the process. One at a time set the energy card under the card of the process that they thought was right. Figure 14 shows children playing the game.



Figure 14: Pictures of children playing the game

The discussion we had after the game started with asking children what we all can do to help reduce energy use. Through the choices we make about food: eating food produced locally to reduce the transport; eating food in season; eating less processed food; growing our own food; using reusable packaging; etc. This activity was crucial, because some of the children did not know where the food was coming or had a wrong notion, as one child said, “food comes from the grocery shop”. And few other children keep wasting food at lunch time. I also showed them an alternative to this long process, grow your own strawberries as shown in figure 15.

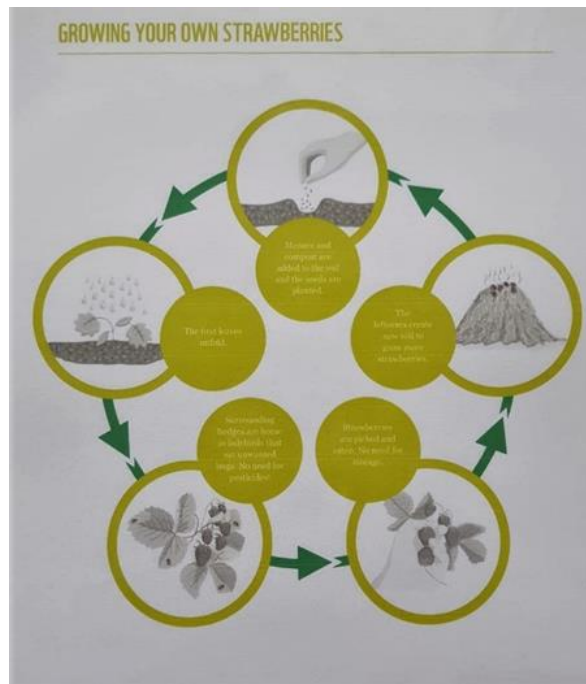


Figure 15: Growing your own strawberries

Session 4: Food waste and ways to re-use it - Bio-waste checker

In this part I planned to change the perception around ugly looking food, activate their senses and reduce food waste.

The bio-waste checker activity can be an all-year activity. Every day at lunch time there will be a bio-waste checker (a different child every time). The bio-waste checker will have his identification card hanging on his/her chest. The job of the bio-waste checker is to weight the amount of food children wasted at the lunch time with a small kitchen scale. The bio bag will be placed inside the box which daycare uses for children put down the lunch waste. In there I put a sign in Finnish of the bio waste (biojäte) so that children can recognize anywhere the symbol and word. After everyone finishes their lunch, the bio-waste checker will weigh the waste and write down in a chart with the help of the teacher. At the end of the week, teacher and children will look at the chart and check if the weight of waste is dropping or not. This activity will help children to remember how important is to not waste food and get motivated by checking on the scale the weight of their lunch waste. Teacher can use this time to remind them that with small changes we can make a positive impact on the planet.



Figure 16: Pictures of Bio-waste checker activity

Session 5: Food waste and ways to re-use it - Ugly Food Taste Test

Providing a variety of engaging, enjoyable food-related activities and experiences sets a good tone for fostering curiosity and interest in different foods and the methods used to produce and prepare them. Food evokes innate excitement and joy in children. Food provides a multisensory feast with its many textures, colours, shapes, and smells, and it offers a lot of opportunities to broaden one's horizons. If we realize it or not, the act of eating keeps us connected to nature on a regular basis. (Selly 2012)

In this activity I had planned to have in a tray some different foods (carrots, onion, garlic, lemon, bananas) to activate their senses and connect them to food. First, I explained them that I set some foods on the tray for them to guess what they were, so I asked them if they wanted to be blindfolded to make the most of the experience and they all agreed. With their eyes blindfolded, children needed to use other senses, like touch and smell to guess what they had in hands. The activity is shown in figure 17 below.



Figure 17: Pictures of children smelling and touching the different foods blindfolded

The lemon was the food that they had more difficulties to guess, even after they smelled it. Next, I presented children with a “normal” looking carrot and one oddly/ugly shape carrot. The child touches and smells both carrots. I asked for the similarities and differences between the oddly shape and the “normal” looking carrot. They said that the shape of the carrots was different, but the smell was the same. Then the same experience with ripe bananas and unripe banana. Their answers were that the ripe banana was a bit softer than the other. The activity can be seen in figure 18 below.



Figure 18: Pictures of children smelling and touching carrots and bananas blindfolded


At the end I peeled the bananas and cut in pieces as seen in figure 19 below, so children taste both bananas and there were some children that immediately pronounce that they preferred the ripe banana as it is sweeter. Some others said that they didn't want to eat the darker part of the ripe banana. They all agreed that both bananas tasted good although they looked different. The outcome is that the appearance of the food does not affect the taste. At the end we used the leftovers for a smoothie.



Figure 19: Ripe banana and unripe banana taste test

Designing the Guidebook

The guidebook that I decided to create is divided into 3 parts: Introduction to sustainability; Food journey; and Food waste and ways to re-use it. All activities are related to food sustainability. The choices I have made for the guidebook are based on Albatross daycare, which is in an urban area and has a small playground and for that, I chose more indoor than outdoor activities so there are no impediments on carry on any of these activities.

I decided to create symbols such as  to make it visually appealing and to be easier to understand and find things. These symbols mean respectively: explanation, activities, videos, tips, indoor activities, and outdoor activities. The activities I implemented in daycare are all in the guidebook, in addition there is cooking with leftovers, composting, re-grow vegetables, more videos, insight on eating local and seasonally and make use of leftovers.

Drafting the guidebook was not an easy process. The final product has been the outcome of extensive research carried out by reading books and going through a lot of web pages and videos. After that relevant information was collected and documented to ease the process of identifying what is needed and what needed to be modified keeping the working life partner in mind. It helped me a lot to get to know the group while I was in my practice placement and the dynamics of the teachers before I created the guidebook. The goal was to continuously take into consideration the user of the guidebook. Do the teachers have time or

motivation to look at the guidebook if I make a running text about food sustainability in their busy schedule? Are the children interested in listening to a lesson with so much talking on such a complex subject? Is it feasible to put too many outdoor activities when the daycare itself has a small playground and usually teachers don't take them to forests on field trips in the nature? The realities of where the activities are implemented were also always in my mind when I thought on the activities for the guidebook.

After the stage of selecting the activities, I thought that would be positive for the user of the guidebook to have different options and not just something that requires some preparation. For example, reading a book (the municipal library is across the street of the daycare) or watch a video is quite simple and easy to do with children anytime of the day without any preparation.

For the staff that doesn't have much knowledge on food sustainability, it is always useful to have in the guidebook, some small information before the activities to keep in track on the theory behind the activity. That way it gives a more complete view of each activity.

7 Feedback and Evaluation

In this section, I will be assessing the activities of the guidebook implemented in the daycare. According to Gibbs (1998), the reflective cycle, is an effective model to help one reflect after the activities, and as I mentioned earlier, I will use this model to evaluate the implementation of my activities which I described in the previous chapter.

In the process of writing my thesis, it was challenging considering that there are not many studies carried out related to food sustainability in Early childhood centers. Finding literature was not easy and it interrupted the flow of my thesis.

The activities I chose to implement were a small parcel of the guidebook. My idea was to give children a small piece of knowledge on what is so pertinent in their future lives. I planned less activities than I would like to. I wish I could have given the opportunity to all of them to participate in every activity I implemented, however, it was not possible due to the organization of the groups in pre-school and lack of time to implement my activities and to not clash with teacher's own lessons. I felt a bit disappointed about that as my plan was to have the entire pre-school group being part of the entire pack of activities. This could be avoided at least in a certain level if I had planned beforehand the implementation part of the process and if I were not absent from daycare due to sickness.

Some things worked better than others but in general children enjoyed being part of the activities and had fun. For instance, children were very active and participative, when I read

them the two stories. They were curious, interested, keen to answer questions about the story I read, and get to know more about the wonders of our planet and the mission we all have in protecting the planet. In the game with a set of cards to put in order with the process of producing strawberries, children wanted to show me that they knew what the steps are for producing strawberries. In that session some children said that was their favorite part of the lesson. I felt that children understood the main goal of that specific activity, which was the time it takes to produce food and the long process it takes to have food in our plates. The next day, children would come to me and say, “I did not like very much the food today, but I ate all, so I did not waste anything”. It felt a real success to me listening them saying that proudly and with a sense of responsibility. Another activity children liked a lot and had fun was the ugly taste test, it was very good to have their hands on the food, blindfolded and excited to guess what they had in their hands. I believe that the goal was achieved when they realized by themselves that we should not waste food “even it looks different”.

When implementing the activities, I felt a bit stressed and worried if I was doing well enough, if I made clear to children what the activity was about. I think I was sometimes too concerned to implement everything what I had planned but after the activity, I always wrote notes in my notebook, and reflected about the activity and my feelings and children’s reactions, and thought what are the priorities? Following every single step of the activity or follow the rhythm of the group of children? It gave me joy to see them smiling and question things or when commenting positively about the activity. They all got the main point of each activity and clearly made them think and question things that not all the things are as they thought they were, and they thought on the consequences of their actions.

Feedback from children

After each activity that I implemented, I gathered feedback from children using a child-friendly paper form that I created with stickers (bees) from Word program and then created subtitle under each sticker, forming 6 different options (“Amazing”, “I want to know more about this”, “It felt a bit boring”, “So funny”, “Mind blowing”, and “I don’t want again this activity, thank you!”). Bees are very important of the reproduction process of plants, they are major pollinators of many fruit and vegetable crops, and they also give us honey which is used in food and medicines, therefore I decided to use it as a symbol in the feedback form. The feedback form was laminated so that each child could use a marker to give their feedback and then wipe off so other child could use the same form again, not wasting unnecessary paper. I told to each child that they could choose more than one option and the reason why they chose the same. The figure 20 below shows the feedback form and some of the children giving the feedback. The figure 21 shows some of the responses that the children gave.

How did you like this activity?
(Mark it with a circle)

Amazing 	I want to know more about this! 
It felt a bit boring! 	So funny! 
Mind blowing! 	I don't want again this activity, thank you! 

Thank you! 🐝



Figure 20: Feedback form and children giving feedback in the form

FEEDBACK FORM OPTIONS	CHILDREN ´S WORDS
AMAZING	“Your lesson was so cool”, “My favourite part was the game”, “Amazing to learn those things”, “Talking about food”, “I liked what you told”, “Drawing”, “Being blindfolded and trying to guess the food”, “Tasting the food”
I WANT TO KNOW MORE ABOUT THIS	“I would like to know more about the food subject”, “More about not throwing food in trash”, “Feel the food”, “Food waste”, “This again”
IT FELT A BIT BORING	“Waiting for my turn (playing the game/to be the bio-waste checker), “The story was too long at the end and I was hungry”, “I was sleepy and tired”, “Sitting down is boring”, “I was hungry”, “I don´t know”
SO FUNNY	“When you told garbage instead trash”, “The book”, “Dancing the earth song on the break”
MIND BLOWING	“The truck of garbage in the landfill”, “I was surprised with the things you told us”, “Drawing”, “Everything”
I DON ´T WANT AGAIN THIS ACTIVITY, THANK YOU!	“Tiring”, “Because you told a lot”

Figure 21: Table of the feedback responses given by children

Feedback from teachers at Alberga unit

The feedback was also collected from the teachers of the daycare. One or more teachers were with me at the time of the implementation, and they gave me verbal feedback after each activity that I implemented with children. That way there was space for me to improve in the next activities and I have made use of the comments given to me. The observations were in general good and the few advice they gave me were related to my lack of experience working in daycare and with a big group of children. For example, be aware of time management in each activity and avoid swoping the places of children during the activity of drawing because it might distract them.

They liked the fact that I connected the activities to previous ones and that is good for them to remember and link the things. They noticed that I listened to their advice and I tried to improve and work on that. They thought that the game I used with a set of cards was very good idea and children liked a lot. The “Earth song” I used in the middle of one activity was nice and appropriate to the activity theme and children could stretch and have fun during the small break. They thought that all the activities were well designed and developed, however they also agree that should have been more sessions for the complexity of the topic. Nevertheless, children liked to be the bio-waste checker, they think it is fun. One child even mentioned that we should not waste food.

7.1 Ethical considerations

The Finnish National Board on Research Integrity (TENK) provides the guidelines for a trustworthy conduct of research. When doing any kind of research or project, one need to be aware of the principles of research integrity. (Tenk 2012) Throughout the process of writing my thesis and the implementation phase of the process, ethical considerations were kept in mind all along.

The working life partner was aware from the start, about my thesis subject and my ideas of what could be the implementation part. The manager of the daycare agreed that I could do my thesis related activities in the daycare and he had informed the guardians about the same. After my plan was ready to put in practice, I asked the daycare teachers’ opinion and approval so I could put the plan in action.

Besides the formal information given to guardians about my project, I decided to write a small introduction about me to the guardians to explain them who I was, why I was there and the period I was going to be there. Parents were kept informed about my activities session when picking up the children and whenever any question would arise.

Ethical principles and codes of ethics may not always provide clear solutions to issues or provide direction for specific situations, but they can be used as a starting point for thinking about the relationship between the client's rights and the worker’s responsibilities (Talentia 2019). When I implemented the activities with children at the kindergarten, I had in mind my responsibilities as well as children’s rights. In every single activity that I implemented I was always accompanied by a daycare teacher to supervise my work as I was not part of the personnel of the daycare. I followed the ethical guidelines of the working life partner, by being flexible and adapt to their schedule, not interfering in their plans with the children and when they provide me to read the staff guidelines, safety plan dossiers and guidelines for students to be aware of the entire work done at daycare I read them carefully.

Respecting children and their rights, listening to their opinions and preparing the activities according to their age, was always my main concern. The identity of children was never compromised, and I asked permission to take pictures during my activities and their faces are not recognized in any picture.

The sources used in my thesis were all reliable and up to date so that the thesis would be based on a current study and information. The nature of my work strives towards to a sustainable community, preserving the living environment to everyone which is a noble cause for creating something good for everyone.

8 Conclusion and discussion

My aim while implementing this functional thesis was to introduce the concept of sustainability and inculcate sustainable food practices in children at the day care. The subject is necessary and important in the education for sustainable development because food is one of the elements of the environment in which children can directly voice their preferences and get an opportunity to make sustainable choices when given a chance. If the practices are followed regularly and information about the subject is imparted to children at a young age, not only at the working life partner, but the guidebook can also come in handy for other teachers and parents. Lunch time is also considered as a learning opportunity in many day cares across Finland and thus food becomes an important tool to know more about its inception from a seed to the markets from where we buy. The activities are diverse, and materials used can be easily found, their implementation is fairly simple and appropriate for young learners in a day care. Values and ethics developed early in life can be the foundation of our personalities when we grow up. To become active and responsible citizens of the future, children need to develop habits and behaviours that are earth friendly and reinforce sustainability in all walks of life, food being an important factor, because without it we cannot survive. They should also understand that growth and development should not come at a cost of the environment and we are completely dependent on it for our survival. The guidebook was designed keeping these things in mind.

During the research for writing the thesis, I was transported in this huge and complex world of sustainability and why it is so important to change our behaviours and habits of consumption. While working with the children, I also learnt that although they know a lot of things, some of them do not know the basic things like where the food they eat has its origins. Some children thought it comes from the supermarket. They had no idea how and where it is grown. We need to give scientific and correct information to them about the source of our food. They might know more about operating tablets and computers but connecting their self with nature is very important for a sustainable future. I realized how

important my subject was when faced with such a scenario and am sure that activities relating to sustainable use of food will help to sow the seeds of sustainability in the children.

The feedback from the teachers and children have given me the confidence that not only are the activities useful and important, but also enjoyable and interesting. Children need to be given education in a playful environment using diverse methods, so that learning is fun and not a burden. Therefore, I consider the implementation and thesis-writing process to be a learning experience through which I have gained important knowledge about the current hot topic of sustainability as well as gained experience in working with children in day care. Although there were some challenges and obstacles, it was an experience that I will cherish forever. Learning to navigate through all the difficulties and challenges has made me realize that, one can overcome them with presence of mind, positive communication, and interactions. These will help me in my future work as a kindergarten teacher.

As for future development ideas on this topic, I think it worth to think on other ways to approach this subject matter for children younger than pre-school age and make it still interesting and easy to understand for them to apply in their daily lives at home as well.

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