IMPLEMENTATION OF A HIGH INTENSITY LUNCH INTERVENTION IN THREE SELECTED LOCAL COMMUNITIES – A CASE STUDY

EXTENDED MASTER THESIS
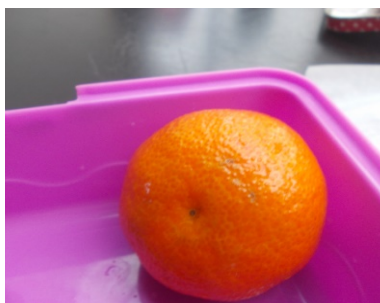
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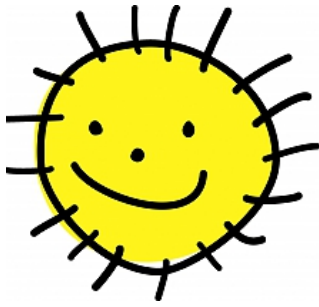**Charlotte Terese Heerup**
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PROJECT SUMMARY

The aim of the thesis is to measure if a lunch intervention targeted at families with school children can promote healthy lunch options in schools. By applying a multicomponent health promotion intervention with a various determinants such as educational activities, a lunch box workshop, kitchen activities and parent event at school setting, supermarket and by use of Mass Media, we assess the school children's *Knowledge*, *Attitudes* and *Practices. S*ince the lunch box system is the most popular type of food arrangement for school children in Denmark, it is of interest to us to gain insight into the parent's opportunities and challenges in relation to healthy lunch options.

ABSTRACT

Current food habits and practices observed in adolescents and children might have adverse consequences on their health. Overweight and obesity are related negative health outcomes such as hypertension, diabetes mellitus type II and cardiovascular disease. Eating habits in the childhood are carried later into life. Therefore, it is relevant to develop interventions to establish healthy dietary habits at an early stage of life. In August 2014 the new school legislation was implemented in all primary schools in Denmark and increase the timespan spent in school for children. The school legislation introduces 45 minutes of daily physical activity as a part of promoting health, while food and meals were not included as a high priority. The introduction to the new school legislation established an opportunity to focus on the food that the children eat at school, since the children spend up to 50% of their day in school and consume several lunch meals per week. And school-based interventions are of great value when promoting healthy eating habits for school children.

The aim of the thesis is to measure if a lunch intervention targeted at families with school children can promote healthy lunch options in schools. By applying a multicomponent intervention with several planned activities in the school setting and supermarket and by making use of the Mass Media, we attempt to measure the effect of the school children's *Knowledge* concerning healthy lunch options. One aspiration for this thesis has been to determine the influence a lunch intervention can have on *Knowledge*, *Attitudes* and *Practices* for families with school children in three selected local communities, Egebjerg, **Højby** and Asnæs.

Several methods has been applied to investigate this. By involving the two preschool classes from Højby School in taking photographs of their lunch and having focus group interviews we gained a deeper understanding of the school children's *Practices* and perceptions of a healthy lunch. By conducting a knowledge-based quiz at baseline and at the end of the lunch intervention, we measured whether a lunch intervention had broadened the level of *Knowledge* in relation to a healthy lunch. Three parents were participating in a semi-structured interview where we could explore their *Attitudes* to a healthy lunch and identify whether a lunch intervention will have an influence on their *Attitudes*. Furthermore we got an insight into the opportunities and challenges regarding healthy lunch options.

Based on the analysis of our data, the results from the knowledge-based quiz and focus group interviews, we concluded that the children appeared to have a general awareness of what a healthy lunch box should include. The children's *Practices* were challenged through the lunch intervention where the children had to relate to their own perception of a healthy lunch box. We experienced that the children had a reasonable perception of what elements a healthy lunch box should contain.

Our results from the semi-structured interviews with parents showed a high attention to prepare a healthy lunch for their children. The parents felt a certain responsibility towards ensuring their children's health by providing them with a tasteful, appealing and filling lunch box for the school day. The parents tried to implement new alternatives in the lunch box and evaluated the lunch intervention as being a great initiative, which gave new *Knowledge* and inspiration to healthy alternatives. Some challenges were found within the children's limited food preferences, however which indicated that the children's likes and dislikes for certain foods was a limiting factor.

ACKNOWLEDGEMENT

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CHAPTER 1.   INTRODUCTION PARAGRAPH

This chapter starts by explaining our background and motivation of the chosen subject. Secondly, an introduction to the background and problem area of the thesis will be presented along with several initiatives working with health promotion for school children and adults, in order to support healthy eating and reduce the risk of developing obesity and chronic diseases later on in life. The overall aim of the thesis and the problem statement will follow. Finally a delimitation and clarification of central concepts will be elaborated.

During the thesis we will make use of italic types when quoting the respondents. Important terms will be highlighted both in italic and bold type.

1.1. PREFACE

During the Master's degree programme Integrated Food Studies we identified a common area of interest, which we wanted to explore further in the Master Thesis.

With our different backgrounds, one holding a bachelor in Nutrition and Health from Metropolitan University College and the other a bachelor in Food Science from Copenhagen University, we have acquired different experiences and different viewpoints on how to work in the field with children. Furthermore how to involve children and their parents as a target group in a health promotion intervention where the main objective is to influence them in a positive way to create healthier lunch habits.

This evoked our interest in the field Public Health Nutrition.

Throughout the Master's degree programme we have worked with essential and interesting aspects of Public Health Nutrition, including:

- The relation between food consumption, physical activity, nutrition and health outcomes.
- Promotion of health by supporting and encouraging local communities to eat healthy and be more physical active.
- Designing, managing and implement various nutrition related action both in private and public settings.

Along with these central aspects of Public Health Nutrition and the growing challenges of non-communicable diseases, such as cardiovascular disease and diabetes mellitus type II caught our interest are within the field of health promotion in the area of food. Based on the increased focus on the content of the lunch box in the conjunction with the new school legislation, it is our interest to illustrate how a lunch

intervention can contribute to new *Knowledge* on how to work with families on how to obtain healthier lunch habits.

1.2. INTRODUCTION

The primary school legislation, which was implemented in August 2014 in Denmark, increases the timespan spent in school for school children. The introduction to the new school legislation offers an opportunity to draw attention to establishing healthier lunch habits. Since children consume approximately half of their daily food intake at school or after school clubs, a school-based intervention focused on promoting healthy eating habits is highly relevant and has generated great interests among policy makers (Mikkelsen 2014, Undervisningsministeriet 2014, Vine & Elliot 2013, Wang & Stewart 2013). A broad range of stakeholders is present, making it a suitable environment in which to interact with eating and socializing (Mikkelsen 2014, Wang & Stewart 2013). In order to establish healthy dietary habits at an early stage, the school setting is of great value based on the health aspect, but also because the lunch meal during the school day can lead to wellbeing and social interaction (Carlson & Benn 2010, Wang & Stewart 2013).

Current food habits and practices observed in children and adolescents may have adverse consequences on their health. The health consequences might result from an inappropriate diet, and a low level of physical activity. Studies show an increasing risk of developing obesity indicating a demand for change in the food habits and lifestyle characteristics for children and adults (Rampersaud et al. 2005). Overweight and obesity are related to a range of both short and long-term negative health outcomes such as hypertension, diabetes mellitus type II and cardiovascular disease (Han, Lawlor & Kimm 2010). Worldwide obesity and overweight among children and adolescents has turned into a global epidemic (Matthiessen et al. 2008).

Eating habits in the childhood also continue later into life (Kelder et al. 1994). Therefore, it is important to develop interventions to establish healthy dietary habits at an early stage of life (Pedersen et al. 2015). Recent studies showed that children's diet in generally consist of too high amounts of sugar and saturated fat compared to dietary guidelines and recommendations. Especially, the intake of dietary fibre, fish, fruit, vegetables and fruit among school children are insufficient compared to the dietary recommendations. The children's eating habits indicate a need for improvement (Christensen et al. 2012, Pedersen et al. 2010, NNR 2014).

When it comes to shaping children's eating habits both parents and teachers can act as role models since both are capable of influencing children's eating behaviour, health *Knowledge* and *Practices*.

Research indicates that parental influence on children's eating habits decreases when their habits are influenced by their peers at school (Mikkelsen 2014, Patino-Fernandez et al. 2013).

According to Mikkelsen (2014) several studies have shown that school meals offered tend to be more in accordance with the nutritional recommendations compared to the lunch box from home or meals purchased outside schools (Mikkelsen 2014). It is therefore important to expand both parent's and children's knowledge towards healthier lunch options.

Nutritional knowledge is generally low among children and adolescents, who are not aware of the connection between food choice, physical activity and health. A number of strategies in relation to health promotion for children and adults are required in order to support healthy eating, and reduce the risk of developing obesity and chronic diseases later in life (Taylor, Evers & McKenna 2005).

Several initiatives seeking to promote healthy eating have been made in the last couple of years. A European project called Health Educational Projects Community (HEPCOM), aim at preventing overweight and obesity in children in Europe by promoting healthy eating and physical activity. A learning platform was developed to support local communities and increase the quality when designing and implementing school health interventions. This was done by identifying the best practice tools, disseminating learning and results from previous and current health interventions (Steno Diabetes Center 2015a).

The online-platform has analyzed local communities and schools need for knowledge and inspiration when implementing health promotion interventions in 45 local communities in 15 European countries (Steno Diabetes Center 2015a). The platform was seen as valuable for stakeholders in local communities, who were involved in strategic planning and decision-making on health promotion for children. Furthermore, schools could choose the tools that were most appropriate for them to use as knowledge and inspiration on health promotion interventions (HEPCOM newsletter 2014).

A project at the National Food Institute at the Technical University of Denmark is currently under development with the aim of exploring how the nutritional quality of the lunch box and snacks can be improved and how to facilitate more physical activity during school days.

The project involves 750 children from 3rd to 5th grade from 10 different schools, along with parents and teachers. The school children will prepare a brochure with healthy lunch box recipes for their parents as well as a mobile application with advice for a healthy and filling lunch box, and ideas for more physical activity in their daily life. The school children will be engaged in the project by identifying their eating and exercise habits, and each school will develop a health policy, which supports healthy eating and physical

activity. This project might help the individual child and the entire family to be more active and promote healthy eating habits in their everyday life (Andersen 2014).

In line with the abovementioned project, a health promotion project, called PULSE is focusing on healthier and a more active lifestyle for families with children in two selected communities, Husum and Gentofte. By engaging the families from a variety of socio-economic background, the goal is to develop a user-driven and innovative concept, with activities in multiple settings; partly an exhibition at the Experimentarium and partly by local health promotion events in Husum and Gentofte (Steno Diabetes Center 2015b). These events are developed in cooperation with local stakeholders and the citizens in the local community, allowing the families to participate in developing the activities at home. An exhibition made in participation with the families can stimulate and support a dialogue on health in the families, help to encourage the families to take action on lifestyle changes and to improve their health (Steno Diabetes Center 2015b).

1.3. AIM

The overall aim of this thesis is to measure if a lunch intervention targeted at families with school children can promote healthy lunch options in schools. The intention is to promote healthier lunch options for the families by applying a multicomponent intervention with a composition of various determinants in the primary school, supermarket and by making use of the Mass Media. This should be achieved by measuring the effect of the school children's *Knowledge* concerning healthy lunch options. One aspiration for this thesis has been to determine the influence a lunch intervention can have on *Knowledge*, *Attitudes* and *Practices* for families with school children in three selected local communities, Egebjerg, **Højby** and Asnæs.

Since the lunch box system is the most popular type of food arrangement for school children in Denmark (Kainulainen, Fjellström & Palojoki 2012), it is of interest to us to gain insight into the parent's opportunities and challenges in relation to healthy lunch options. On the basis of our aim, a problem statement is formed along with three research questions to uncover the topics influencing the context of our lunch intervention.

1.4. PROBLEM STATEMENT

Can a lunch intervention targeted at families with school children in three selected local communities promote healthy lunch options in schools?

1.4.1. RESEARCH QUESTIONS

- Can a health promotion intervention broaden school children's knowledge in relation to a healthy lunch?
- Can a lunch intervention influence the attitudes of the parents and what are the opportunities and the challenges in relation to healthy lunch options?
- Can the children's practices regarding their perception of a healthy lunch be altered through a lunch intervention?

1.5. DELIMITATION

This paragraph will shortly explain some of the most relevant areas of this thesis in order to narrow down the field of research for the lunch intervention.

This thesis has put emphasis on how to involve three local communities in the participation of the lunch intervention, namely Egebjerg, Højby and Asnæs. Due to the fact that the lunch intervention applies to individual, social and pedagogic levels in multiple settings such as primary schools, a childcare center, supermarkets and the Mass Media, adhering to the values and principles of the *Supersetting approach*, we attempt to create a synergistic effect.

The purpose from the beginning of the research was to include the three local communities in the data analysis, and to highlight and compare each outcome of the intervention. Due to the scope of the thesis and limited amount of time, our primary focus throughout the thesis is on Højby School. Because of this limitation our main focus has been on school children. We have chosen to limit the primary intervention to two preschool classes at Højby School, and to involve these children and their parents in the data analysis. Implementing more interventions or including a greater span of age groups would provide us with more data than we could realistically analyze within the scope and time frame of this thesis.

Health promotion intervention

We define a health promotion intervention as an intervention targeted at families with children, with the aim to improve the children's unhealthy eating habits.

Health

In this thesis, health is perceived according to the definition from WHO (1948):

"A state of complete mental, physical and social wellbeing and not the absence of disease or infirmity"

Health promotion

In this thesis, the term health promotion is based on the definition from Margetts (2014a), where:

"Health promotion is defined as any process that enables individuals or communities to increase control over the determinants of their health. The Ottawa Charter for health promotion have outlined five approaches within health promotion":

- Building health policies
- Creating supportive environments
- Developing personal skills of the public and the practitioners
- Reorienting health services
- Strengthening community actions

Public health

Public health will in this study be considered as a collective action taken by the society to protect and promote the health of entire populations.

Project SoL

Project Sundhed og Lokalsamfund (SoL) is a four-year health promotion community-based project. The objective of project SoL is to promote health, targeting families with children by affecting the families shopping, eating and exercising habits (Aalborg Universitet n.d.). The project has been implemented at Bornholm and in Odsherred as a reference group.

Discourse

The term *Discourse* will be used according to Adele Clarke's definition. Clarke defines *Discourse* as a person's, a group's or societies opinions, thoughts and views on specific subjects through written or verbal

expressions. The *Discourse* is the story behind the situation and are essential to understand specific situations (Clarke 2005).

The Supersetting approach

Within the thesis the *Supersetting approach* is used as an intervention strategy, whereby coordinated activities aimed at reaching a common overall goal, such as improved health in a population group. These are carried out in various settings and involve different stakeholders from local communities (Bloch et al. 2014).

Knowledge

In this thesis, *Knowledge* is perceived as identification of what people know as well as their *understandings* on any given topic. Additionally it relates to an individual's understanding of nutrition and their ability to recall food- and nutrition related terminology (FAO 2014).

Attitudes

Attitudes will in this thesis refer to emotions and motivation with the possibility of influencing the individual's behavior within a certain *Practice*, either negatively or positively (Andersen 2015, FAO 2014, Vandamme 2009).

Practices

The definition of *Practices* will be based on the definition from Halkier (2013):

"Practices come into being in the processes of activities in everyday life that are carried out in front of others, together with others and in relation to others. Everyday life practices are characterized by recurring performances and accomplishments" (Halkier 2013)

Synergy

Synergy is created by integrating a variety of different stakeholders with diverse backgrounds and professions, who can optimize the intervention (Bloch et al. 2014).

This chapter will provide a description of the theoretical framework of this thesis. Some central themes will be elaborated such as: *Public Health Nutrition interventions* and the *Supersetting approach* together with *Communication between stakeholders,* which have been the fundamental themes for planning and implementing this particular lunch intervention*.*

Knowledge, *Attitudes* and *Practices* (KAP) and practice theory will support the examination and function as the theoretical background in this thesis.

Finally, we will form a picture of how the school children's lunch habits and eating patterns appear in today's Denmark, and how the school as a setting can function for promoting health.

2.1. PUBLIC HEALTH NUTRITION INTERVENTIONS

Public health is defined as collective action taken by society to protect and promote health in a population and preventing diseases (Margetts 2014a).

The World Health Organization (WHO) defines health as:

"A state of complete mental, physical and social wellbeing and not the absence of disease" (WHO 1948)

A Public Health Nutrition (PHN) cycle is applicable when solving health related issues and promoting health. The PHN cycle include seven different steps, which can be seen in *Figure 1*.
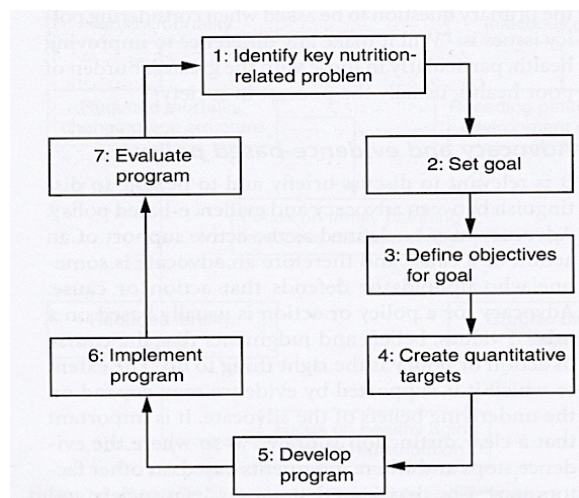
Figure 1: PHN cycle Illustration of the seven steps in the PHN cycle (Margetts 2014a)

The first step in the PHN cycle involves *'Identifying key nutrition-related problems'*, where the idea is to understand the overall issue related to the problem area. Before performing a specific intervention, certain questions should be addressed such as:

- *What are the big health problems in the region?*
- *Are the nutrition risk factors identified relevant to the target population?*

The second step concerns *'Setting goals and broad aims'*, where clear goals and aims are required in order to measure if there has been any impact on public health nutrition programs aimed at improving health among the population (Margetts 2014a). Within Public Health Nutrition, aims are defined with the purpose of improving the identified nutrition-related health outcomes (Margetts 2014a).

After having defined a specific goal, the next step is now to *'Define objectives'* within the target group. It relates to discovering key factors seen as determinants and sources of variation. The objectives can be broad and an example of an objective could among others be: *'To encourage people to eat a healthy diet and enhance the level of physical activity'* (Margetts 2014a).

The fourth step deals with *'Create quantitative targets'*, for each defined objective, then measure the most important and relevant obtainable targets. To show whether the targets have been reached, it is essential to have a potential in measuring the targets both at baseline and after the intervention program (Margetts 2014a). To facilitate the evaluation, which is the last step in the PHN cycle; targets need to be clear and specific.

After having completed step 1 – 4, it is now possible to *'Develop the program'*, where several steps should be taken into consideration, such as (Margetts 2014a):

- Assesses risk benefits or likely impact

- Identify what to do in the intervention

- Choose indicators for evaluation

The sixth step *'Implementation'* is the second last step in the PHN cycle, where planning, organization and implementation need to be considered. The planning of the implementation needs to be assessed to establish what should be in place in order to carry out the intervention strategy (Margetts 2014a). To finish the PHN cycle *'Evaluation'* will be conducted to determine whether the goal of the intervention has been achieved. The overall aim of the evaluation is to provide useful information, which has the possibility to be

used to evaluate the achievements of the intervention. Evaluation can be divided into the deliverance of the program and achievements of the outcome (Margetts 2014a).

2.1.1. HIGH INTENSITY IN COMMUNITY INTERVENTIONS

Community wide interventions are useable with the aim to improve health risk factors, such as unhealthy eating habits and low physical activity of a population. The strategies can involve structured planned activities with the desire of long-term changes and benefits for the community. By offering a number of advantages to a population and by affecting behaviour on different levels, like changes to policies and environments, involving different settings and establishing individually focused activities; this might establish a change in the local community (Baker et al. 2011). In research it is recognized that obtaining a community approach it requires more than a single strategy, as changing behaviour is a difficult task (Baker et al. 2011).

The intensity of the community wide interventions can be categorized based on the following six characteristics and to understand the level of effectiveness of the intervention each level can be described as 'more intensive', 'less intensive', or 'unclear' (Baker et al. 2011).

(1.)   Development of community partnerships and coalition, by involving stakeholders and building a community coalition.

(2.)   Levels of interventions, both at individual level (personal), social (interpersonal) and environmental (physical and legislative) levels.

(3.)   Reaches of the strategies; the intervention reaches the whole population, multiple sectors of the community, target group and awareness.

(4.)   The level of intervention, the volume of the intervention, frequency and duration of strategies.

(5.)   Description of cost, cost per person during the intervention and the location and presumably magnitude

(6.)   Statement of the intensity stated by the authors, such as high impact or significant cost.

What is referred to as an intervention with *high intensity* is one acting on multiple levels within a community and have multiple strategies based on the ecological approach (Baker et al. 2011).

2.2. THE SUPERSETTING APPROACH

In the following section the concept of health promotion, the setting approach and a further developed concept called the *Supersetting approach* will be described, since the lunch intervention is based on this approach.

Since 1986 when WHO's Ottawa charter for health promotion was launched, health promotion has been on the national agenda. The Ottawa charter for health promotion states that:

"Health is created and lived by people within the settings of their everyday life; when they learn, work, play and love" (Dooris 2009).

Health promotion is defined as the process of enabling people to increase control over, and to improve their health (WHO 1986). The Ottawa Charter for Health Promotion has identified some possible strategies and actions for health promotion in the local community. These are listed below and state that essential factors like caring, holism and ecology are important when implementing health promotion strategies (WHO 1986).

Strategies and actions for health promotion

(1.)   Building healthy public policy

(2.)   Create supportive environments

(3.)   Strengthen community actions

(4.)   Develop personal skills

(5.)   Reorganize health services

The definition of a **setting** is by WHO defined as a:

"A place or social context in which people engage in daily activities in which environmental, organizational and personal factors interact to affect health and wellbeing… A setting is also where people actively use and shape the environment and thus create or solve problems relating to health" (WHO 1998).

The setting approach is focusing on the individual, social and structural dimension of health promotion and what is the fundament of healthy settings are empowerment, community participation, partnership and equity (Bloch et al. 2014).

A further development of the setting approach, the *Supersetting approach*, is inspired by Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner 1994).

The intervention strategy within *the Supersetting approach* starts by defining an overall goal and then various planned activities are carried out in a variety of multiple settings (schools, sports clubs and supermarket) in a local community involving a variety of relevant stakeholders. The approach is based on ecological and whole-systems thinking, and stipulates important principles and values of **integration**, **participation**, **context**, **empowerment** and **knowledge-based development** (Bloch et al. 2014).

2.2.1. INTEGRATION

The purpose of integration is used when planning, implementing, monitoring and evaluating the actions within the intervention. Furthermore, integration refers to coordination of the planned activities, and co-implements the planned activities that are most relevant for the applied methods, targeted population and expected outcomes. Integration refers to the *values*, *practices* and *procedures* established in the structures and cultures of organizations in the local community. Intersectional partnerships and relevant sectors are integrated in order to get the most optimized effect of the planned health promotion activities (Bloch et al. 2014).

2.2.2. PARTICIPATION

To influence and changing ordinary people's attitudes and behaviour, health knowledge, motivation and involvement plays an essential role in order to make a change (Bloch et al. 2014). High participation of the target group is important in this approach, and is done by involving and engaging with as many relevant stakeholders in the local community as possible. With the intention for the target group to feel ownership and achieve behavioural and attitudinal change (Bloch et al. 2014).

2.2.3. CONTEXT

Different factors, such as social, environmental and cultural context, need to be understood and taken into consideration when planning and implementing the activities in the local community. The structural circumstances can affect the opportunities for the health promotion effort. This could be done by involving the schools, the supermarket or sports clubs in the health promotion actions, where there can be a greater chance for establishing health promotion in a local community. Contextual factors relate to everyday life as perceived by the population group and targeted by health promotion activities (Bloch et al. 2014).

2.2.4. EMPOWERMENT

The concept of empowerment is being promoted when people succeed in increasing their ability to determine personal attitudes, values and goals, and to act and take responsibility in a balance between personal beliefs and social norms (Bloch et al. 2014). By having a respectful dialogue with the target group, and support and motivate them, it might provide a greater chance for promoting attitudinal and behavioural change (Bloch et al. 2014).

2.2.5. KNOWLEDGE-BASED INTERVENTIONS

The approach is characterized as being knowledge-based, which means that scientific knowledge is applied and produced with deep respect to research tradition and scientific discipline to the subject area (Bloch et al. 2014). By involving and actively participate stakeholders and community resources when planning the actions, the approach cannot be seen as a top-down model by e.g. researchers (Bloch et al. 2014)

2.3. COMMUNICATION BETWEEN STAKEHOLDERS IN THE LUNCH INTERVENTION

This paragraph will provide an insight into the communication between the relevant stakeholders from the local community Højby. In continuation with the *Supersetting approach*, the purpose is to reach an overall goal by establishing a mutual understanding among the involved stakeholders by respecting the differences in backgrounds, norms, values and opinions in order for the intervention to succeed (Bloch et al. 2014).

Concerning this intervention, all relevant stakeholders are a part of a communication network, where their individual background, experiences and personality can influence the way they perceive and interpret the information that is shared in a communication situation (Windahl, Signitzer & Olson 2013)

In the Convergence Model (*Figure 2*), Rogers and Kincaid illustrates this and the figure shows how two participants (A and B) perceive, interpret, and understand given information on an individual basis, which may result in some sort of belief and action. Through the communication process it is possible for the participants to reach a mutual understanding, which is obtained from ongoing interaction and further on lead to collective actions (*Figure 2*) (Rogers and Kincaid 1981).
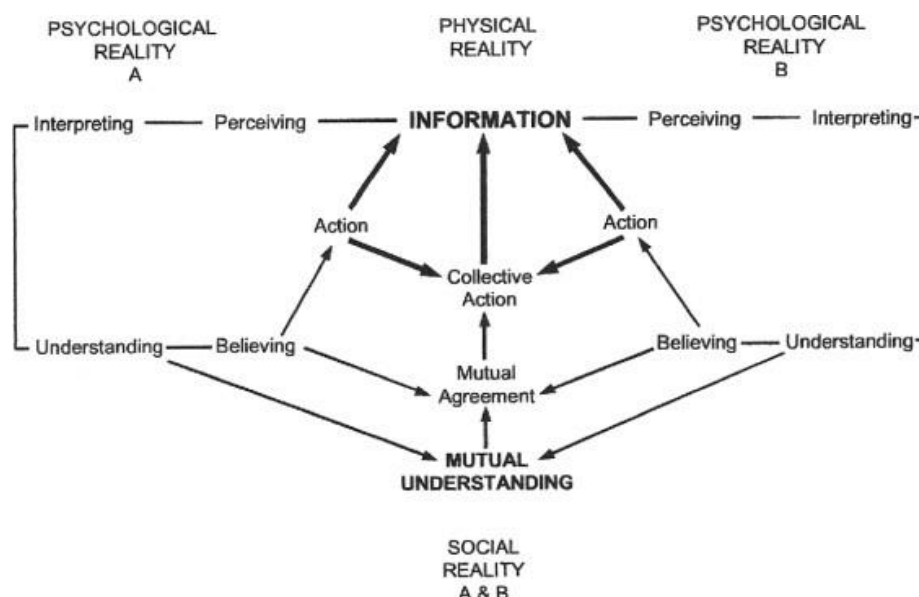
Figure 2: The Convergence Model (Rogers & Kincaid 1981). In a given communication process, information is shared and each of the people perceives it and arrives at her/his own interpretation, understanding and beliefs about the shared communication. When each participant reaches their understanding and beliefs it can be communicating to others, which is one of the types of actions and then the action will create new information, which can be interpreted by others participants. In a dialogue of two or more people, they can reach a mutual understanding, which is obtained from ongoing interaction and further on lead to collective actions

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For example it can be possible for the stakeholders in the lunch intervention to perceive and interpret the information in different ways, which can lead to different understanding and different actions. For this intervention the most important stakeholders (researchers, teachers and the supermarket) will be communicating by emails, project meetings and by phone allowing them to create a mutual understanding that is leading to collective actions, since they agree upon what actions to be taken in the intervention. However, communication can lead to misunderstandings between the stakeholders, which can affect the outcome of the intervention (Windahl, Signitzer & Olson 2013). If this is the case in the intervention, the information will be perceived and interpreted in different ways, and the communication will not go through the whole model since it they do not reach a mutual understanding or collective actions.

Mutual understanding between people usually occurs when meanings and information are exchanged in an ongoing process of interactions and communication (Windahl, Signitzer & Olson 2013).

Collective actions can be the start of the process, because all stakeholders take a part in the intervention and the stakeholders can share their values, opinions and understanding on how to execute the lunch intervention (Windahl, Signitzer & Olson 2013).

In a Communication Network, the individual stakeholder and group are linked together by the communication. The network approach as a strategic communication method is good to use, if all stakeholders involved in the communication network discuss each of their different and individual arguments to the intervention (Windahl, Signitzer & Olson 2013).

The Communication Network might help the stakeholders involved in the intervention at Højby School to reach a mutual understanding, which can help to establish a well-planned and successful intervention.

The Network Approach as a strategic communication method is a good choice if all stakeholders involved in the communication network are discuss each of their various and individual arguments to the intervention. Communication dynamic is not static, and therefore it is important for the involved stakeholders to establish continuously communication both internally and externally (Austin 2000).

2.4. KNOWLEDGE, ATTITUDES AND PRACTICES (KAP)

This following paragraph provides a definition on *Knowledge*, *Attitudes* and *Practices* (KAP) as well as an overview on how KAP can be applied and how it is applied in several other studies.

Knowledge, *Attitudes* and *Practices* (KAP) are commonly used in surveys, where it is normally used for investigation of human behaviour related to certain topics. Within studies of nutrition-related assessment,

KAP is furthermore a useful method for gaining insight into people's determinants of their dietary habits (FAO 2014, Vandamme 2009). The KAP survey was established in the 1950's and originally intended for research about family planning in the Third World (Vandamme 2009).

KAP is composed of three different elements, *Knowledge*, *Attitudes* and *Practices*.

These three elements are defined according to FAO (2014) and Vandamme (2009) as:

Knowledge:

"Identification of what people know as well as the understanding of any given topic. Additionally it relates to an individual's understanding of nutrition and their ability to recall food – and nutrition related terminology" (FAO 2014)

Attitudes:

"Identification on how people feel. Attitudes are emotional, motivational, perceptive and cognitive beliefs, which may positively or negatively influence the behaviour or a practice of individuals. Furthermore the term attitude, beliefs and perceptions are replaceable and the individual's future behaviour is influenced by the attitudes" (FAO 2014, Vandamme 2009)

Practices:

"Identification of how people act and how they do it. Additionally it is defined as the observable actions of an individual that could affect their nutrition. Similar to attitude, the term practice is interchangeable and has a connotation of long-standing or commonly practiced behaviour" (FAO 2014, Vandamme 2009)

KAP is a necessity when evaluating nutrition-education and communication interventions (FAO 2014). KAP has three different objectives regarding study types. Firstly it can be used for diagnostic purposes, where it is used as a tool for describing various population's *Knowledge*, *Attitudes* and *Practices*. Secondly it can be implemented to enhance people's insight within current circumstances and help in designing suitable and specific interventions. Finally, it is an effective tool when evaluating certain interventions and programmes (FAO 2014, Vandamme 2009).

Regarding nutrition-related assessment, the purpose is to assess and explore people's *Knowledge*, *Attitudes* and *Practices* relating to nutrition, diet, foods and health issues.

Overall, KAP surveys continue to be an essential tool when assessing people's perceptions, willingness and ability to interact and participate in different *Practices* and programs (Vandamme 2009).

During implementation of an intervention, monitoring and evaluation are important key components when ensuring the intervention is on the right track and obtaining its expected outcomes (FAO 2014).

2.5. PRACTICE THEORY

Practice theory can be considered as a cultural theory or a special analytical optic, which can be applied on data (Halkier & Jensen 2008). Practice theory focuses on everyday life, particularly social life and social actions within sociological research in fields such as organizations, families, educations and leisure activities (Halkier & Jensen 2008). Individuals are defined as *practitioners* and the activities individuals perform are defined as *Practices* (Andersen 2015).

By focusing on the social actions and how this will be performed, does not dig into individual aspects, like discourse and intention (Halkier & Jensen 2008). According to Bente Halkier, professor at Roskilde University, *Practices* can be defined as following:

"Practices come into being in the processes of activities in everyday life that are carried out in front of others, together with others and in relation to others. Everyday life practices are characterized by recurring performances and accomplishments" (Halkier 2013).

A *Practice* is an experienced type of an activity; something, which is embedded in our everyday lives and is not suitable for practices that are new for us (Halkier and Jensen 2008).

Many varieties of definitions on practice theory are seen between different theorists like the Australian philosopher Ludwig Wittgenstein (1889-1950), the early Anthony Giddens, the late Michel Foucoult as well as some contributors to the development of practice theory (Halkier & Jensen 2008).

One of them is the German sociologist Anders Reckwitz (2002). According to Anders Reckwitz (2002), practices can be defined in the following way:

"A practice… is a routinized type of behavior which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, "things" and their use, background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of other etc…" (Reckwitz 2002)

The abovementioned definition of social practice should be understood as bodily activities, mental activities, knowledge, emotional states and commitment. A social practice can for example be cooking. The essential part of this concept is that the different elements that organize a practice are included equally

and mutually dependent on each other (Halkier & Jensen 2008). When describing a practice as a bodily activity/mental activity, it is to emphasize when we do something with our bodies, our brain is involved unconsciously (Andersen 2015).

Within practice theory, a practice can be composed of several different sub-elements, divided into three elements: 1) Specific activities 2) Tasks 3) Projects.

Theodore Schatzski develops his practice theoretical definition on the basis on the late Wittgenstein's work (Halkier & Jensen 2008). Schatzski's way of looking at a social practice is very similar to Reckwitz.

Schatzski states that practices can be recruited at different levels: specific activities task and projects (Halkier & Jensen 2008). Specific activities, ("doings and sayings") like cooking practice require specific activities like shopping, rinsing and preparation etc. At the next level groups of specific activities described as tasks are placed, such as producing a meal (Halkier & Jensen 2008). At the highest level, a combination of several tasks together forms a project, for example preparation most of the meals from scratch (Halkier & Jensen 2008).

Schatzski identified a central concept of practice: practice as a coordinated unit. The concept is:

"Practice as a temporally unfolding and spatially dispersed nexus of doings and sayings. Examples are cooking practices, voting practices, industrial practices, recreational practices, and correctional practices. To say that the doings and sayings forming a practice constitute a nexus is to say that they are linked in certain ways" (Warde 2005)

Alan Warde, professor in Sociology at Manchester University in Great Britain has worked with practice theory with a focus on consumption sociology on a micro-level. He argues for a practice-oriented approach with an analytical translation of the concepts of practice from Reckwitz and Schatzski into the empirical study of consumption. Here he clarifies the concept of practice as constituting a nexus of practical activity and its representations (doings and sayings). Warde's *tripartition of practices* includes the elements *understandings*, *procedures* and *engagements* (Halkier & Jensen 2008, Warde 2005).

Understanding: A practical *understanding* of what and how to take action, defined as *Knowledge* and know-how in broad sense. *Knowledge* and know-how can be perceived as the *Knowledge* the human being possesses, explained as the practice one have toward a given activity, that cannot be passed on to others (Andersen 2015).

Engagements and procedures: Warde (2005) defines *engagements* as terms, which indicate a person's own motives towards completing a given activity, and depends on the emotions attached to the performance. *Procedures* cover both written and unwritten rules that apply to the execution of a given practice (Andersen 2015)

The three elements can accommodate silent and articulated dimensions, as well as physical and mental dimensions.

For this intervention we will lean towards the definition made by Halkier (2013) and Warde's *tripartition* in the analysis, and we attempt to understand practices of everyday life as lunch practices of children at the school and at home (Halkier 2013, Warde 2005).

Figure 3 illustrates how practice theory will be used throughout the thesis:
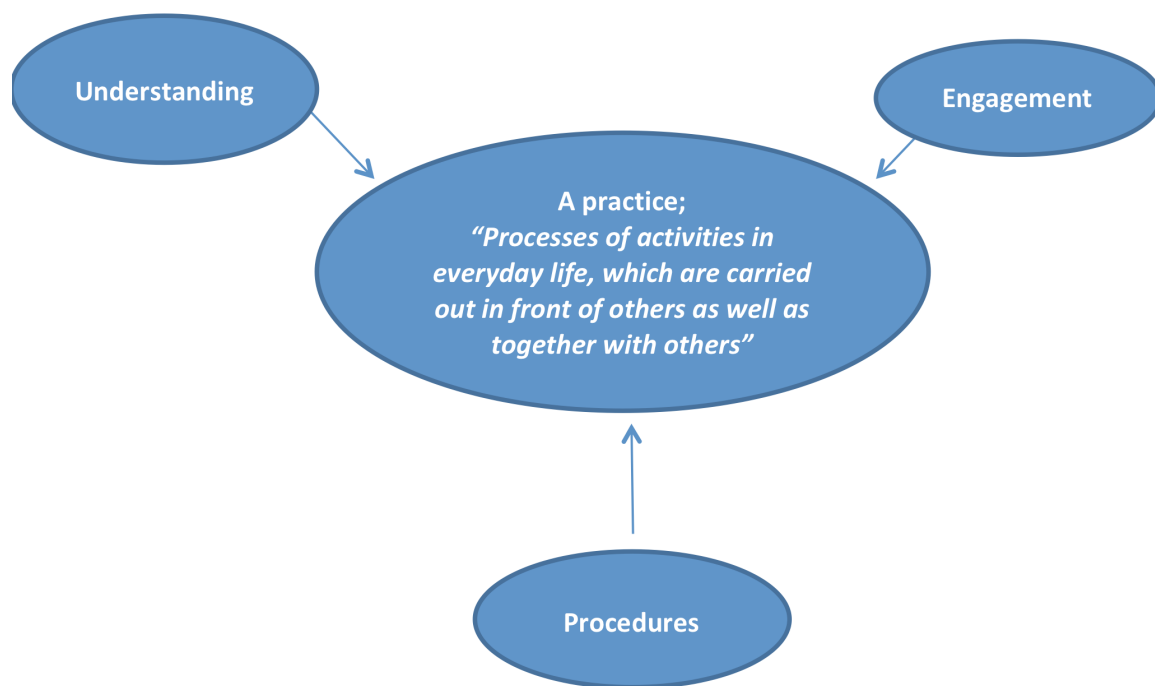
Figure 3: Fundamental elements from practice theory. This model shows the fundamental elements from practice theory used in the lunch intervention, which includes understanding, engagements and procedures with inspiration from Andersen (2015)

2.6. CHILDREN'S FOOD CHOICE

This paragraph will give an overview of preferences and neophobia and their role regarding children's food choices. Furthermore, the children's lunch habits will be described.

2.6.1. FOOD PREFERENCES

Food preferences are shaped by a combination of genetic and environmental factors. In order to avoid any negative effects from a nutritionally inadequate diet, children must learn and adapt to what is nutritious and safe to eat (Wardle & Cooke 2008).

Wardle & Cooke (2008) states that children usually prefer foods with a high number of calories per gram, which can be described as energy-dense food. When consuming these, they will achieve a pleasant feeling of satiation (Wardle & Cooke 2008).

A challenge when developing good practices concerning for example fruit and vegetables and increasing food intake, is the lack of preferences for various food groups (Sansolios & Mikkelsen 2013). Within food dislikes there are several dimensions including fussiness, pickiness and lastly neophobia, which seem to have attracted a lot of attention over the years (Wardle & Cooke 2008). Food likes and dislikes are currently playing an important role concerning food choices, especially for children (Wardle & Cooke 2008).

Children's food preferences are an interaction, which translate into behaviour in terms of preferences and habits. These food preferences evolve within a certain foodscape, where expectations, norms and values will create a form of nutritional basis for developing children's preferences (Sansolios & Mikkelsen 2013).

2.6.2. FOOD NEOPHOBIA

Food neophobia is characterized as reluctance to eat or avoid novel foods and plays a certain role in dislikes for specific types of food. This happens primarily through the visibility of the specific food (Dovey et al. 2008, Hausner 2013, Sansolios & Mikkelsen 2013). Lack of preferences for novel foods among children could be due to less exposure to novel foods either from home or at school (Sansolios & Mikkelsen 2013, Wardle & Cooke 2008). Research has shown that neophobia can be reduced through repeated exposure to novel foods (Birch & Fischer 1998). Food neophobia appears to be an important indicator of fruit and vegetable consumption since the children with reluctance to try new foods have an impact on the intake. Since children with high neophobia seem more likely to consume less fruit and vegetables, having less variety in the diet, which likely will result in a diet with a higher amount of saturated fat compared to the children with minor neophobia (Hausner 2013, Patrick & Nicklas 2005).

Children, who have many opportunities at an early stage to eat a variety of healthy food, tend to have healthier food habits during childhood. However because of neophobia (fear of tasting new food), it might take some time before children accept new food items (Osowski, Göranzon & Fjellström 2008).

Figure 4 shows the development of food neophobia from early childhood throughout life. Furthermore the figure shows that food neophobia is greater during childhood and afterwards the level seems to decrease in combination with children being more independent from their parents (Hausner 2013). This shows that food neophobia is highly age dependent (Dovey et al. 2007).
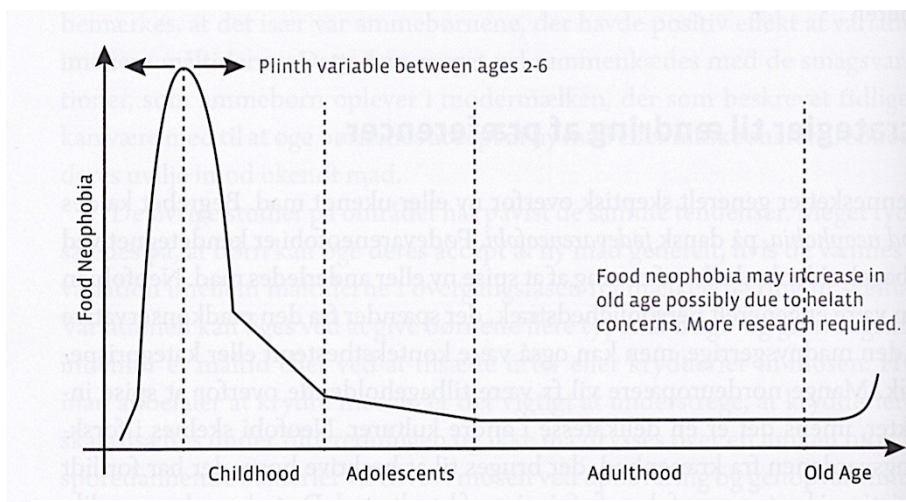
Figure 4: Development of food neophobia throughout life (Hausner 2013)

2.7. CHILDREN'S LUNCH HABITS

The Nordic Nutrition Recommendations (NNR) is an important platform for establishing policies concerning food, nutrition and health based on formulation of food-based dietary guidelines as well as diet and health-related activities and programmes (NNR 2014).

Table 1: Table showing the Nordic Nutritional Recommendations for children's intake of various nutrients and food

Nutrients and food	Daily intake	Recommendations
Saturated fat	15 E%	Less than 10 E%
Added sugar	11 E%	Below 10 E%
Dietary fibre	20 g	25 – 35 g/day
Vitamin D	2,7 μg a day	10 μg a day
Fish	16 g/day	77-84 g/day (200-300 g/week)
Vegetables and fruit **Children 4-10 years**	188 g/day of fruit and 157 g/day of vegetables. In total 345 g/day	300-500 g/day
Vegetables and fruit **Above 10 years**	141 g/day of fruit and 144 g/day of vegetables. In total 285 g/day	600 g/day

Table 1 lists the Recommended Intake (RI) for nutrients and food for children as well as the daily intake of various nutrients and food. Children's diet consists of too much fat, added sugar and an insufficient intake of dietary fibre. On the basis of *Table 1*, there is a clear indication that it is in compliance with previously mentioned facts (NNR 2014, Pedersen et al. 2015). The average consumption of children's daily intake of 20 g/day of fibre is lower compared to the recommended intake at 25-35 g/day. From viewing *Table 1*,

children's intake of vitamin D is very low, 2,7 μg a day compared to the recommended daily intake at 10 μg a day. Children consume 16 g/day of fish, which corresponds to 140 g/week and lower than the recommended 200-300 g/week (NNR 2014, Pedersen et al. 2015, Tetens et al. 2013).

The children aged between 4-10 years consume in average 157 g/day of fruit and 188 g/day, which gives a total of 345 g/day and corresponds well with the recommended daily intake for fruits and vegetables at 300-500 g/day. Though, the children over 10 years consume in average 141 g/day of fruit and 144 g/day of vegetables, which corresponds to 285 g/day. This is significantly lower than the recommend 600 g/day of fruit and vegetables (Pedersen et al. 2015, Tetens et al. 2013).

According to Christensen et al. (2012) the eating patterns of children aged between 4-10 years seemed to be more regular compared to children aged above 10 years, where there seemed to be a tendency of skipping meals during the day. This is where the lunch box is often skipped and lunch is purchased outside school. This tendency has a negative impact on the children, since it can affect their ability to concentrate and memorise specific things during a school day (Christensen et al. 2012).

The conventional lunch usually contains rye bread with cold cuts, fruit and or vegetables as a supplement. Whereas the in between meals often consists of fruit and water (Christensen et al. 2012). Seen in the light of the lunch, the intake of dietary fibre meets the recommended intake during lunch, due to the fact that the lunch mostly contains rye bread (Christensen et al. 2012, NNR 2014).

93 % of children aged between 4-10 years consume lunch at least six times a week (Christensen et al. 2012). According to the Nordic Nutritional Recommendation (NNR 2014) the lunch should at least contribute with 25-35 % of daily energy intake (NNR 2014). Pedersen et al. (2015) conclude that the Danish diet still contains too much fat and sugar even though the results showed a decrease in added sugar and fat among children (Pedersen et al. 2015).

2.7.1. PARENT'S ROLE IN CHILDREN'S EATING HABITS

The family meal plays an important role among many families and it is where health related behaviour is established on behalf on the parents (Rasmussen & Due 2010).

A number of studies have stressed the fact that parents have a very strong influence on their children's eating habits; since they are capable of shaping their children's eating behaviour because children can easily adopt their parent's eating patterns (Birch & Davison 2001, Story, Neumark-Sztainer & French 2002).

Additionally having meals together with the family is associated with a positive effect, thereby leading to a more healthy diet and being less likely to develop eating disorders and lastly achieving a better wellbeing for their children (Rasmussen & Due 2010). Finally, the availability and accessibility of food at home are determined by the parents applying a set of rules regarding what their children are allowed to consume (Story, Neumark-Sztainer & French 2002,Van Ansem et al. 2013).

Parents play the biggest role in their children's eating habits, level of physical activity, as well as their health *Knowledge*, *Attitudes* and eating *Practices* at home. These health behaviours are influenced by broader societal impacts (Patino-Fernandez et al. 2013).

2.8. SCHOOL AS A SETTING FOR HEALTH PROMOTION

This paragraph will provide an overview of some of the aspects the new school legislation will introduce.

On the 31st of October 2013 a legislative proposal was submitted after a political agreement of a reform for the public school. The new school legislation was implemented in august 2014 in all public schools in Denmark (Folketinget 2013). The intention with the new school legislation was to make the school days longer and give them more variety; focusing on the importance of all children being active every day, to increase wellbeing, motivation, learning and concentration (Kommunernes Landsforening 2013).

A new regulatory effort directed towards physical activity is highly prioritized in the new school legislation. 45 minutes of physical activity is recommended which will be included in a normal school day (Kommunernes Landsforening 2013).

A new element called "supporting teaching" will support and supplement the regular teaching like math and Danish and will take place at the end of the day. The supporting courses will for example be used for learning activities that are directly related to other courses or aim to enhance the student's learning, social skills, motivation and wellbeing. Each school is responsible for deciding how the supporting courses should work in practice (Undervisningsministeriet 2014).

To give an example of a school where the physical activity is highly prioritized, Egebjerg School has been chosen as an example. This is illustrated below:

An example on a school where physical activity is highly prioritized is Egebjerg School. They have established a set of actions areas, and one of them is eating and physical activity. The school believes that the school children every day in teaching, during breaks and in social arrangements should be motivated and inspired to physical activity and play. The school canteen offers a healthy and homemade lunch meal

every day and the school children from 4th – 6th grade are involved and responsible for serving and selling the food to the other school children (Egebjerg Skole og Børnehave 2014).

2.8.1. FOOD CULTURE IN DANISH SCHOOLS

Highlighting the social importance of the meal is a central theme in the culture *sociological meal research*. Lotte Holm, a Danish professor at Copenhagen University addresses the social and cultural aspect of food in different settings. She writes how the meal function has a way to bring the family together: 'Meals do family' (Holm 2012). Similarly, the lunch meal at school is highlighted as an opportunity to socialize with friends. Lotte Holm contributes an important quote:

"Everywhere in social life, food and meals are important elements in the organization of the fellowship between people. Meals combine people as something recurrent, regular, and everyday life, emphasizing everyday communities in the family and in the workplace, but that also marks special occasions or communities" (Holm 2012)

According to Høyrup & Nielsen (2012) the food culture, which include food and meals, should be understood as an overall concept where all actions, verbalisations and values are carried out in the school environment, such as teaching, lunch breaks as well as the formal and informal frames, such as the students food habits (Høyrup & Nielsen 2012).

The Danish food culture at primary schools has evolved from preschool to 10th grade. In preschool the food culture is built upon norms and routines, where students are used to eat with adults present, such as teachers and pedagogues. The transition from kindergarten to preschool covers fewer meals during the day, however the teachers are attentive to the children's need for small meal breaks during the day (Høyrup & Nielsen 2012). A shift in the eating culture appears next from 4th to 6th grade, wherein a greater autonomy among the students is reflected. This means that students get more self-determination and are less likely to be affected by others. This phase is where some children prefer other alternatives in favour of the lunch box (Christensen et al. 2012, Høyrup & Nielsen 2012).

2.8.2. SCHOOL ENVIRONMENT

In recent years the school setting has received a lot of attention regarding their responsibility in shaping dietary habits among students.

A school possess certain norms and values and therefore sets standards for action patterns and *Attitudes*, hereby specifying the fact that the socialization as a contributor to the environment is important (Johansen, Rasmussen & Madsen 2006).

As a setting, schools have the opportunity to influence health by implementing policies, through education and the availability of food are therefore of great importance (Margetts 2014b). The school therefore offers opportunities for the students to practice healthy eating and encourage children to be more physically active (Wechsler et al. 2000).

Several studies conclude that schools can be an important place for health promotion and thereby prevent the development of overweight and obesity among students. Since the timespan has been prolonged and students spend a significant amount of time in school, the students consume approximately half of their daily intake of food and beverages at the school (Christensen et al. 2012, Margetts 2014b, Van Ansem et al. 2013).

During lunch, the children have the opportunity to practice social skills, and change *Attitudes* towards new food and *Knowledge* of healthy eating. The lunch situation is not only centred on eating but it also gives the lunch meal value as a social situation for both teachers and the school children (Perkins et al. 1980).

2.8.3. TEACHER'S ROLE

In this paragraph the role of the teacher will be examined, since the teacher spend a significant amount of time with the school children during a day and can therefore play an important role model for the children.

Albert Bandura's social theory states that behaviour is learned from the environment around us. According to Bandura our personality is a result of the observation of other people around us and we are more likely to attend to and imitate those people we perceive as similar to ourselves. This process is called modelling, because the people we pay attention to can be seen as models for us (Bandura, Ross & Ross 1961).

During a day, school children interact with parents, teachers and school staff and they have the position to influence and shape children's health behaviours. Outside home, teachers can be seen as role models where they have a greater impact on the healthy eating behaviour, by health education and encouraging healthy eating for the children (Patino-Fernandez et al. 2013).

Teachers and school staff have the possibility to work together with the parents, and establish a basis for a healthier lifestyle habits in young children and create an environment that stimulates healthy eating and learning (Patino-Fernandez et al. 2013).

In the public schools, the lunch situation can be seen as a teaching occasion in which the children can learn about the importance of healthy eating and meals. A lot of the school children spend a significant amount of time in school and most of the children consume lunch brought from home (Osowski, Göranzon & Fjellström 2008).

Comparing Denmark to other countries in Scandinavia, in Sweden they acknowledged the importance of school meals by offering a free lunch meal for the school children in public schools, based on the idea that it will contribute to promote healthy eating habits among children and educate them (Lintukangas & Matkalla 2009). A research from Sweden showed that in order to promote healthy lunch *Practices* for school children, the teachers can play an important role. Furthermore the study showed that teachers could play three different roles (Osowski, Göranzon & Fjellström 2008). The first one is the social teacher who may turn the school lunch situation into a social occasion and used a high level of interaction with the children during lunch. The educational teacher strived to educate them in general and about meals and health, and finally there is the role of the evasive teacher, which is a passive role and it is not associated with the definition of the pedagogical meal. The study concludes that in order to understand and establish pedagogic meals, teachers must be educated and be aware of the effect of their behaviours (Osowski, Göranzon & Fjellström 2008). Good eating is not only to learn about eating healthy food but also to establishing a positive relationship with food (Osowski, Göranzon & Fjellström 2008).

2.9. SUMMARY OF THEORETICAL FRAMEWORK

In the following paragraph we will explain the most important terms and the applied theories and how these will be applied throughout the thesis.

In order to plan, implement and evaluate the lunch intervention, the Public Health Nutrition (PHN) cycle together with the six characteristics from *high intensity* has been used as background when planning the lunch intervention, and to understand how to increase the effect of the intervention. We apply the values and principles like **integration**, **participation**, **context**, **empowerment** and **knowledge-based development** from the *Supersetting approach* where planned activities are carried out in different settings with a variety of relevant stakeholders. Furthermore, the Communication Network Approach can help us to understand how the stakeholders act in the intervention can reach an overall goal, by establishing a mutual understanding based on the individual difference in backgrounds, norms, values and opinion which can lead to collective actions.

The principles from the theoretical framework KAP (*Knowledge*, *Attitudes* and *Practices*) were used with the purpose to assess the school children's and their parent's *Knowledge, Attitudes,* and *Practices*, and

what kind of challenges the parents experienced in their everyday life when making the lunch for their children.

This thesis draws attention the school children's lunch practices, which is why practice theory will be applied. Since we focus on empirical data within a Danish context it is easier for us to relate to practice theory as described by Bente Halkier and Warde's *tripartition of practices*, which includes the three elements 1) *Understandings* 2) *Procedures* and 3) *Engagements*. This will be the definition we lean towards in this analysis (Halkier 2013, Warde 2005).

The children's lunch habits will be introduced to gain an insight into the eating patterns in Denmark today. Furthermore, the aspect of taste, preferences and food neophobia will be used as background for *understanding* the parent's opportunities and challenges when preparing the lunch box.

Finally, the school as a setting can be perceived as a part of a health promotion initiative. With the new school legislation, the timespan spend at school is longer than before. During a day, school children interact with parents and teachers they have the position to influence and shape children's health behaviours both at school and at home.

Since this lunch intervention is planned in cooperation with the project Sundhed og Lokalsamfund (SoL) which is a four- year health promotion community-based project, an introduction to the project SoL will be described.

The objective of project SoL is to promote health of families on the Island Bornholm in three selected communities (Allinge/Sandvig, Hasle & Nexø) by affecting the families shopping, eating and exercising habits (Steno Diabetes Center 2014). The Danish municipality Odsherred act as reference group, with equivalent families with children aged 3 to 8 years who are registered in kindergartens and primary schools in three selected communities (Egebjerg, Højby & Asnæs) (Steno Diabetes Center 2014).

The project emphasizes influencing people's lifestyle habits through a multiple-setting approach, the *Supersetting approach*. Project SoL applies pre- and post–intervention design where the effect of the intervention on the *Knowledge*, *Attitudes* and *Practices* of the families around a healthy lifestyle are determined. This is achieved by comparing the results from before and after the implementation of an intervention (Steno Diabetes Center 2014).

In our lunch we find it relevant to apply the Public Health Nutrition (PHN) cycle (Margetts 2014a) to help addressing the problem of the thesis regarding unhealthy lunch habits among school children. In this lunch intervention, all seven steps in the Public Health Nutrition (PHN) cycle were taken into consideration when developing, planning, organizing and implementing the intervention in the school setting (Margetts 2014a).

Odsherred Municipality is located in the Northwestern part of Zealand. It is a local community with the poorest health status throughout the region. Therefore it is challenged regarding its citizens' health status, where 71 % of the population is at risk of developing overweight, hereby increasing the risk of lifestyle-related diseases, primarily due to their low socio-economic status (Poulsen, Engell & Ortiz 2014).

The elements involved in the lunch intervention are shown in Appendix 13 and will be described below. The intervention comprises of both **educational** and **practical hands-on** lunch components in the school and in the supermarket.

The multiple setting approach requires attention according to the different stakeholders involved (

Figure 5). In this thesis, the main target group is school children aged between 5 to 13 years and their parents. The secondary target groups are stakeholders who have the possibility of influencing the children's health and wellbeing such as teachers, supermarket and the Mass Media (Brugha & Varvasovszky 2000).

The **supermarket**, SuperBrugsen, was responsible for sponsoring some of the groceries to the *lunch box workshop* and the *parent event,* whereas the **local media**, *TV2Øst*, covered the *lunch box workshop* in the supermarket and the *local newspaper* published an article regarding the *lunch box workshop*.

The **teachers** participated actively in the lunch intervention by helping us as researchers with the planning phase as well as the performance of the lunch intervention. Prior to the implementation of the intervention, an employee made a press release from project SoL (Appendix 29).
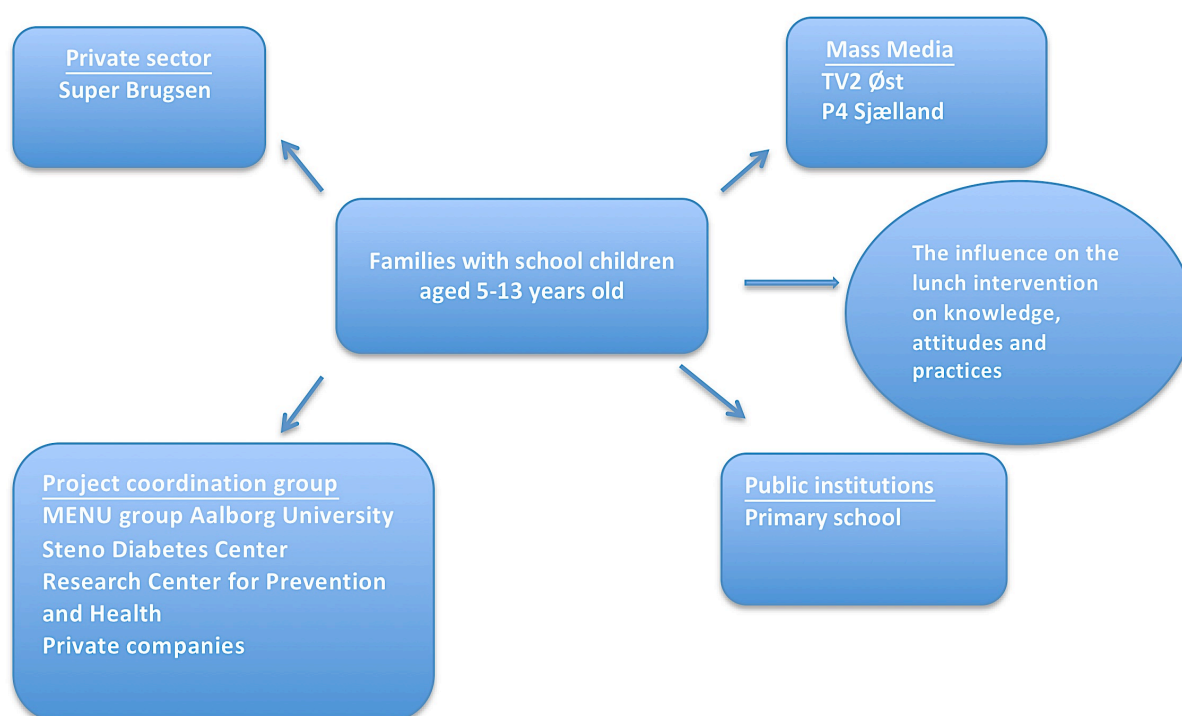
Figure 5: This figure illustrates the target group and the most relevant stakeholders important for the performance of the lunch intervention

One of the aims of the lunch intervention was to establish *high intensity* by analyzing on the individual (personal) level by measuring the *Knowledge* of each child in two preschool classes at Højby School (Baker

et al. 2011). This is done by conducting a knowledge-based quiz at baseline and in the end of the intervention. At social (interpersonal) level we carried out several activities as a part of the intervention (Baker et al. 2011).

The lunch intervention was characterized as a multicomponent intervention. It was composed of various determinants such as **educational activities**, **a lunch box workshop, kitchen activities** and **parent event** (Appendix 16).

Each of the following activities will be elaborated further:

Educational activities: Here we made use of the model '*Madpakkehånden*' consisting of five **elements** (*Figure 6*) (Appendix 17):

1. **Vegetables**
2. **Bread**
3. **Cold cuts**
4. **Fish**
5. **Fruit**

Figure 6: Madpakkehånden showing all five elements (vegetables, bread, cold cuts, fish and fruit) (Fødevarestyrelsen n.d.b)

'*Madpakkehånden*' is released by the Ministry of Food, Agriculture and Fisheries with the aim of making it easier for the Danish municipality to meet the official Nutritional Recommendations, and as a rule for remembering each of the five elements (Fødevarestyrelsen n.d.b).

This model (Appendix 18) was applied in the **educational activities** as a good rule to remember for children and their parents when making a healthy lunch (Fødevarestyrelsen n.d.a, Fødevarestyrelsen n.d.b).

Lunch box workshop: The children participated in groups in a lunch box workshop were they could prepare their own lunch box in SuperBrugsen, based on what they had learned from the teaching regarding '*Madpakkehånden*', and were able to bring it back to school and eat it with the other classmates.

Kitchen activities: The children prepared new alternatives to the classic lunch box for the parent event in the kitchen. This happened in collaboration with the researchers where the children worked together in small groups.

Parent event: An evening with teaching regarding *'Madpakkehånden'* and new inspiration for the current lunch box was given by us as researchers to the parents (Appendices 23-24). The children prepared these healthy alternatives to the lunch box, and were responsible for presenting them to their parents. The children could prepare their lunch box with their parents. A recipe folder was given to the parents with the new and healthy alternatives, to inspire them when preparing the lunch box in the future (Appendix 19).

3.1. CASE DESCRIPTIONS

In this paragraph the three different settings and cases will be described in further details.

3.1.1. CASE 1: EGEBJERG SCHOOL

Egebjerg School (ES), (*Picture 1*), has 75 students from preschool to 6th grade (Egebjerg Skole og Børnehave n.d). Egebjerg School is a small primary school in a small community in Odsherred Municipality. Their vision is to promote health and physical activity during school, with a focus on creating awareness on how nutrition and physical activity are important for their health and wellbeing (Egebjerg Skole og Børnehave 2014).

Our case is preschool and up to 6th grade with school children aged between 5 to 13 years. Egebjerg School has a defined target concerning health and physical activities:

"The school believes that a healthy lifestyle is an important prerequisite for good learning. Through teaching, lunch breaks and joint arrangements children should be inspired and motivated to physical activity and games. The school should therefore offer a versatile range of activities both indoor and outdoor throughout the year. The school canteen must daily offer healthy and balanced food." (Egebjerg Skole og Børnehave 2014)

Picture 1: Egebjerg School

3.1.2. CASE 2: HØJBY SCHOOL

Højby School (HS), (*Picture 2*), has 460 students from preschool to 9th grade. It is divided into two sections, where the first one is from preschool to 6th grade and the second from 7th grade to 9th grade (Nordskolen n.d). Højby School is a large primary school. The school is a part of Nordskolen, in a local community in Odsherred Municipality. Højby School has an intention to create a good and secure teaching environment for the students every day as well as establishing a good cooperation with the parents. The children, teachers and the pedagogues have established a good network by working with three different visions (Nordskolen n.d):

(1.) *"All children must succeed in their own life based on their own prerequisites"*

(2.) *"All children are everyone's children"*

(3.) *The students learning is the school's responsibility"*

Our case concerns two preschool classes and their parents regarding promoting healthy lunch options. The teachers and pedagogues were involved since the school recently has begun focusing on promoting health and physical activity due to the insertion of the new school legislation in August 2014 as well as increased focus on children's health and wellbeing.

Picture 2: Højby School

3.1.3. CASE 3: ASNÆS SCHOOL, CHILDCARE CENTER AND THE LOCAL SHOPPING MALL

Asnæs School (AS), (*Picture 3*), is a large primary school with 470 students from preschool to 9th grade, which is a part of Sydskolen, in a local community in Odsherred Municipality (Sydskolen n.d). At Sydskolen, the educational environment is highly prioritised along with developing inspiring learning environment for the students (Sydskolen n.d).

The local shopping mall in Asnæs, (*Picture 4*), consists of various shops, cafes, restaurants and supermarket.

Our case was collaboration with both the childcare center SpilOp'en and 3rd grade students participating in the SFO and their parents from Asnæs School together with two supermarkets from the local shopping mall. The intervention has been organized and mediated by project Sol and our intention has primarily been to evaluate the lunch intervention with the parents. The intervention has been implemented in a local shopping mall, as a different setting compared to our main setting the school.

Picture 3: Asnæs School

Picture 4: The local shopping mall in Asnæs

This paragraph provides a description of the underlying philosophical assumptions. The problem statement in this thesis is approached from an interdisciplinary angle, involving both qualitative and quantitative methods to examine the issue of the thesis.

4.1. HERMENEUTIC

In order to gather information from the research field, the hermeneutic approach was applied to investigate the children's *Practices* in relation to lunch in a series focus group interviews. Meanwhile the semi-structured interviews were used to measure whether the lunch intervention could influence the parent's *Attitudes* around a healthy lunch for their children.

As researchers, we have the opportunity to engage physically in the 'social worlds' of the school children and parents, since we are investigating the field around food and health, which is a currently debated subject. We need to be aware of our influence on the data collected during the lunch intervention because of our own preconceptions related to our field of study. In relation to the abovementioned, the German philosopher Hans Georg Gadamer (1900-2002) and his philosophical hermeneutics will be the foundation used to explore the meaning of the individual school child's experiences, and understanding of their lunch practices. According to Hans-Georg Gadamer's perception of hermeneutics, the qualitative method aim to investigate the understanding of the individual by looking at experience attached to understanding human interpretation (Regan 2012). In qualitative research, we as researchers need to work and use the preconceptions actively in order to understand the data (Dahlager & Fredslund 2012) that is important when interpreting the data. It is not possible to put the preconceptions aside or ignore them, because of the impact of existing knowledge (Fuglsang, Bitsch Olsen & Rasborg 2013).

The hermeneutic approach claims that the key concept is preconception, which is to shape the basis of one's new understanding (Birkler 2007). With the researcher's preconception, an amount of prejudices establish a horizon, which describes how the researcher understands and interpret the world or phenomena (Birkler 2007). The understanding will happen in a fusion of horizons between the different horizons (Dahlager & Fredslund 2012.). The fusion is understood in the sense that they form a common third as a space for the production of new knowledge. It is therefore not simply a reproduction of the researcher's knowledge and the person or area of concern's knowledge. The fundamental concept of the hermeneutic circle is a process, which produces understanding and knowledge. The basis of the hermeneutic circle is that the whole can only be understood by involving the individual parts, and that the individual parts can only be understood by involving the whole (Dahlager & Fredslund 2012). The

preconceptions are nested in the historical, cultural and social context, and understanding requires that the researcher is aware of own bias and preconceptions and try to challenge them to see the new perspectives (Fuglsang, Bitsch Olsen & Rasborg 2013).

Theory

Observer's perspective

Interpre-
tation
pattern

Whole

Pre-
under-
standing

Under-
standing

Experiencing
perspective

Part

Dialogue

Practice
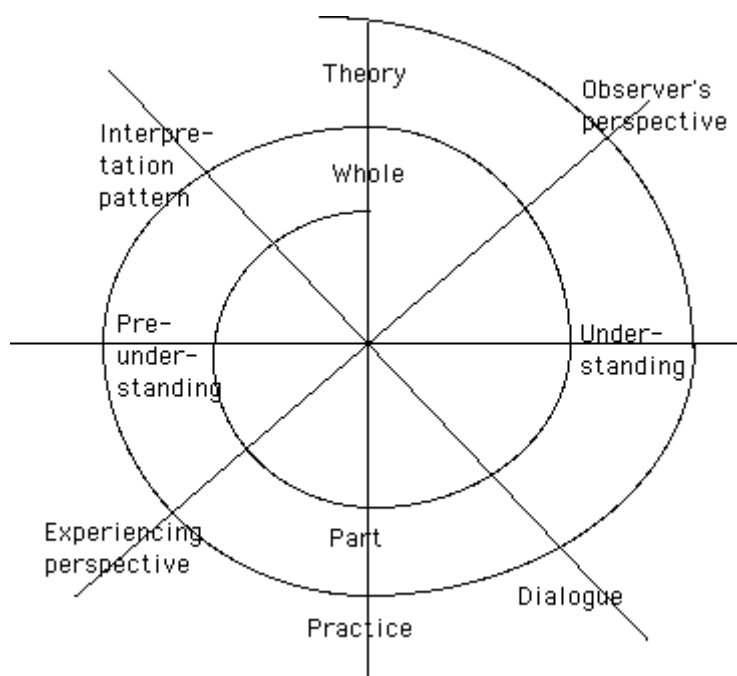
Figure 7: The hermeneutic cycle (Alvesson & Sköldberg 1994)

The ongoing process of the hermeneutic circle and the individual parts creating the whole is illustrated in Figure 7. In the hermeneutic circle it is not possible to take over someone else's horizon, but the prejudices can be limited by provoking own preconceptions and hereby broaden the horizon (Birkler 2007).

In relation to our thesis, the intention has been to use our understandings, preconceptions and previous experience about the school children's lunch *Practices* to obtain an understanding of these. A part of our preconception about the children's *Practices* was that the children did not have significant influence on the content of the lunch box. Another preconception was the concept of food neophobia and picky eating among school children. We had the notion that the children were hesitant of trying new foods in the lunch box and rejected a substantial amount of foods that were unfamiliar to them. From our previous experiences with children of that age, we have experienced that some children wanted to eat the same cold cuts every day and did not appreciate if the parent experimented too much with the content of the

lunch box. Another aspect of the preconception is related to the content of the lunch box, which we thought would be less healthy and filling.

With regards to the parents, before the semi-structured interviews we had a preconception that the parents had some challenges when making the lunch box, such as time and inspiration for a healthy and appetizing lunch box. At the same time needed motivation to establishing a healthier everyday life. In relation to their *Attitudes* toward the lunch box, another preconception was that a healthy lunch box was not always highly prioritized, because the parents possess limited knowledge of what a healthy and filling lunch box contained.

This chapter will describe the applied methodological approach, when planning the design of the research. Different approaches were chosen in order to produce sufficient *Knowledge* to view the central issue of the thesis from multiple perspectives. A mixed method has been conducted since this will optimize the results from the intervention. Additionally, the data collection and analysis for each type of method will be specified. This chapter furthermore provides an introduction to the data collection. To analyze the empirical field related in our thesis, Messy and Relational maps are created.

In the following paragraph each method used for data collection will be described.

5.1. THE ETHICAL ISSUES OF WORKING WITH CHILDREN

Children are often seen as having few resources and being dependent on the adults (Johansson 2011). Several strategies need to be taken into account when doing research with children. A strategy developed by Pia Christensen and Alan Prout within ethical symmetry, focuses on looking upon children as subjects, rather than objects in research by looking at their perspectives and understandings. According to the chosen method mentioned below, we include the children in the research by investigating their social and cultural world seen through their perspective (Christensen & Prout 2002).

5.2. PHOTO ELICITATION

Photo elicitation is based on the idea of including photographs into the interview. The use of photographs in interviews elicits another kind of information than the traditional interview with use of words only. Photographs can evoke deeper elements of human feelings, and thereby utilize more of the brain's capacity (Harper 2002). Harper suggests that photo elicitation should be considered when the researcher wants to recognize a perspective of a subject from the interviewee's point of view (Harper 2002). Photo elicitation is a good way to see the children's perspective and to obtain *Knowledge* about their everyday life by communicating with them through their eyes (Clark 2011).

5.3. FOCUS GROUP INTERVIEWS

A focus group interview is another method of interviewing, which normally involves more than one interviewee, usually at least six people. Focus groups can be considered as discussion groups and does not resemble the general interview style, where the aim is to obtain as many different viewpoints as possible (Christensen, Nielsen & Schmidt 2012, Kvale & Brinkmann 2009). The interviewer conducting the focus group interview usually has the role of moderator and this person will be expected to guide each interview

without being too intrusive (Bryman 2012). Focus groups are useful when doing exploratory studies within a new field (Kvale & Brinkmann 2009).

5.4. SEMI STRUCTURED INTERVIEWS

A suitable way of gaining understanding and *Knowledge* about people's experiences, intentions, actions and motives for each individual is to use the qualitative interview (Christensen, Nielsen & Schmidt 2012). Compared to surveys, interviewing is an intimate experience where the process is usually not anonymous. Regarding the ethical aspect of interviewing, it requires that the researchers begin with initial information to help the interviewees decide whether they want to participate (Olney & Barnes 2008). An interview guide is a tool for how to structure the process of the interview. In semi-structured interviews, an interview guide should include several subjects to be answered or covered and with suggestions for a few questions. The interviewer is responsible for choosing how the interview should proceed (Kvale & Brinkman 2009).

An interview guide is created to have a more structured conversation with the interviewees. Furthermore an interview guide includes all questions, which should be asked and also to ensure that the right information is collected. It is essential to prepare a good interview guide ensuring that good information is gathered (Olney & Barnes 2008). A good idea is to pilot-test the guide with someone who is familiar with interviews and to explore whether the questions would be answered in the right way (Olney & Barnes 2008).

A semi-structured interview is neither an everyday conversation nor a closed questionnaire, which is executed in accordance with an interview guide. It is an interview with a focus on topics, like health, with suggestions for questions and is inspired by phenomenology (Kvale & Brinkmann 2009). It is the most commonly used interviewing format in qualitative research and can be done with an individual or a group (Dicicco-Bloom & Crabtee 2006). By using the semi-structured individual interview it allows the researcher to dig deep into social or personal matters and focus on not only the interviewee's experiences but also their perception of their lives (Christensen, Nielsen & Schmidt 2012).

5.5. OBSERVATION

Observation in research is a systematic and formal process of observing the world around us, which forms a basis for the ability to make judgments about certain things (Angrosino 2007). The researcher is a part of the natural setting, which means the field or phenomena that is observed by the researcher (Angrosino 2007). The observation approach can distinguish between participating and non- participating (Launsø, Olsen & Rieper 2011). As a participating observer the researcher is a part of the social processes and act

naturally in the field. The non-participating observer is observing the field from outside and is not included in the social processes.

5.6. SITUATIONAL ANALYSIS

The situational maps are useful in the way they can be used in a wide array of projects. They can help the researcher to find the human, nonhuman, discursive and other elements in the project and analyze the data more deeply (Clarke 2005). Clarke establishes a number of maps to work with the data. By making use of Maps, this process enables the researchers to lay out all the important key actors, objects and discourses in complex situations. This will capture the relations between each of the different elements (Clarke 2003). When keeping an open mind it will eventually identify various possibilities and barriers of the current situation. Therefore maps are intended to capture and discuss the messy complexities of the lunch intervention (Clarke 2005).

5.7. LITERATURE SEARCH

In the beginning of the thesis a literature study has been conducted as background for gaining knowledge about the chosen subject. The applied search strategy is based on keywords that can lead toward relevant articles concerning the issue of the thesis, and based on depth search in selected databases. We also made of use of the literature from the university's database, and the literature recommended by the university and which is consisted to be academic and qualified for this thesis (*Table 2*). This search gave us an insight into the latest research and literature about the topic of this thesis. The aim of searching for interesting literature covering KAP (*Knowledge*, *Attitudes* and *Practices*) and practice theory was to collect and discuss relevant views on how to understand and measure *Knowledge*, *Attitudes* and *Practices* in *Practice* with children and parents.

Table 2: Literature search

Databases	Newspapers and special journals
PubMed	**Food Culture**
Web of Science	**Politiken**
ProQuest Research Library	**Landbrug & Fødevarer**

Aalborg University Library	WHO
Bibliotek.dk	
DTU Food Institute	
SAGE journals	
Ministry of Food	
World Health Organization	
Scopus	

5.8. MIXED METHOD RESEARCH

The term of mixed method research is characteristic for the current thesis since it includes both, quantitative and qualitative methods. To better gain an understanding of the level of the children's *Knowledge*, we applied both qualitative and quantitative methods, which provided a broader understanding, than if just one method has been applied. Therefore, it could increase the confidence in the actual findings (Bryman 2012). This will be elaborated further in chapter 6.

For the analysis the quantitative and qualitative findings according to the children's *Knowledge* were related to each other, in order to be able to answer whether a health promotion intervention had broadened the children's *Knowledge* in relation to a healthy lunch.

In the following, the dimension of **timing**, **priority** & **integration** will be explained, since they are considered as important when describing mixed methods design and to recognize that mixed methods design can deviate in several ways (Creswell et al. 2011).

Timing: Refers to when the qualitative and quantitative methods are used in relation to each other directing to the research questions in the thesis (Clark et al. 2014). The data may be collected at the same

time or one method followed by another, therefore requiring a good timing when collecting both qualitative and quantitative data (Creswell et al. 2011).

Priority: In mixed methods studies, the qualitative and quantitative methods are either equally emphasized or one of the methods can be given higher priority in the study (Creswell et al. 2011).

Integration: The point where the qualitative and quantitative methods in the research process interact with each other as well as when integration strategies are used to merge the results from both qualitative and quantitative methods (e.g., during analysis) (Clark et al. 2014).

Weight of different methods: How to weigh the different methods in the study or the importance of each approach. This indicates the capital letters for the dominant methodological approach (QUAL/QUAN) a lowercase letter for the less dominant method (qual/quan). In this study an equal weight on both qualitative and quantitative is prioritized, which is capitalized as (QUAL/QUAN) (Wheeldon 2010).

5.9. RESEARCH DESIGN

To get a thorough understanding of the current situation, this study was conducted as a mixed method with a convergent design, where the research process has been as followed (*Figure 8*).

In this study the intension was to merge concurrent quantitative and qualitative data to address study aims, by comparing both quantitative and qualitative data. This design is known as a convergent design (*Figure 8*):
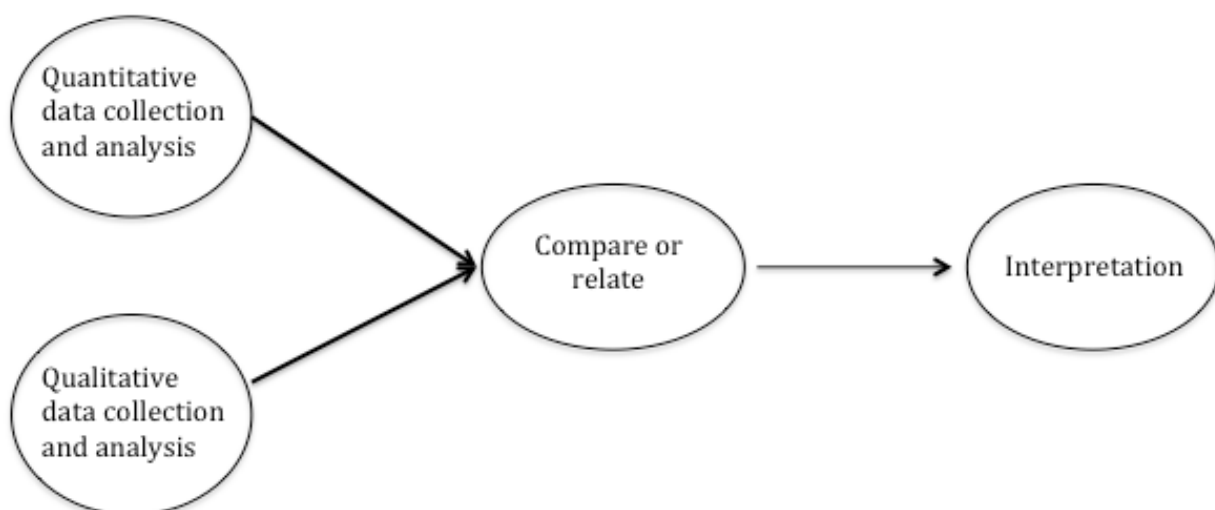
Figure 8: Research design (Creswell 1999)

The empirical research methods used in this thesis will be introduced and described in the following section. Different approaches have been chosen in order to produce sufficient knowledge to the problem statement.
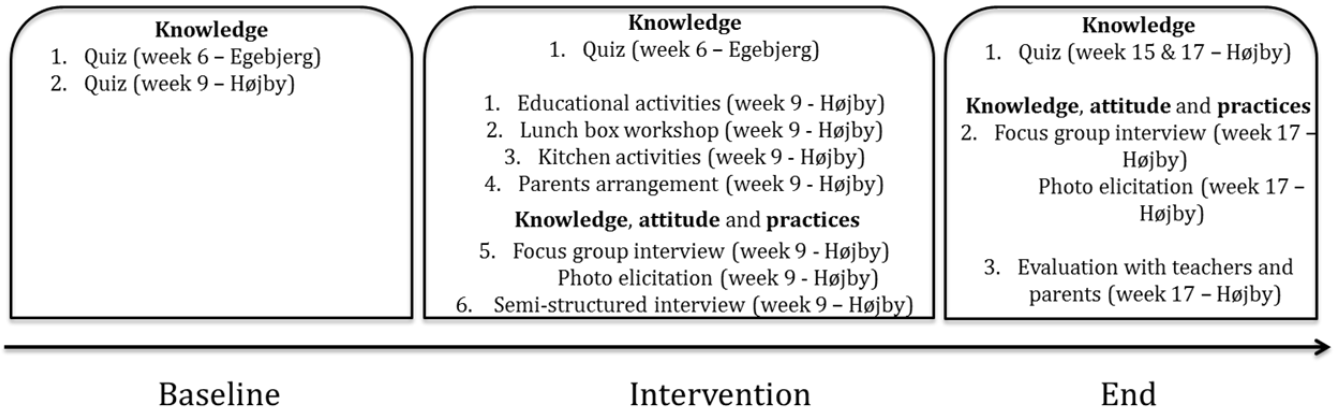
Figure 9: Illustration of the process of the lunch intervention

The data collection was conducted at Egebjerg School from the 2nd of February to the 5th of February, whereas the main lunch intervention at Højby School took place from the 24th of February to the 21st of April 2015.

A knowledge-based quiz was conducted at the baseline and again at the end of the intervention to assess the *Knowledge* of the children. Photo elicitation was followed by a focus group interview for gaining an awareness of the children lunch *Practices*. Semi-structured interview was conducted with parents, to measure if a lunch intervention could influence the parent's *Attitudes* regarding a healthy lunch for their children.

6.1. WRITTEN CONSENT

The parents were recruited in the beginning of the intervention and informed by an information letter about the aim of the intervention, and the reason for including their children in the study (Appendix 23). It was made clear that the participation of the study was voluntary and that it would be possible to pull out of the study at any time during the process, and that the informant would remain anonymous. Before the recruitment of both parents and children, written consent was given prior to participation.

6.2. KNOWLEDGE-BASED QUIZ

The **knowledge-based quiz** was divided into five parts based on '*Madpakkehånden*' including questions, which covered wholegrain, fruit and vegetables, fish, meat and general questions around healthy lunch. The children were asked to point out one right answer out of three possible answers. The quiz was going to take place during school day and was filled out under guidance of the researchers and teachers. The knowledge-based quiz was made in accordance with the teaching material made by us as researchers (Appendices 20-21). The knowledge-based quiz with 16 questions was carried out twice at Egebjerg School (Appendix 20). The quiz was conducted on the 2nd of February and repeated the 4th of February. The quiz was mandatory for the school children, which gave 63 responses in total from 3rd to 6th grade students. Afterwards the quiz was changed to be better suited for preschool children at Højby School and here with only nine questions (Appendix 21). The knowledge-based quiz was conducted at baseline the 24th of February and repeated the 21st of April in the end of intervention. The quiz was mandatory and gave a total response of 51 preschool children.

6.3. PHOTO ELICITATION AND FOCUS GROUP INTERVIEWS

The overall idea of using **photo elicitation** in our research was to explore the children's *Practices* from their perspective. The school children from Højby School were equipped with a camera during a lunch break to take photographs of their lunch. This way of using the method enabled the children to utilize images from their common lunch in the interview, making it easier for them to focus on concrete details and aspects of atmosphere while recalling and narrating their experiences (Husby, Heitman & O'Doherty Jensen 2008). The activity ran twice during the intervention, in order to see if the content of the children's lunch boxes had changed.

Based on the photos taken by the children, a focus group interview with two school children took place. The focus group interview followed a common set of themes:

- *The content of the lunch box*
- *Attitudes towards the current lunch*
- *Attitudes towards a healthy lunch*
- *Practices at home*
- *Practices at school*
- *Knowledge concerning health*

The focus group interviews were recorded by a dictaphone and each of the focus group interviews was a face-to face interview. As mentioned in figure xx, photo elicitation was followed by focus group interviews conducted two times. In February, two preschool classes (24 children) were equipped with a camera to take pictures of their lunch box. Afterwards nine preschool children were selected for a short focus group interview. In April, four preschool children were selected by the researchers to take pictures of their lunch box. Afterwards, two preschool children were selected for a focus group interview.

By incorporating a visual method it helped us open up and help the children verbalize their lunch and *Practices*. As researchers our role during the focus group interview with school children was to listen, to clarify what was needed in relation to the photograph and the children's lunch *Practices* but also to move along with the conversation progress.

6.4. OBSERVATION OF THE LUNCH BREAK

Observation was carried out to gain insight into the children's current *Practices* as well as observing the role of the two teachers from 0.A and 0.B (Appendix 26). The overall themes of the observation were: *Teachers role during lunch, school children's Practices and behavior* and the *social aspect of the lunch break.*

During a particular observation we had the role of participating observers, as the observation was only conducted for a short period of time. In-between the observation, we walked around and spoke with the children regarding the content of their lunch box. The teachers knew about our presence and the purpose of observing a lunch break. Before the observation we made an observation scheme (Appendix 25) to structure our observation. The observation was held the 21st of April, where we observed a class each and took notes.

6.5. SEMI-STRUCTURED INTERVIEWS WITH PARENTS

During the parent event held in February parents were recruited for a semi-structured interview, by personally approaching parents who showed interest in the project. We were only able to recruit three parents that day. They were performed at the teacher's classroom at school to create a relaxed atmosphere. The interview was recorded on a dictaphone with the respondent's permission and done as face-to-face interviews. Afterwards the interviews were transcribed. The transcriptions can be found in Appendices 10-11. The transcription process is explained in the paragraph below (Paragraph 6.6).

The overall aim of the semi-structured interviews of the parents was to measure whether the lunch intervention and especially the parent event could be a contributing factor in the relation to their *Attitudes* concerning a healthy lunch. Furthermore, we wanted to gain an *understanding* of the opportunities and

challenges when creating the lunch box. For the semi-structured interview, the highest priority was that the questions were easy to understand and to answer for the parents. The interview guide was therefore divided into two parts (Appendix 3). The interview guide was, regarding the parents as respondents, divided into different themes, such as *health Knowledge, lunch Practices, lunch Attitudes, opportunities* and *challenges* concerning lunch options (Appendix 3). The interview was initiated with a briefing to induce a pleasant atmosphere after the interview was conducted.

The selected themes for the interview guide concerning the parents as respondents were chosen with the purpose of answering the research questions. Furthermore, the theme socio demographic background was initially meant to open the interview; however the respondents have previously answered these questions through a questionnaire from Project SoL and were therefore omitted. The interview ended with a question regarding the respondents view on the theme health to end the interview in a proper way.

6.6. TRANSCRIPTIONS

The interviews were transcribed to identify several themes and subjects to investigate further in the analysis after the interviews were completed. Additionally words like *eh* and *hmm* were omitted as being considered irrelevant for the analysis. The interviewees was only referred to as *boy*, *girl* and *parents*.

The quotations used for the analysis were chosen according to the objectives of the thesis as well as the research questions. They were chosen with the aim of investigating the *Knowledge*, *Attitudes* and *Practices* regarding lunch among children and parents. After the transcription, we read through the interviews to discuss each of the themes. Lastly, we determined the relevance of the quotes belonging to each theme.

The interview was conducted in Danish and the chosen quotes were translated into English. Translating from one language to another has its implications, since it is difficult to capture every nuance in the translation.

6.7. SITUATIONAL ANALYSIS

In our process we have been working with two different types of maps, Messy Map and Relational Map. By using Adele Clarke's theory concerning Situational Analysis and Mapping several main actors were identified (Clarke 2005). The development of the maps presupposes certain *Knowledge* concerning the issue addressed, mainly about the most relevant actors, objects and discourses. This is coherent with the 'Hermeneutic Philosophy' by Hans-Georg Gadamer, where knowledge within a field is essential to be able to investigate it thoroughly (Dahlager & Fredslund 2012). To support this analysis of, two Messy Maps and four Relational Maps were created. By first applying the Messy Maps prior to collecting empirical data,

various actors, objects and discourses were discovered regarding the two local communities, Egebjerg and Højby. The Messy Maps can be found in Appendices 27-28. Work on the Relational Maps was initiated at the beginning at the intervention and were modified throughout the intervention when new contributing factors occurred.

We used Situational Analysis to form *Knowledge* about the relevant actors for our project and this provided understanding of the different actors and their behaviour, view, intentions and interest in the project. Through collecting and analysing the data of the stakeholders, it was possible to identify their ability to influence the project and to determine their relevance to the project.

KAP and practice theory have supported the research and served as the theoretical background of this analysis. In this paragraph we will analyse the content of the three factors, *Knowledge, Attitudes and Practices*.

This section will be divided into the quantitative findings from the knowledge-based quiz, and the qualitative findings photo elicitation and focus group interviews with school children as well as well the semi-structured interviews with parents. The comparison of the qualitative and quantitative results concerning *Knowledge* will be elaborated shortly at page 59.

The situational analysis will be elaborated further concerning the issue regarding lunch habits among school children (*Table 3*).

Situational Analysis was used to describe the problem regarding lunch habits and identified the two themes *Lunch intervention* and *Healthy lunch* as well as the most important actors in the lunch intervention. The objective of the analysis was to compare our findings from the observation of the current lunch situation, photo elicitation of the school children's lunch box, focus group interviews and semi-structured interviews with the parents. Finally, this was compared to the applied theory from paragraph 2.4 and 2.5 in the theoretical framework.

Table 3: Overall themes, which will be covered during the analysis

Target group	Theory	Subjects

School children	• KAP
	• Practice theory
		• Knowledge
		• Attitude
		• Practice
		    o Understandings
		    o Engagements & procedures

Parents	• KAP • Practice theory	• Knowledge • Attitude • Opportunities & challenges

The situational analysis provided an overview of the important actors, objects and discourses involved in the current situations at both **Egebjerg** and **Højby School** concerning the *Lunch intervention.* Furthermore it gave a visualization of the present situations.

The inclusion of the Messy Maps was chosen as a way to illustrate the different scenarios at **Egebjerg Schoo**l and **Højby School.** The **Messy Maps** were drawn prior to the acquisition of data, to identify actors and get an understanding of how they influence the lunch intervention.

It became apparent that several elements at both schools needed to be addressed further prior to the lunch intervention. The two main themes *Lunch intervention* and *Healthy lunch* will be presented in the four Relation Maps (Figure 10 – 13). Additionally the maps were used to exemplify the differences and distinguish the two schools from each other. The **Relational Maps** were developed throughout the data collection phase.

Analysis of the maps

Egebjerg School

This thesis used Egebjerg School to test the knowledge-based quiz before carrying out the actual knowledge-based quiz at Højby School. Egebjerg School is a small school compared to Højby School. Through the Situational Analysis it became clear to us that **Egebjerg School** was further along with the process of implementing health and wellbeing compared to **Højby School**. This is illustrated by the fact that Egebjerg School is following a school food policy (Egebjerg Skole og Børnehave 2014).
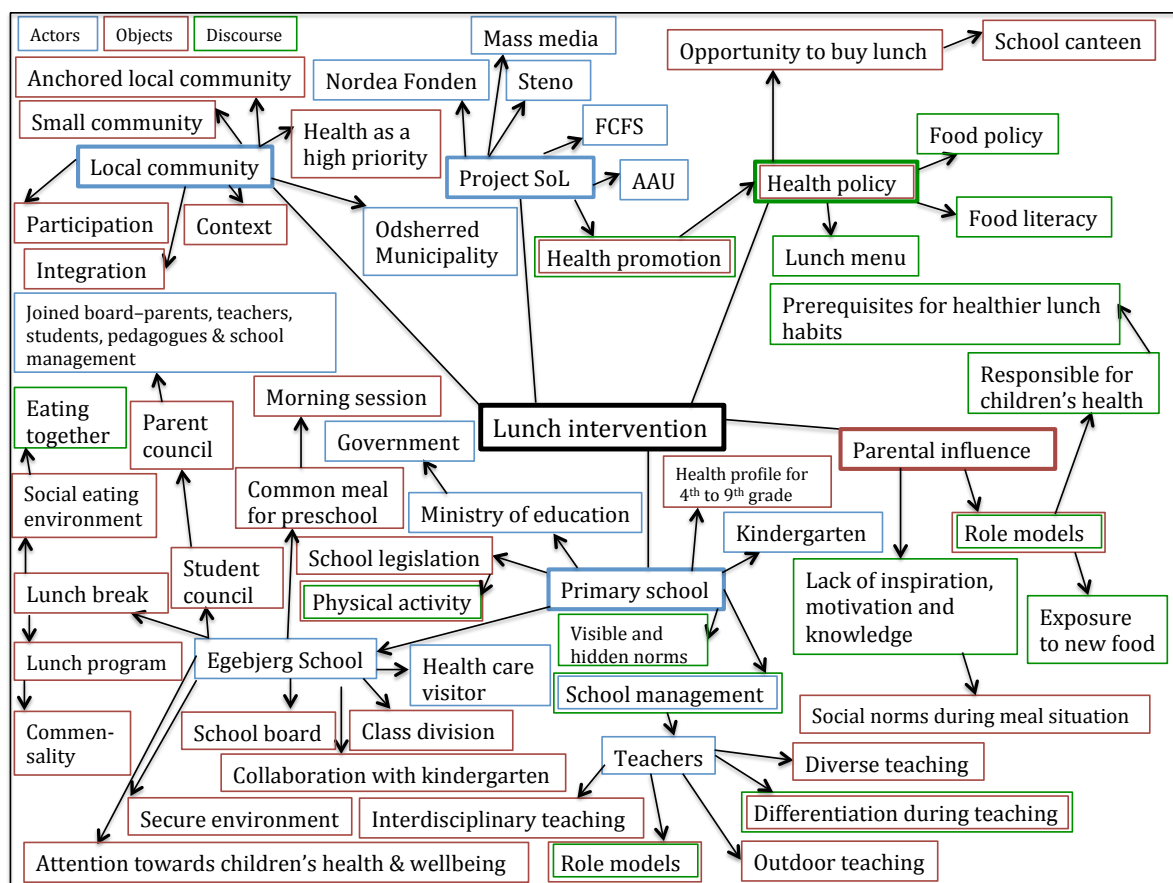
Figure 10: The Relational Map provided an overview over the main theme Lunch intervention at Egebjerg School containing the key elements. The relation between actors, objects and discourses are linked by arrows

We saw *Parental influence*, *Health policy*, *Primary school*, *Local community* and *Project SoL* as the most relevant actors, objects and discourses regarding the present situation at **Egebjerg School** during the gathering of data (*Figure 10*). Throughout the data collection we discovered some issues and opportunities to take into consideration when implementing the lunch intervention at **Højby School**.

Figure 11: The Relational Map gave an overview over the main theme Healthy lunch at Egebjerg School concerning main discourses. The relation between actors, objects and discourses are linked by arrows

Figure 11 illustrates the Relational Map based on Egebjerg School, where we identified five subjects relevant for the discourses concerning the theme *Healthy lunch*. This included *Children's perspective on health*, *Canteen*, *School legislation*, *Lunch box* and *Children's eating habits.* The focus was primarily on **educational activities** and a knowledge-based quiz and we were therefore not able to get the full overview of the school.

Højby School

The following paragraph is based on the Relational Map, which describes to the lunch intervention (*Figure 12*). Højby School is a big primary school, where there is a greater focus on physical activity more than of children's eating habits. The increased focus on physical activity is according to the new school legislation from June 2014 (Undervisningsministeriet 2014).

The social eating environment received a high priority from the teachers. They ensured a good lunch break for the children. The lunch situation took place at the canteen, where both preschool classes ate lunch together.
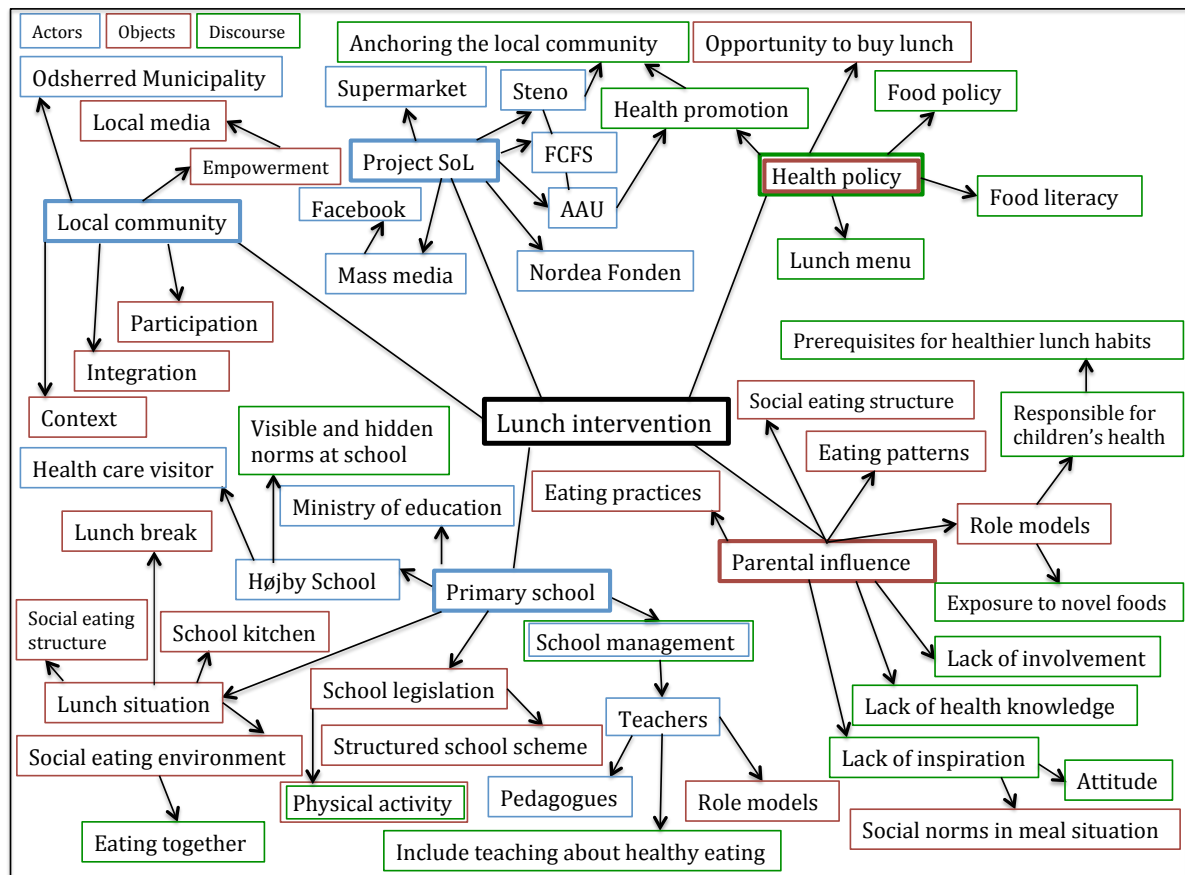
Figure 12: The Relational Map provided an overview of the main theme Lunch intervention at Højby School containing key elements. The relation between actors, objects and discourses are marked with arrows

This indicated that the social aspect is valued high among the teachers. The school is currently working on establishing a food policy; meanwhile they act according to the food policy from the '**SFO**' (after school club). To get an *understanding* of the teacher's influence on the school schedule and activities taking place at the school, we found it necessary to look into visible and hidden norms.
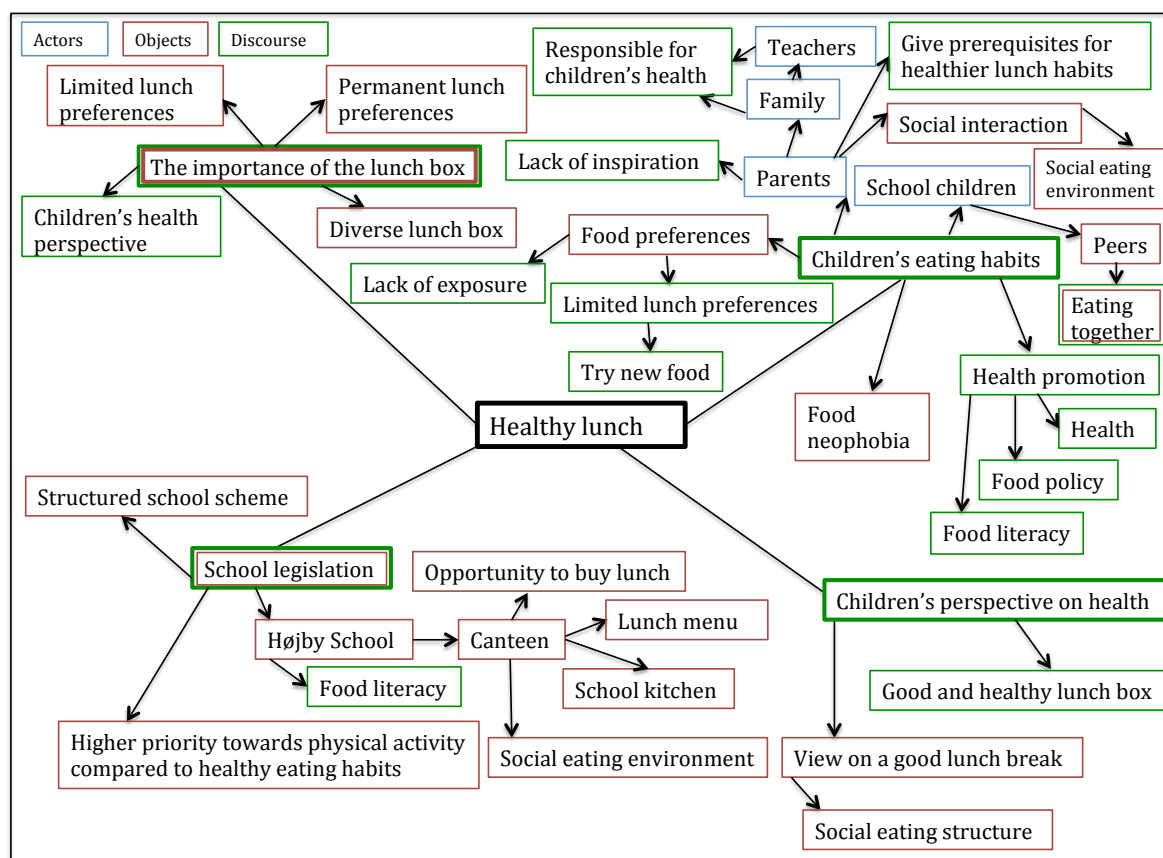
Figure 13: The Relational Map gave an overview of the main theme Healthy lunch at Højby School concerning main discourses. The relation between actors, objects and discourses are marked with arrows

The supermarket *SuperBrugsen* in Højby engaged in the schools' activities such as this lunch intervention among others. This showed their participation and integration in the local community.

When working from a hermeneutic perspective, preconception was a part of the thesis. Several preconceptions were defined prior to the lunch intervention. One of them was lack of involvement from the parents; however the exact opposite was seen during the parent event where a lot of parents participated actively during the arrangement with their children.

The Relational Map visualizes the theme *Healthy lunch* concerning discourses (*Figure 13*). We discovered four main discourses, which include *School legislation*, *Children's perspective on health*, *Children's eating habits* and the *importance of the lunch box*.

This paragraph shows the quantitative data analysis of the results from **Egebjerg School** and **Højby School**. The primary purpose was to measure if a health promotion intervention could broaden school children's *Knowledge* in relation to a healthy lunch. The secondary purpose was to measure whether there was a difference in the results between the genders.

The study sample consisted of school children; aged 5-13 years (**Egebjerg School**) and aged 6-8 years (**Højby School**).

- At **Egebjerg School** the study sample (n=32) was registered for all school children (3rd-6th grade) before the lunch intervention and (n=31) after the intervention at Egebjerg School.
- At **Højby School** the study sample (n = 24) was registered for both classes (0.A + 0.B) before the lunch intervention and (n=27) after the intervention at Højby School.

The *hypothesis* of the knowledge-based quiz was that the school children increased their *Knowledge* regarding a healthy lunch as a result of the lunch intervention. By running the same quiz with the same questions twice during the intervention it was possible to test the *hypothesis* and to assess whether the lunch intervention has had broadened the children's *Knowledge* in relation to a healthy lunch.

To describe the characteristics of the school children, it was appropriate to use descriptive statistics to begin the data analysis. Frequency was used for looking at detailed information on nominal (categorical) data. The categorical data was gender, boys are coded as 1 and girls are coded as 2. Frequency analysis was used to calculate the mean, median and mode and to see how often or frequent things occur. Gender was the chosen variable to analyze and the histogram showed the normal curve of the distribution (Appendix 30). Odds ratio and 95% confidence interval were estimated. The independent t-test was used to assess whether two groups (boys/girls) had different levels of *Knowledge* about a healthy lunch. The assumption of homogeneity of variance was tested using Levine's Test of Equality of Variances, which was produced in SPSS when running the independent t-test. A statistically significant P-value was established at 0,05. This test for homogeneity of variance provided a significance value (p-value)**.**

We were primarily concerned with the significance level - if it is greater than 0.05, our group variances could be treated as equal. However, if $p < 0.05$, we will have an unequal variance and therefore violated the assumption of homogeneity of variance. All the analysis was performed using SPSS statistic V.21.

Main findings

This paragraph will present the main findings of the knowledge-based quiz from Egebjerg School and Højby School.

The main findings from the knowledge-based quiz are presented in *Table 4* and *Table 5*, which displayed whether there was a difference between gender and a difference from before the start of the intervention to after the intervention. The quiz consisted of 16 questions focusing on elements from '*Madpakkehånden*' at Egebjerg School (Appendix 19). The results from Højby School consisted of 9 questions focusing on elements from '*Madpakkehånden*' (Appendix 20).

Table 4: Main findings from the knowledge-based quiz at Egebjerg School

	Variables	n (%)	Mean	Std. deviation	P-value
Before	**Gender**				
	Boys	62,5	13,25	1,4	**0,757**
	Girls	37,5	13,33	1,4	
	Total		**13,28**		
After	**Gender**				
	Boys	59,4	13,83	1,5	**0,674**
	Girls	37,5	13,92	2,5	
	Total		**13,87**		

Table 5: Main findings from the knowledge-based quiz at Højby School

	Variables	n (%)	Mean	Std. deviation	P-value
Before	**Gender**				
	Boys	45,8	7	1,3	**0,130**
	Girls	54,2	6	1	
	Total		**6,46**		
After	Gender				
	Boys	48,1	7	1	**0,047**
	Girls	51,9	6,7	1,7	
	Total		**6,85**		

The results indicated that there was no statistically significant difference in the scores for the two groups, boys and girls at **Egebjerg School** *(p=0,757)* before the intervention (*Table 4*)*.* After the intervention the analyses did not show any statistical differences (*p = 0.674*) between the genders (*Table 4*). The total mean score from both genders changed in a positive way ranging from a rise (M=13,28) to (M=13,87) (*Table 4*). This gave a clear indication that the school children were able to broaden their *Knowledge* to a certain extent within each of the elements from '***Madpakkehånden***'.

The results indicated no statistically significant difference in the scores for the two groups, boys and girls at Højby School (p=0,130) before the intervention (*Table 5*). The independent samples t-test revealed a statistically significant difference between boys and girls (*p=0,047*) after the intervention, indicating that the boys had a higher level of correct answers than girls (*Table 5*). The total mean score from both genders changed in a positive way ranging from a rise (M=6,46) to (M=6,85). This indicated that the children were able to broaden their *Knowledge* through the intervention to some extent.

In this paragraph, the findings from photo elicitation and focus group interviews with school children will be analyzed. Furthermore, the results from the semi-structured interviews with the parents will be elaborated further.

7.3.1. SCHOOL CHILDREN

Knowledge

According to the definition of *Knowledge* from KAP, we look for indicators of *Knowledge* in relation to the *understanding* of school children's perception of a healthy lunch. Furthermore, the individual child *understanding* of nutrition, including their ability to recall lunch-and nutrition related terminology (FAO 2014).

Based on the focus group interviews with the preschool children, a recurring theme about health and nutrition was raised by almost all the children. There seemed to be a common *understanding* about what a healthy lunch should include. This trend was elucidated through the children's perceptions of a healthy lunch, since the children related to all five elements from '***Madpakkehånden'***.

From their statements it became evident how healthy lunch habits affected them. The following quote shows a child's definition of a healthy lunch box's content:

Interviewer 1: "If you had to tell us what you think a healthy lunch box is, what would that be?" (Appendix 6, line 78)

(1.)   *Girl 2: "Meat. Because you will be strong and get strength and everything" (Højby School 0.A, Appendix 6, line 79)*

There was a tendency among the children perceptions that **a healthy lunch box** consisted of the five elements from *'**Madpakkehånden'**.* This pattern was illustrated in the following statement from a girl:

Interviewer 1: "Finally, if you had to tell us what you think about when you hear the word health? Is there something you think about?" (Appendix 5, line 63-64)

(2.)   *Girl 2: "Vegetables, fruit and rye bread, banana, fish and cold cuts" (Højby School 0.B, Appendix 5, line 67)*

The previous statement illustrates the children's limited *understanding* of the health aspect. However since the children actually relate to what they were taught about, it seems to be in accordance with the definition of *Knowledge* from FAO (2014) (Paragraph 2.4). Even though a broad *understanding* of the children's view on health was not clearly identified.

There is a clear picture that the lunch box primarily consists of rye bread because it is healthy. At the end of intervention, one of the interviewers asked one girl about her view of a healthy lunch box:

Interviewer 1: "[…] What comes in mind when you hear the word a healthy lunch box?" (Appendix 9, line 110-111)

(3.)   *Girl 2: "[…] 'Kødpølse' and 'flæskesteg', I get that sometimes in my lunch box. Cheese I also get sometimes. And 'kødpølse' " (Højby School 0.B, Appendix 9, line 112-113)*

These statements clearly signify that the children have different views on the term '*health*'. At the end of the intervention, we wanted to delve deeper into the children's view on health. Therefore the interviewer asked one girl about what she had in mind when hearing the words **health** and **fun.** She responded with the following answer:

Interviewer 1: "Finally, can you tell what you think is fun and healthy?" (Appendix 9, line 141)

(4.)   *Girl 2: "Yes, when you are playing. My favourite dish is chicken and chicken meatballs" (Højby School 0.B, Appendix 9, line 142)*

Here, the girl describes the importance of feeling good and socializing with friends by playing. This statement opened up to another way of describing health by including physical activity during the school day. The new school legislation has been implemented, where one of the purposes is to enhance the physical activity among school children (Kommunernes Landsforening 2013). This is in compliance with the analysis, where the children express their delight for being physically active during the school day.

Compared to the answers revealed during the intervention, the prior quote (4) demonstrates the children's different perceptions of the term *health*.

According to our teaching regarding '***Nøglehulsmærket***' and '***Fuldkornslogoet***', the children seemed to remember what foods in the supermarket could be categorized with these two certificates. This is illustrated in the statements below:

*Interviewer 1: "Do you remember the other brand, '**Fuldkornslogoet**'?" (Appendix 9, line 126)*

(5.)   *Girl 1: "Yes, it can be put on oatmeal, muesli bars and pasta (Højby School 0.B, Appendix 9, line 127)*

(6.)   *Girl 2: "You can put '**Nøglehulsmærket**' on 'skyr' as well" (Højby School 0.B, Appendix 9, line 128)*

Knowledge is an important indicator when looking upon children's view on health. According to FAO (2014), *Knowledge* relates to an individual's *understanding* of nutrition as well as their ability to recall nutrition-related terminology (FAO 2014). This corresponds well with the analysis, where it was noticed during the final focus group interview that the children were able to remember all the elements from '**Madpakkehånden**'. This is shown in the following quote:

*Interviewer 1: "[…] Do you remember '**Madpakkehånden**' as we talked about?" (Appendix 9, line 27-28)*

(7.)   *Girl 1: "One of the fingers is carrot, the index finger is cold cuts, the middle finger is rye bread, ring finger is fish and last one is. […] Fruit." (Højby School 0.B, Appendix 9, line 29-30, 34)*

Comparing quantitative and qualitative findings regarding knowledge

When analysing the knowledge-based quiz it was apparent that the school children had less *Knowledge* about fish and how much it was recommended to consume weekly (Appendices 20-21, Question 12-14 & 7). The element showing the greatest change in their *Knowledge* was the question about cold cuts (Appendix 21, Question 8), which indicated that the teaching about a healthy lunch and '**Nøglehulsmærket**' broadened their *Knowledge* of which types of cold cuts '**Nøglehulsmærke**t' could be applied to. With the exception of the element fish, the level of *Knowledge* increased from before the lunch intervention compared to after. The results from the focus group interviews showed a high level of *understanding* for lunch-and nutrition related terminology learned through the teaching in the lunch intervention. When comparing the findings from the focus group interviews with school children at **Højby School** and the main findings from the knowledge-based quiz regarding the five elements from '**Madpakkehånden**', a clear picture showed that the school children had a basic *Knowledge* of what a healthy lunch should contain.

Attitudes towards a healthy lunch

According to the theoretical framework (Paragraph 2.4 & 2.5) *Attitudes* are partly based on emotions and motivation with the possibility of influencing the individual's behavior within a certain practice, either negatively or positively (Andersen 2015, FAO 2014, Vandamme 2009).

In accordance with the definition of *Attitudes* from KAP (Paragraph 2.4), children's *Attitudes* to a healthy lunch will be elaborated further. Additionally, it will be investigated whether the *Attitudes* of the children

are influencing their *Practices* in either a negative or positive way. Lastly, to examine whether children's *Attitudes* towards socialization have an impact on the motives and emotions about a specific *Practice*.

Through the observed lunch break at **Højby School**, it was noticed that all of the preschool children finished their lunch box from home (Appendix 25). From our point of view the lunch box symbolizes an important norm among school children throughout the school day. However, a boy from 0.B at Højby School explained his preference for buying food in the school canteen instead. The interviewer questioned the boy about why he did not appreciate his lunch box.

Interviewer 1: "Why not?" (Appendix 7, line 54)

(8.)   *Boy 2: "[…] I like buying" (Højby School 0.B, Appendix 7, line 55)*

He hereby states that he prefer to buy food from the school canteen instead of bringing a lunch box from home. It is clear from this that some children like the variation they can get from buying lunch from the canteen instead of eating the lunch box brought from home.

The interviewer was curious about the boy's lunch preferences then:

Interviewer 1: "What do you then purchase?" (Appendix 7, line 56)

(9.)   *Boy 2: "[…] I usually buy a bun with ham, lasagne and also Spaghetti Bolognese" (Højby School 0.B, Appendix 7, line 57)*

Even though the boy favours the canteen, he has both certain *Knowledge* and *Attitudes* towards what a healthy lunch box contains. This is illustrated below where the interviewer makes an enquiry about what a healthy lunch box should contain from the child's perspective.

Interviewer 1: "If you think about a healthy lunch box. What should it contain?" (Appendix 7, line 45)

(10.)   *Boy 2: "[…] I think about 'pølse' and I think about fish. The last one I mention is vegetables and fruit." (Højby School 0.B, Appendix 7, line 52-53)*

Though the boy shows a positive *Attitude* towards buying lunch in the canteen, he still expresses his best lunch box element as rye bread. This is not consistent with the fact that he likes to buy warm food from the canteen such as Lasagne and Spaghetti Bolognese.

This is shown from the interviewers question regarding his preferences for lunch.

Interviewer 1: "What do you prefer to get in your lunch box?" (Appendix 7, line 41)

(11.)   Boy 2: "Rye bread, yes. My mom always put it in the lunch box. And I will always eat it" (Højby School 0.B, Appendix 7, line 42).

Through the *Practice* in context we see *engagements* as an essential role within the associated feelings regarding a given *Practice*.

The preschool children seemed to have different views or perspectives on what a healthy lunch should contain. These differences are shown in the following quotes.

Interviewer 1: "I would like to hear what is healthy in your lunch box?" (Appendix 6 & 9, line 29 & 16-17)

(12.)   Girl 1: "I think it is 'leverpostejsmad' with cucumbers on" (Højby School 0.A, Appendix 6, line 33)

(13.)   Girl 1: "'Spegepølse' " (Højby School 0.B, Appendix 9, line 18)

The interviewers were curious about the boy's favourite type of food. The following question below relates to their type of food.

Interviewer 1: "Can you tell us what you prefer to get in your lunch box? (Appendix 7 & 8, line 10 and line 12)

(14.)   Boy: "I really like 'Fiskefrikadeller' and chicken nuggets [...]" (Højby School 0.B, Appendix 8, line 13)

(15.)   Boy 1: "Æggemad".[...] 'Leverpostejsmad' and 'chokolademad'. Marshmallows also. [...] Sometimes I get toffees with." (Højby School 0.A, Appendix 7, line 11, 13)

A girl was asked about what type of food she prefers to get in her lunch box. She replied with the following answer:

Interviewer 1: "What do you then prefer to get in your lunch box?" (Appendix 9, line 132)

(16.)   Girl 2: "'Kødpølse'." (Højby School 0.B, Appendix 9, line 133)

Picture 5: Lunch box from a girl in 0.B at Højby School

Both boys and the girl seemed to have different opinions and preferences with regards to what they would prefer to have in their lunch box. *Picture 5* illustrates the girl's content of her lunch box. What is interesting is that none of them mentioned either fruit or vegetables, when they elaborated on their favourite type of food.

In relation to the abovementioned, the children were asked about their *Attitudes* towards the lunch box:

Interviewer 1: "Why do you like to bring a lunch box?" (Appendix 5, line 30)

(17.)   Girl 1: "Because, then I know it is something I like." (Højby School 0.B, Appendix 5, line 31)

Additionally another boy from 0.B at Højby School was asked about his appreciation of the lunch box. *Interviewer 1: "Are you happy about your lunch box?" (Appendix 7, line 20)*

(18.)   Boy 1: "Yes, sometimes especially today when I got 'chokoladestænger' in the lunch box [...]." (Højby School 0.A, Appendix 7, line 21)

The boy shows great satisfaction regarding the content of the lunch box. The statement above signifies the connection between home and school and illustrates the role of the food in relation to emotions and social relations. This is also highlighted in the quote below:

Interviewer 1: "[...] Can you tell us about the content of your lunch box?" (Appendix 4, line 40)

(19.)   Boy: "I had a banana and a sandwich. […] And a 'figenstang'. […]" (Højby School 0.B, Appendix 4, line 41, 44)

A mother to a boy in 0.B at Højby School was asked about her opinion regarding a healthy lunch. *Interviewer 1: "What do you think a healthy and filling lunch box should contain?" (Appendix 11, line 47)*

(20.)   Parent: "[…] He has always has a snack, it could be raisins, it could be 'figenstang', it can be nuts […]" (Højby School 0.B, Appendix 11, line 50-52)

This highlights the parent's priority in giving their children snacks. This is their way of expressing love and care for their children. Since they have a desire to add various snacks in order to satisfy their children's needs (Christensen 2003).

Practices

In this paragraph, we attempt to investigate which *Practices* that are carried out in the observed lunch break. Furthermore, we wish to examine the school children's and parent's *Practices* at home.

To get a comprehensive *understanding* of the abovementioned, the theoretical perspective practice theory will be applied throughout this part of the analysis.

According to Warde's *tripartition, Practices* can be perceived by applying three elements (Warde 2005):

1) *Understandings* 2) *Procedures* 3) *Engagements*

As claimed by Halkier (2013), *Practices* can furthermore be characterized by the processes of activities in everyday life, which are carried out in front of others (Halkier 2013).

In this section we will analyse the content of the following three elements, which have been identified through our lunch intervention:

1) *Understandings*
2) *Engagements*
3) *Procedures*

Understandings

Halkier & Jensen (2008) define *understandings* as "a practical understanding of what and how to take action, defined as *Knowledge* and know-how in broad sense" (Halkier & Jensen 2008)*.* As mentioned in the theoretical framework, knowledge and know-how can be perceived, as the *Knowledge* the human being possesses. This is explained as the practice one have in a given activity that cannot be passed on to others (Andersen 2015). This is illustrated in the execution of a specific practice, which is a result of one's *Knowledge* toward the *Practice*.

The main idea behind including documentation of the content of the current lunch box was to involve the parents in order to let them participate by taking actions in changing lunch habits to improve health and wellbeing of their children.

The documentation of the five elements (fruit and vegetables, fish, cold cuts and rye bread), the elements representing '*Madpakkehånden'* was written at the end of the intervention, to see if the content of the lunch box had changed (*Picture 6*). After teaching the children about '*Madpakkehånden*' they should be able to pass that *Knowledge* along to their parents.

Picture 6: A poster with the documentation of the children's content of each of the different element from Madpakkehånden

According to the documented elements from '*Madpakkehånden*' (*Picture 6*), fish and fruit were the elements with the least prevalence in the lunch box. Rye bread, cold cuts and vegetables made up the highest percentage.

The results from the poster (*Picture 6*) indicated a clear impression among the parents of what a healthy lunch box should consist of. Further it recognized rye bread, cold cuts and vegetables as the most occurring elements in the lunch box. These *Practises* can be a result of a habitual and experienced practice, wherein the parents have established a greater level of *Knowledge* in terms of the content of the lunch box. This is coherent with the theory concerning the factor *understanding* (Andersen 2015).

If one of the daily pieces of rye bread from the lunch box were with a fish product, the school children would quickly reach about half of the recommended amount of 200-300 grams of fish per week. In the focus group interviews, several children told us that their current lunch box included fish. The following quote illustrates this:

Interviewer 1: "If you look at the photograph can you tell us about the content of your lunch box?" (Appendix 5, line 43)

(21.)   *Girl 2: "Grapes and salami, cheese, carrots, mackerel and clementines" (Højby School 0.B, Appendix 5, line 44)*

Picture 7: Lunch box from a girl in 0.B at Højby School

At the end of the lunch intervention we had a focus group interview with two girls in order to see if their eating *Practices* had changed. In the interview a question was asked regarding the elements from

'Madpakkehånden' in order to see if the presence of the different elements varied. A girl told us about her lunch box:

Interviewer 1: "Every day?"(Appendix 9, line 53)

(22.)   Girl 1: *"Sometimes I get everything from '**Madpakkehånden'**. I get cucumber and rye bread daily"* (Højby School 0.B, Appendix 9, line 54)

Later in the interview she told us that fish was only included in the lunch box sometimes.

Throughout the focus group interview, there was a clear indication of what kind of food they would like to have in their lunch box.

Quote (18) and (19) suggests that the boys liked to have some kind of snack in his lunch box. The boys had different opinions and preferences regarding what they would prefer to have in their lunch box.

Two girls explained what their preferred lunch box should consist of:

Interviewer 1: "[…] Can you then tell us what you prefer to get in your lunch box?" (Appendix 5, line 15-16)

(23.)   Girl 1: *"Leftovers from our dinner […]" (Højby School 0.B, Appendix 5, line 17)*
(24.)   Girl 2: *"I like to have ham and 'chokolademad' […], a 'ostehaps' and a Babybel (cheese)" (Højby School 0.A, Appendix 6, line 77)*

The two girls explained what they see as their favourite choice concerning the content of the lunch box.

Through interviews, pictures and the observation, distinct differences in the school children's preferences appeared, regarding the content of the lunch box just like the major variation in the children's lunch box brought from home. Even though the pictures showed a great variation in the lunch box, children still seemed to have some limited lunch preferences (*Picture **5** & Picture **7***). Additionally the children's preferences did not appear to change after the intervention, since the same elements seem to reappear, where the most predominant was rye bread and cold cuts. This can contribute an occurrence of challenges with regards to the children's preferences for specific food.

Additionally, on the basis of the focus group interviews and the pictures taken by the preschool children, there seemed to be a clear indication that among the content of the lunch box rye bread is still the most occurring and popular element (*Picture **7** & Picture **8***).

Picture 8: Lunch box from a boy in 0.B at Højby School

Engagement & procedures

Warde (2005) defines *engagement* and *procedures* as terms, which indicate a person's own motives towards completing a given activity, which depends on the emotions attached to the performance. *Procedures* cover both written and unwritten rules that apply to the execution of a given practice (Andersen 2015).

An example of *engagement* related to the school children, was the importance of the social interaction during lunch break.

The lunch break was divided into two parts. The first part of the lunch break the children were sitting together with teachers and pedagogues in the canteen and ate lunch (10:40-11:30 approximately). The second lunch break was where the children were sitting in the classroom with a teacher or a pedagogue listening to storytelling or watching a movie (Appendix 25).

During the interview several children expressed a desire to eat with certain classmates during lunch break as the best way to eat lunch. A statement from two of the girls:

Interviewer 1: "What is the best way to eat your lunch box?" (Appendix 5, line 59)

(25.)   *Girl 2: "B…. It is because we have a heart and a necklace and because it says best friends forever on the necklace. And then we have a heart on our school backpack" (Højby School 0.B, Appendix 5, line 60-61)*

Interviewer 1: "Regarding eating your lunch box at school, is there anything in particular which makes it right to eat it in the lunch break?"(Appendix 9, line 59-60)

(26.) Girl 2: "Friends. And we plan together, and we all decide what to do "(Højby School 0.B, Appendix 9, line 59-60)

Sitting next to a friend seemed to be of great value to the children. To many children eating together and the opportunity for playing and talking during lunch break is important. This can also be related to the theoretical framework (Paragraph 2.8.1). In the focus group interview, noteworthy *engagement* was observed among the children, when they referred to the importance of eating and being with friends. This had a huge impact on behaviour and wellbeing in the lunch break.

Interviewer 1:"During the lunch breaks? Do you sometimes have permission to decide yourself what you want to do during lunch break?" (Appendix 9, line 63)

(27.) Girl 2: "We are allowed to talk together about what we can do outside during the break, and who we can play with […]" (Højby School 0.B, Appendix 9, line 64-65)

This revealed the children's appreciation of partaking and having more freedom during lunch break compared to normal.

At Højby School the two classes 0.A and 0.B were sitting together in the canteen separately, but also in small groups as they were currently sitting at tables with four to five other classmates (Appendix 25). Sometimes they were sitting in the classroom while watching a movie or listening to a story during lunch. As one girl mentioned during the interview:

Interviewer 1: If you were to tell us about how you eat your lunch box at school, how would it be? (Appendix 5, line 32)

(28.) Girl 1: "When we have music we are sitting in the classroom, but when we do not have music we are sitting in the canteen" (Højby School 0.B, Appendix 5, line 33-34)

At most Danish schools, there is no special room for children to eat their lunch; however there might be a small canteen. The eating part mostly takes place in a classroom (Høyrup & Nielsen 2012).

Storytelling is a part of the lunch situation at Højby School when the preschool children sit in the classroom:

Interviewer 1: "Play in the classroom?"(Appendix 9, line 72)

(29.)   Girl 1: "Yes. And sometimes we get a story told and such while we eat lunch. And we also got a story today" (Højby School 0.B, Appendix 9, line 73-74).

Eating and social interaction are strongly connected, and therefore the preschool children find it natural and desirable to interact during lunch, which makes it hard not to talk while eating (Appendix 25).

The social dimension during the lunch seemed to have an essential role among the school children. According to Holm (2012) sociality is a central element when gathering the family: 'Meals do family (Holm 2012). Similarly the school children highlighted the lunch meal as a possibility to interact socially with others. This is coherent with the theoretical framework (Paragraph 2.8.1), where Holm (2012) explains that food and meals are important elements in the organization of the fellowship between people (Holm 2012).

The main focus of the observation was to observe the role of the teachers and how they interacted with school children in relation to the lunch break, and the children's *Practices* during lunch.

During a school day, teachers are the adults who mainly interact with school children and are in the highest position to influence the health behaviors of the children (Bandura, Ross & Ross 1961).

Based on observations of a current lunch situation it was clear to us that the teachers interacted with the children during lunch. The two preschool teachers turned the school lunch into a social occasion by using conversations and dialogue, and thus had a high level of interaction with children while eating lunch (Appendix 25).

The teachers were helping and encouraging the children to help themselves and asked about the content of the lunch box (i.e. number of fruits in the lunch box), and strived to educate them in general and about the importance of a healthy lunch in particular (Appendix 25).

During the observation of the lunch break at Højby School, it was noticed that one of the teachers commented on the quantity of fruit among the children. She was creating a dialogue about the children's content of their lunch box, where all the children participated actively and explained their lunch box content (Appendix 25).

One of the teachers walked around and made sure that all children were eating their lunch and if not, the role of the teacher was to influence the children to eat their lunch box and tell them that they needed to get energy and feel full (Appendix 25). The teacher saw the food as valuable, and therefore it was important that the lunch box was eaten and not wasted (Appendix 25).

Several norms, routines and rules were observed in the lunch situation, which will be elaborated further below.

The teachers made sure that the children were having calm and a quiet dialogue around the table with their classmates and the children were told how to behave while eating their lunch box (Appendix 25). Allocated seats were given by the teacher, and before lunch the children had to wash their hands and were not allowed to leave before getting permission from the teachers (Appendix 25).

In respect to the three roles of the teacher defined by Osowski, Göranzon and Fjellström (2013), the analysis is coherent with the fact that we characterize the two teachers at Højby School as being educational and sociable during lunch (Paragraph 2.8.3)

There was a good atmosphere between teacher and children; they were smiling and joking while eating lunch (Appendix 25).

Table manners at schools are not only regarded as a basic element of socialization that can take place during lunch break in the school context, but can be related to unspoken rules stated at home as well (Andersen 2015).

At home, the lunch box preparation can be used as a situation where the parents have the opportunity to educate their children regarding food, cooking and health while at the same time being role models for their children.

According to the lunch *Practices* and *Practices* at home, a general picture in Denmark is that women make most of the daily lunch boxes (Landbrug & Fødevarer 2012). This is also in accordance with a previous study, which revealed that the mothers seem to have a greater impact on their children's eating behaviour compared to the fathers (Scaglioni, Salvioni & Galimberti 2008). This is due to more regular interaction between the children and the mothers (Scaglioni, Salvioni & Galimberti 2008).

Interviewer 1: "Who makes the lunch box at your home?" (Appendix 10, line 17)

As one of the parents mentioned:

(30.)   *Parents: "We both do and sometimes if we can entice the children, they are also involved" (Højby School 0.B, Appendix 10, line 18-19)*

From both interviews with parents and focus group interviews with school children, it gave an overall picture of more children being involved when making their lunch box. The parents seemed to have a high *engagement* for creating a healthy, colourful and appetizing lunch box for their children.

7.3.2. PARENTS

Considering parent's important role in the wellbeing of their children, it is essential to explore their *Attitudes* and *Knowledge* regarding lunch in general. In this paragraph we will relate the findings from our semi-structured interviews with the parents along with elements from KAP. Additionally, the opportunities and challenges regarding the preparation of a lunch box will be elaborated further.

Knowledge and Attitudes

Knowledge is defined by FAO (2014), as the *Knowledge* an individual possess on a given topic, and the understanding of nutrition and ability to recall food (FAO 2014). In this paragraph, we delve into the level of *Knowledge* the parents possess regarding *a healthy* and *filling* lunch and their health perspective. Furthermore, this paragraph will provide an insight into the parent's *Attitudes*, and identify challenges and opportunities when making the lunch box. *Attitudes* are defined as emotions and motivation with the opportunity to influence the behaviour.

The increased focus on health and the importance of living a healthy lifestyle is observed through the interviews, where the parents allocated great value to health, regarding their children. The children become a motivational factor for the parents to live healthy. Health is therefore an important part of the family's everyday life. This becomes apparent in the following quote:

Interviewer 1: "[…] Are you interested in getting even healthier lunch habits perhaps mostly for your children?"(Appendix 10, line 90-91)

(31.)   *Parent: "Well I actually think we have done quite a lot regarding obtaining healthy lunch habits and try to make some good and tasty lunch boxes […]" (Højby School 0.B, Appendix 10, line 92-93).*

Overall, parents play the biggest role in their children's lunch habits by influencing the children's familiarity and preferences for fruit, vegetables, whole grain, fish and cold cuts. This is done, by controlling their availability, accessibility and exposure to those food elements, which represent a healthy lunch. The children's consumption of these foods emerges from their developed food preferences, food availability and accessibility (Sweitzer et al. 2010).

Lunch becomes an important opportunity for parents to increase the child's exposure to the elements of a healthy lunch.

It was apparent among the parents, that there was a perception that rye bread was a healthy lunch option for their children. From the interviews, there seemed to be a link between the nutritional *Knowledge* of parents and healthy lunch intake of their children (rye bread, vegetables & fruit).

General terms of the recommended dietary guidelines and '***Fuldkornslogoet***' and '***Nøglehulsmærket***', was referred to as something obvious and implicit when it comes to a healthy lifestyle.

A mother expressed:

*Interviewer 1: "[…] Have you heard about '**Fuldkornslogoet**' […]?"(Appendix 10, line 71-72)*

(32.) "Yes, I have been following it and tried to buy everything with '**Fuldkornslogoet**' and '**Nøglehulsmærket**'" (Højby School 0.B, Appendix 10, line 80-81)

The families' eating habits were controlled by what they thought a good and healthy lunch consisted. The food should taste good, be easy to eat, look appealing and be filling for their children. Everything was thought through, in a coherent conception of the good lunch. A mother responded:

Interviewer 1: "What is a good lunch box?" (Appendix 11, line 7)

(33.) *Parent: "Yes, what is a good lunch? It should be one that I like; it is one that is easy for the children to get on the road while it should be filling. That is basically the most important thing for me. That he is eating it. He should not have anything he does not want to eat" (Højby School 0.B, Appendix 11, line 8-10)*

During the interview we realized that the parents had no problem applying their health *Knowledge* to *Practices*, by implementing rye bread, cold cuts and vegetables in the lunch box.

On the basis of our predefined preconception of the parent's limited *Knowledge* about what a healthy and filling lunch box should contain, the parents disproved this preconception.

Since parents are the ones responsible for their children's health, they were asked about their appreciation for the lunch box as well as the importance of the lunch box where they explained the following:

Interviewer 1: "[…] Can you explain why the lunch box is important for your child?"(Appendix 10, line 39)

(34.)   *Parent: "It is because you know even if you do not get some food in your body you lose energy and the stomach begins to rumble and it becomes difficult to concentrate so I hold very strongly to they eat what they have in their lunch box and eat breakfast" (Højby School 0.B, Appendix 10, line 40-43)*

This quote (34) clearly states that the parents see the lunch box as highly important and therefore prioritize it. If the children are hungry during the school day, they will loose their concentration.

Additionally this sentence showed that health is regarded as important and the lunch represents a crucial norm. It is a parental responsibility to ensure that their children are provided with food during the school day.

According to the interviews, the parents agreed that nutritional education needs to come from the parents and healthy eating should begin at home.

Health in the form of a nutritionally balanced lunch for their children was important for both families. To further illustrate the *Attitudes* to healthy food, they were also asked a direct question about whether they were interested in getting healthier lunch habits.

As one mother responded:

Interviewer 1: "[…] Are you interested in getting healthier lunch habits for your child?"(Appendix 11, line 62)

(35.)   *Parent: "[…] Yes. He has fish in his daily lunch box, he has cold cuts, and the most unhealthy in his lunch box is a piece of rye bread with dark chocolate and only one "(Højby School 0.B, Appendix 11, line 63-65).*

After this she told us that she liked the new alternatives we in collaboration with the children have made for the lunch box, but overall she was satisfied with the content of her child's current lunch box.

(36.)   *Parent: "I probably never would have thought of it otherwise…so I think his lunch is okay. I am really happy with it" (Højby School 0.B, Appendix 11, line 69-70)*

From the interview it was possible to see that two of the parents had intentions to try new initiatives in the lunch box. As one mother said:

Interviewer 1: "[…] Which opportunities and challenges do you sometimes experience when you have to make the lunch box?"(Appendix 10, line 46-47)

(37.) *Parent: "Yes. The variation. I would really like to bake some delicious 'rugbrødshapser' and some 'pizzasnegle' and everything else. But. Now we have just seen those things they look really great. Super tasty yes. However they just do not like it" (Højby School 0.B, Appendix 10, line 50-52)*

(38.) Parent: *"It is just hard. But some of the things we try again and again. But something like 'pizzasnegle'. If you bake them the day before well, then it becomes a little dry in the lunch box when it is in the fridge" (Højby School 0.B, Appendix 10, line 54-56)*

From these quotes (37) and (38) it can be stated that the parents have intentions of making a change in the lunch box by implementing new elements, but their children do not always like it. The parents expressed difficulties introducing new foods to children because the children do not want to try them.

Opportunities and challenges

Several issues were raised through the interview with three parents from Højby School. This included *'opportunities and challenges'* when making the lunch box for their children, especially the indicators **variation** and **picky eating** among the children, which will be examined further in this section.

The interviewer asked the parents about what **opportunities** and **challenges** they saw regarding making the lunch box for their children and they replied with the following answer:

Interviewer 1: "[…] *Which opportunities and challenges do you sometimes experience when you have to make the lunch box*?"(Appendix 10 & 11, line 46-47 & 33-34)

(39.) *Parent: "Cold cuts. There is not really that many things they like. And also the variation" (Højby School 0.B, Appendix 10, line 48)*

(40.) *Parent: "The variation. […] It is most definitely the biggest. […] Especially cold cuts." (Højby School 0.B, Appendix 11, line 35, 37, 41)*

Here the parents noted that the variation in the lunch box was lacking due to the children's picky eating. However, when looking at the children's pictures of their lunch box and as explained earlier there was actually a big variation in the lunch box. And as the parents mentioned in quote (39) and (40) the **cold cuts** are the biggest obstacle within the variation. The parents elaborated further that they are quite keen to make alternative food to their children instead of just using rye bread over and over again.

It became clear that the parents were eager to make an effort when trying to make healthy snacks for their children. This shows that the parents are aware of both their children's likes and dislikes regarding food and

are still keen to try and change their children's lunch preferences (Hausner 2013). The parents pointed out that the exposure to new food among children is a challenge and it will demand multiple exposures, in which they are also trying and can be seen from the question at page 74.

(41.)   Parent: "[…] *But some of the things we try again and again*" (Højby School 0.B, Appendix 10, line 54)

The reluctance to try new or different food characterized the **food neophobia** and is reflected onto the **children's behaviour** and from parent's view this would be seen as a **disadvantage**. This would unfold in that way where it might have an effect on the eating patterns in the family just as this would have an effect on the food intake. It clearly makes it a **challenge** when making their children's lunch box for either school or kindergarten.

Both sets of parents mentioned the variation as a limiting factor. From the children's perspective it means **less variety** in the content of their lunch box. However the parents are still trying to make as much variety as possibleThe parents were keen and eager to make an effort to try and diminish the level of food neophobia among their children.

Quote (37) refers to a parent event held at the 25th of February where the children participated in the making of alternative snacks in the school kitchen. We observed them in the kitchen, where the children expressed their satisfaction with making these healthy snacks. *Picture **9*** and *Picture **10*** taken during the parent event illustrate the results from the kitchen activities with the school children. However when it then came to tasting these new and healthy snacks it clearly showed the children's picky eating and fear of tasting new food. The parents were attentive to this and commented on it during the interview (Quote 37).

Picture 9: Spinatsnegle made by the preschool children from Højby School

Picture 10: Broccoli-cheese toppe made by the preschool children from Højby School

Cold cuts are seen as the **main problem** regarding the variation of the content of their children's lunch box. However there seemed to be some **opportunities** concerning the content of the lunch box such as switching out the rye bread, fruits and vegetables. This was noticed during the interview:

(42.) Parent: *"The middle child, she likes different types of rye bread" (Højby School 0.B, Appendix 10, line 60)*

As mentioned earlier in paragraph 2.7, one of the most popular elements in the lunch box was rye bread. According to adults, rye bread is the most appropriate type of bread for their children (Jakobsen 2012).

This shows a **potential option** for creating more variation in the content of the lunch box concerning the rye bread. Another potential element to vary is the fruit and vegetables.

The interviewer asked the parents whether they believed it is important to have fruit and vegetables daily in the lunch box, where they explained the following in quote (43):

Interviewer 1: […] "Do you think it is important to get fruit and vegetables daily in the lunch box? (Appendix 10, line 82-83)

(43.) Parent: *"Yes. And when I do not put it in the lunch box, the girls come home and say they would like to have it in their lunch box again, since it is lacking in colour and fun […]" (Højby School 0.B, Appendix 10, line 84-85)*

Fruit and vegetables are added to the lunch box specifically to add more colours and variation to the lunch box (Quote 43). Both are highly recommended as a snack or an in between meal. A variation could be to use it as a **substitute for cold cuts** (Fødevarestyrelsen n.d.a).

In this upcoming section, the first part covers the **key findings** from the lunch intervention, which will be discussed in conjunction with other relevant literature within the same subject (Paragraph 8.1). The second part covers the **Public Health Nutrition approach**, which will be elaborated further in paragraph 8.2. The last part covers a sum up of the applied **theoretical** and **methodological approach** as well as a discussion of the strengths and weaknesses of the various approaches (Paragraph 8.3 & 8.4).

8.1. SUMMARY OF KEY FINDINGS

The **children** seemed to have a common understanding of what a healthy lunch box should contain and link it to the five elements from *'Madpakkehånden'*, but had different views on health in general by referring to various foods they considered healthy. This could describe the children's ability to relate to a healthy lunch, by covering a varied composition of foods in relation to the lunch box. Meanwhile, the quantitative results from the knowledge-based quiz showed a surprisingly great *Knowledge* about what the children had learned during the lunch intervention from the teaching regarding '*Madpakkehånden*'.

The analysis showed that the health perception of the **parents** was of high importance in their everyday life. In the interviews, the parents noted that they had the primary responsibility of ensuring that their children get adequate nutrition through their lunch box. The situation might have been different with other parents compared to the ones we recruited; it could have been interesting to interview parents who showed less interest in the lunch intervention.

The parent's *Knowledge* of nutrition, eating *Attitudes* and *Practices* shape what foods the child is eating, the parents control timing, size and the social context of meal and snacks (Birch & Fisher 1998). The parents were aware that they played a key role in their child's health and eating habits. This corresponds well with known literature (Birch & Fischer 1998), where the parents are shaping the children's eating *Practices* through a family eating environment, which provides a context for the children's early eating experience (Birch & Fisher 1998).

School children seemed to value their lunch box as good and healthy, as nearly two out of three regarded it as healthy (FDB 2012). The observation of a lunch situation at Højby School showed that all the **children** finished their lunch box brought from home. This can be seen as an indication of children valuing their lunch box as good and healthy (Appendix 26).

Only few of the children mentioned the importance of having the opportunity to buy lunch in the canteen, however from our perspective the available options in the canteen did not appear to be healthy in general.

Several of the children appreciated the content of their lunch box, trusting their parents to prepare food they preferred.

Over the past years, children's role has been characterized as consumers of school meals since more and more schools are implementing school meals. It is therefore essential to understand the children's view and perspectives on what a good lunch should contain (Bruselius-Jensen 2013).

Children can have different perspectives on what a good or bad meal would contain and can imitate their parent's eating behavior and to a certain degree their *Attitude*s towards food (Bruselius-Jensen 2013). Additionally the parents are influencing their children's eating behavior just like their *Attitudes* towards food (Brown & Ogden 2004, Wardle 1995).

A previous study showed that the lunch box is still seen as a high priority, especially among families with children. 75 % of the children are eating lunch boxes brought from home and are therefore seen as the most common type within a food arrangement (Landbrug & Fødevarer 2014). Moreover a study made by FDB (2012) showed similar results, where lunch boxes continues to be the preferred option in the lunch break in the country's schools. Since 86 % of school children get a lunch box from home (FDB 2012).

According to interviews with **parents**, it was clear that there were common perceptions that rye bread is a healthy lunch choice for their children and that the lunch box still is seen as a high priority. The parents prepared the lunch based on their opinion on what a good and healthy lunch box consists of; tasty, be easy to eat, look appealing and be filling for their children (Appendix 10 & 11).

In general the parents seemed to have a narrow view on the healthy choices for the lunch box. For example rye bread seemed to be the standard foundation in a Danish lunch box, even though plenty alternatives for the lunch box exist on the market.

According to '*Madpakkeundersøgelsen*' made by the Danish Agriculture and Food, the parents shared the same opinion as the majority of Danes, and what is of greatest importance is that the lunch box must taste good and be healthy (Landbrug & Fødevarer 2012).

A theme, which was raised during the analysis, was a common understanding from the teachers and parents that the lunch box was seen as an important meal during the day. This indicated that the lunch box had the ability to link school and home (Christensen 2003, Metcalfe et al. 2008). The lunch box is not only a matter of food, but symbolizes a matter of care and love expressed through the lunch box (Metcalfe et al. 2008).

Overall a higher intake of fruit and vegetables in general reduce the children's risk of obesity and prevent diseases later on in life (WHO 2014). Fish and fruit can easily be included in the lunch box; fish can be kept separate in a small separate box and can be opened during lunchtime, to avoid smell from the lunch box. During long school days healthy snacks are needed. It can for example be fruit (Politiken 2014).

An interesting observation from focus group interviews was that some of the children did not emphasize fruit and vegetables in the lunch box. To make it easier for preschool children to consume fruit and vegetables it could be an idea to cut them into smaller pieces. By cutting the fruit and vegetables and reducing the portion size, might make food more manageable for the children and increase the children's likelihood of eating it.

By getting the children to participate in the preparation of their lunch box, it can create a feeling of ownership. It can result in more openness toward trying new elements in the lunch box (Politiken 2014).

Based on the observation, the role of the head teachers of the classes (0.A and 0.B) had a great impact on the children's behavior during the lunch break, by making the lunch break a social and educational learning situation (Appendix 26). When consuming the lunch together in the canteen it encouraged the teachers to establish a dialogue about food and meals.

The observation showed a lunch situation with certain norms and routines but still familiar, which opened up for commensality around the lunch. This commensality seemed to be highly essential for both classes in its entirety, but at the same time it also applied to each individual, hereby creating a sense of commensality.

Based on the theoretical framework we found it important that teachers and school children were interacting with each other during the lunch meal and the fact that the interaction could play an important role in the school children's learning process and individual development. According to Patino-Fernandez et al. (2013), the teachers' role is valued as important since they can act as role models for the school children during lunch (Patino-Fernandez et al. 2013).

The analysis showed that a common lunch break at Højby School normally was divided in two parts, where the first one took place in the canteen and the last part occurred in the classroom with storytelling from either a teacher or a pedagogue.

In the Danish primary school, the lunch meal for preschool children takes place in the classroom with a distinct adult role of the teacher, for example through storytelling (Høyrup & Nielsen 2012).

An interesting picture emerged from the *Practices* at home, where both men and women stressed the fact that they were the primary ones making the lunch box with involvement from the children. The task of making the lunch box at home opened up to conversations about lunch habits and health, and the children learned to decide what constituted an appropriate lunch. The parents could hereby establish good eating habits at an early stage, which might continue throughout life and create wellbeing for their children.

Both men and women think that they should be included in the preparation of the lunch, which is shown by results from Danish Agriculture and Food (Landbrug & Fødevarer 2012). The rest are made by children and along with parents. An analysis dealing with *'children and their lunch boxes'* concluded that most often the lunch box is made by the mother, next up is the children itself and lastly the father (FDB 2012).

According to a new analysis from February 2015, an increasing trend was seen around the involvement of children in cooking. The children are relatively often participating in the kitchen duties, and for 43 % of the families with children they stated that their children are in the kitchen at least once a week (Landbrug & Fødevarer 2015). According to the parents, it is not a duty to include children in shopping and preparing food, but 83% of the parents concluded that they enjoyed themselves when the children contributed to the preparation of food (Madkulturen 2014).

The parents expressed how challenging it was for them to expose their children to new types of cold cuts, and explained in that context how they perceived picky eating around their children. In this manner the expansion of the lunch box seemed challenging. Despite this, the parents are still trying to expose their children to new and healthy lunch options.

According to the theoretical framework presented in this thesis, lack of preferences for novel foods among children could be due to less exposure to novel foods either from home or at school (Sansolios & Mikkelsen 2013, Wardle & Cooke 2008). Research has shown that neophobia can be reduced through repeated exposure to novel foods (Birch & Fischer 1998).

Even though the children showed a great satisfaction in the kitchen when preparing the healthy alternatives for their parents, by showing excitement and curiosity, and by participating in as many tasks as possible, the children showed no willingness toward trying the new food. However, the new alternatives *'spinatsnegle'* and *'pølsehorn'* were the most popular ones from the children's view.

Establishment of high intensity in the lunch intervention

The strategy *high intensity* was used as a tool to determine the lunch intervention's overall efficiency. The decision on whether the intervention reached *high intensity* was dependent on how each of the six different characteristics were valued according to either high, medium or low. When reflecting upon the lunch intervention and considering the six different characteristics, they were ranged from low - high. The level of intensity can determine whether the intervention to some degree has increased the opportunity to establish a change in the lunch habits of the chosen target group, families with school children.

The *Supersetting approach* was applied throughout the intervention. This approach ensured participation from multiple stakeholders, which then influenced the possibility of achieving *high intensity*. One of the aims of the lunch intervention was to establish a *high intensity* by analyzing on the individual (personal) level by measuring the *Knowledge* of each child in two preschool classes at Højby School. This was done by conducting a knowledge-based quiz at baseline and in the end of the intervention. At a social (interpersonal) level we carried out several activities as a part of the intervention.

The intervention attempted to involve children and parents. However the performance of the intervention showed an inadequate involvement from the parents. The accomplishment of approaching both target groups therefore seemed unachievable.

The teachers expressed their overall opinion about the lunch intervention through the evaluation, where they valued the intervention at *high intensity*. This is seen through their satisfaction of the overall outcome of the lunch intervention (Appendix 12). Despite that, we only valued the lunch intervention as having medium intensity derived from how we perceived the success of the implementation of the lunch intervention. This could also be explained from the allocation of the values (high, medium or low) assigned to each of the six characteristics as well as the overall evaluation of the lunch intervention.

A way to establish *high intensity* and minimize eventual flaws during the intervention could be to only choose one setting, compared to the three selected settings. Additionally, with the choice of having only one setting could facilitate the involvement of the parents.

The intervention was carried out with the support from local resources from the local community. Based on previous experiences from project SoL, interventions should normally be carried out with limited financial resources, with the aim of integrating the project in both local institutions and organizations (Anon n.d.). Besides this, the *Supersetting approach* builds upon the valued resources embedded in the local

community (Steno Diabetes Center 2014). Further these limited resources will simplify the repetition of the intervention as well as making it possible to implement it in other parts of the country.

8.2. DISCUSSION OF PUBLIC HEALTH NUTRITION (PHN) APPROACH

The lunch intervention was based on the *Supersetting approach*, where an overall goal was defined in the beginning of the planning phase and then different planned activities were carried out in different settings in the local community Højby.

The intervention involved a variety of relevant stakeholders such as the teachers, supermarket and the Mass Media (Paragraph 3.1). In order for the intervention to succeed important stakeholders were gathered to a startup meeting where we as researchers along with SoL- researchers discussed ideas with the teachers and the local supermarket (SuperBrugsen).

By creating a mutual understanding of what activities to carry out, we discussed how to involve the school children and their parents in the lunch intervention based on each of the stakeholder's background and competences (Paragraph 2.3). We experienced a challenge when agreeing upon what activities to carry out. We had a goal, and to reach that specific goal we established specified planned activities before the start of the intervention. However we realized that we had to have a plan b in mind, because not all planned activities were realistic to implement in the intervention (*Table 6*).

The teachers and the supermarket also had to agree on how to involve the children and the parents in the best possible way in order to achieve the aim of the intervention. After the intervention we realized that we could have included the teachers in a better manner, in order to make use of their experiences. Due to the fact that the teachers were the ones with the most experience within the age group, and had an opinion about which activities needed to be revised as well as which was possible to plan and execute during the intervention.

We included the **school children** with the aim of involving them in the lunch intervention by making a **lunch box workshop** in the supermarket setting. Here the children were able to prepare their own lunch box based on their own perception to a healthy lunch box. To create a sort of motivation among the children they were responsible for preparing their own lunch box. The concept of this event was to promote **empowerment** for the children, since they based the lunch box made in the supermarket on their own *Attitudes* and *Knowledge* towards what a healthy lunch box should consist of. In this way they might broaden their *understanding* and *Knowledge* of what a healthy lunch box consisted of and carry it out into practice in the supermarket.

To achieve synergistic effects, relevant actors needed to be included in a lesser or a greater extent and the planned activities should be carried out in a variety of settings, including both the school setting and supermarket setting. This was done in order to obtain a better chance for influencing the children and their parents towards establishing healthier lunch habits.

For the **teaching session,** our main idea was to plan the level of teaching, and how to differentiate and balance breaks and hands-on activities in collaboration with the teachers. However, due to lack of time it was not possible to send out the teaching material.

The parents and the children were involved in the **parent event** were a large number of parents participated. Our intention was to establish a close contact with the parents, and meanwhile motivate and inspire them to improve their children's lunch habits. However, we were not able to establish such a close contact. One explanation could be that the parents were more attentive towards their children, since the children were the ones presenting the new and healthier alternatives to the lunch box. The children were given ownership for that particular reason, where they were able to make the parents proud of them.

We were not able to create a dialogue with the parents, since we were not able to step out of the "researcher role" as well as having a strict program planned.

Picture 11: Children making lunch box with their parents

Table 6 shows the contingencies in the event of possible problems during and after the intervention. These possible problems have been clarified for future considerations to take into account, when implementing

an intervention. Before the performance of the intervention, we tried to anticipate what kind of risk factors to take into consideration as well as what kind of problems could occur by such an intervention.

Table 6: Contingencies

Analysis of possible problems		
Possible problems	**Measures that reduce the risk of the problem occurring**	**Measures to reduce the consequences of a problem**
Lack of motivation to participate from teachers.	Explain the purpose/outcome for the stakeholders.	Make some activities, which will benefit each of the teachers in the end.
Lack of involvement from parents.	Explain what the parents can achieve/gain • Healthier lunch habits • Inspiration to make lunch box	Involve them in the intervention. Ask for volunteers.
Breach of communication.	Maintain regular contact with stakeholders involved.	Work with establishing a better communication structure.
Inadequate planning and communication.	Find a common goal and create a detailed action plan.	Realistic plan of activities and future needs for volunteers.
Lack of time for intervention.	Make realistic targets.	Open for changes and reschedule the intervention.
Different expectations.	Plan a + b. Be open to new approaches.	Willing to adapt to new changes.
Injuries or sickness during the intervention.	Sufficient amount of volunteers during the intervention. Presence of an aid kit	Responsible for specific areas - pay attention to problems.
Lack of participants.	Organize activities, which will benefit both children and their parents.	Assessment of the needs for number of participants. Have a plan a + b.

Willingness to participate in the intervention from local actors.	Create benefits and opportunities for the local stakeholders.	Have other contacts in the local community.
Distributes of tasks.	Detailed schedule with time and activities.	Be available when necessary.

Evaluation

The purpose of applying an evaluation program was to obtain information from relevant actors, such as parents and teachers, to explore whether the intervention and the planned elements has reached its intended goals and purposes (Appendices 14-15).

During the lunch intervention, we were attentive to the great commitment from the parents by showing a large attendance at the parent event. However the feedback from the parents regarding the evaluation of the lunch intervention revealed a low response rate. The ratings from the evaluation (*Figure 14*) revealed an overall satisfaction concerning the parent event. The comments attached to the evaluation scheme from the parents implied that the parent event in general turned out to be a great initiative (Appendix 15).

The parents gained new inspiration to alternatives to the lunch box, and in addition several parents were trying to change the content of the children's lunch box. A small portion of the parents saw it as a challenge to expose their children to new food and therefore gained less benefit from the parent event.

The high rate of the topic *Involvement of the children* can be explained by the parent's pleasure of seeing their children having the main responsibility for preparing and presenting the food, as well as teaching their parents about what a healthy lunch box needed to contain (*Picture 11*).
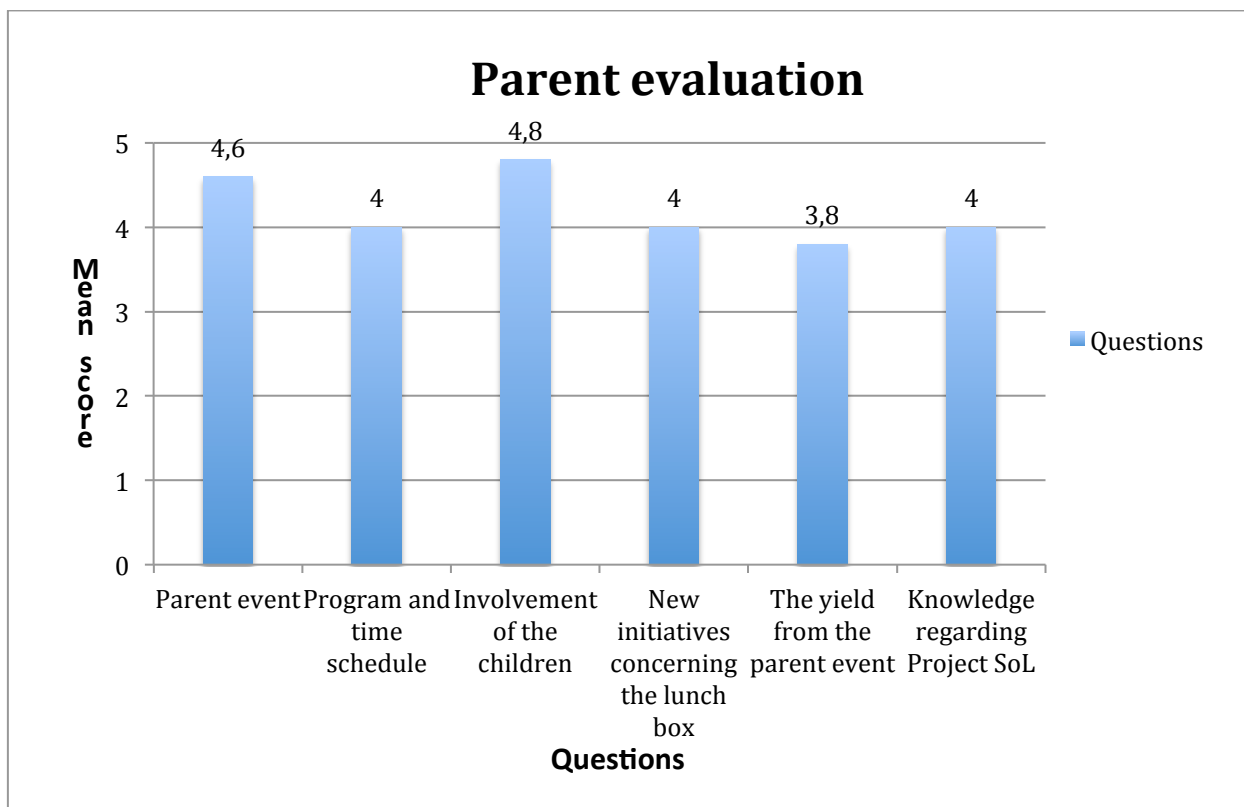
Figure 14: The rating of the questions from the parent evaluation shown by the mean score

Moreover, the parents seemed pleased with getting a folder of recipes to bring home.

The teachers expressed their view on their *engagement* in the lunch intervention, both in developing and implementing the intervention. This was shown through the evaluation with the teachers (Appendix 12), where the teachers stressed their lack of involvement and integration. With respects to their background, experience and values concerning working with children in practice, their competences were not incorporated to a greater extent. This is in compliance with the factor *Integration*, which is characterized in the *Supersetting approach* (Bloch et al. 2014). The teachers were not completely satisfied with the how the activities were planned (Appendix 12).

Several communication issues appeared during the planning and implementation phase of the lunch intervention, since the communication primarily happened through email correspondence. This showed that the planning phase of the intervention was not concretized enough, which is coherent with the fact that the teachers suggested more meetings for the planning of the intervention. However the teachers were grateful for being part of Project SoL and the establishment of focus on the children's lunch habits (Appendix 12).

The teachers were highlighting the importance of the lunch intervention. It established some **opportunities** for the teachers to discuss the content of the lunch box with the children. Additionally it created more curiosity among the preschool children about a healthy lunch and '***Madpakkehånden***'. It was anticipated also to evaluate the parents view on the lunch box workshop held in the third setting, the local shopping mall in Asnæs by project SoL (Paragraph 3.2.3), with the intended purpose of comparing the three setting against each other. Though, this anticipation showed to be intricate, since the information turned out not to be fully communicated through to the parents. Here again communication showed to be an important factor within the planning of an activity.

8.3. DISCUSSION OF THEORETICAL APPROACH

The following paragraph will discuss the strength and weaknesses of the applied theory of *KAP* and practice theory.

8.3.1. KNOWLEDGE, ATTITUDES AND PRACTICES (KAP)

In the following paragraph we will reflect upon the strengths and weaknesses concerning the applied theory KAP and how it has been used in the thesis.

KAP has been applied as a theoretical framework with the purpose of investigating the children's *Knowledge* and *Attitudes* towards a healthy lunch, additionally to examine the parent's *Knowledge* and *Attitudes* towards a healthy lunch. KAP is also used in this study helping to determine the existing *Knowledge*, *Attitudes* and *Practices* in relation to lunch**.**

KAP can be used for investigating human behaviour and within developing or evaluating a program or intervention, people's mindset and behaviour must always be the first step. Therefore KAP survey is seen as an advantage as well as a useful tool (Vandamme 2009).

Since KAP is only used within social research particularly in family planning research, this is seen as a limitation when applying KAP as a theoretical background. Additionally another limitation could be the absence of a clear methodology, which could be applied when performing and developing KAP surveys. KAP surveys will be more suitable as a conceptual framework when analysing human behaviour and its impact on specific actions and interventions (Vandamme 2009).

When assessing nutritional-related *Knowledge*, *Attitudes* and *Practices*, it provides an opportunity for understanding a given situation by allowing insight into behavioural determinants of nutritional status (FAO 2014).

8.3.2. PRACTICE THEORY

In the following paragraph we will reflect upon the strengths and weaknesses concerning the applied theory practice theory.

Practice theory has been applied with the primary purpose of investigating children's lunch *Practices* in connection with the lunch break and *Practices* at home. By working in a school setting with children, we were not familiar with other researchers who have applied practice theory into social and practical aspect of the lunch.

In order to estimate the children practices, we have been forced to apply the three elements defined by Warde (2005) 1) *Understandings* 2) *Procedures* 3) *Engagements* (Warde 2005). By using Warde's theoretical perspective and his key concepts, we perceive his interpretation as a helpful tool for gaining insight into the children's *Practices*. *Understanding* has in this school setting with children functioned as what and how to take action, and can equivalently be understood as knowledge and know-how (Halkier & Jensen 2008). *Engagements* are terms, which indicate a person's own motives towards completing a given activity, which depends on the emotions attached to the performance (Andersen 2015). In this thesis we have analyzed the importance of the social interaction during the lunch break.

Procedures covers both written and unwritten rules that apply to the execution of a given *Practice* (Andersen 2015), and we observed norms, routines and rules as well the role of the teacher during lunch.

By unfolding the concept of practice theory, different views and definitions of *Practices* has been applied from different theorist, such that we could consider the best possible our target group and aim. The main purpose in this thesis has been to relate to the definition of practices made by Halkier and Jensen (2008) and the three elements from Warde (2005).

Another approach to *Practices* could be to consider Theodore Schatzski's definition on *Practices*, where he states that practices can be recruited at different levels such as specified activities ("doings and sayings"), tasks and projects. This could be achieved by analyzing the "doings and sayings" among the children.

The children were responsible for preparing and cooking healthy new alternatives to the lunch box in the school kitchen for the parent event. A way to apply practice theory in another way can be looking upon specific activities and tasks, defined by Schatzki. It could therefore be interesting to observe the children when doing specified activities in the school kitchen; like washing, preparing and cooking, as well as how they behave in relation to each other when producing the food for the parents' arrangement.

A limitation of the chosen theoretical approach, *Knowledge*, *Attitudes* and *Practices* but also on opportunities and challenges when making lunch has been how to analyze each element equally. The application of practice theory throughout the analysis has shown to be rather comprehensive.

When addressing practice theory to this thesis, we noticed the necessity for establishing a thorough understanding on how the different theorists work with practice theory. Since the theoretical approach seems unspecified and not yet fully developed, it required a great amount of work according to literature reviews to understand practice theory's intention. Practice theory is an analytical tool to which people's actions and perceptions can be understood. Therefore practice theory cannot stand alone as an interpretative framework, but requires supplement from other theories (Andersen 2015).

As researchers we need to immerse how the elements *understandings*, *engagements* and *procedures* can be merged together in a particular practice (Andersen 2015).

8.4. DISCUSSION OF THE METHODOLOGICAL APPROACH

The following paragraph will be discussing the applied methods, such as the knowledge-based quiz, photo elicitation, focus group interviews, semi-structured interview and observations, which were conducted with school children and parents.

Children as a target group are individuals with the right to be heard, but on the other hand subjected to the rules set by adults. In contradiction to this, children have opinions just as much as adults and this should not be ignored simply because they are children (Scott 2000). As a method, photo elicitation has worked as a tool to help the children discussing their lunch, in other words "a can opener". The focus group interviews were conducted the same day as they took a photograph of their lunch box, and made it easier for the children to comment on them. Clark (2011) mentioned that children have difficulties with remembering. To account for this the photo elicitation was made on the same day as the conduction of the interviews. This could help the children remember details (Clark 2011).

When conducting the focus-group interviews a challenge was to make sure that the children felt safe, and wanted to share their perceptions. Since we were unfamiliar to them, we wanted to team them up with another classmate with whom they felt close to. However, one of the disadvantages experienced was that not all children seemed to feel safe when participating in the interview with their friend. According to literature covering photo elicitation with children, some children need a safe and trusted environment with the interviewer when sitting alone and it is the interviewer's role for the interviewer to overcome power

inequities (Clark 2011). Since the interview situation could feel a little unfamiliar to the children, the most vital for us as researchers was to create an environment where the children felt comfortable.

For this lunch intervention the children seemed to build upon each other's *understandings* and there were a good atmosphere among them during the focus-group interviews. Some of the challenges for us as researchers were to keep the language simple enough for the children to understand, and use child-appreciate vocabulary.

When planning the focus group interviews, it was important for us to remember that the questions should adapted to the children's age, by trying to avoid long and tricky questions. What we experienced as a challenge was to keep the children concentrated and for that reason we tried to make the focus group interviews short and to the point, and allowing us to conduct several interviews at one day.

Due to the scope of the thesis, it was not possible to recruit more parents for semi-structured interviews than the ones we interviewed during the parent arrangement. Our idea behind choosing the semi-structured interview as a method was to make as many interviews as possible. In order for us to gain an understanding of the *Knowledge, Attitudes* and *Practices* of the parents, but also to be able to make a higher change of influencing the parent's *Attitudes*, which was the intention of the parent arrangement and semi-structured interviews.

The number of informants was selected during the period of the intervention. On the positive side, the low number of participants made it possible for us to work with the answers more in depth during the analysis. According to literature, many informants in qualitative methods can provide a huge amount of data, which can make it difficult to make a coherent analysis (Tanggaard & Brinkmann 2010).

The purpose of using different qualitative methods in the intervention was to gain a greater understanding of the research area and by applying different methods like interviews and observation, this contributed to the increase of the validity of the intervention.

When using both a quantitative knowledge-based quiz and a focus group interview to measure the children's *Knowledge* toward a healthy lunch, we could relate the results to each other. Each method could be used to identify limitations within the other method (Green & Thorogood 2009)

Since the purpose of the thesis was to produce *Knowledge* that could be shared and used in another context, we needed to focus on the external validity of the intervention (Malterud 2001). The external validity refers to generalizability, and explains whether the findings of a study can be transferred to other situations compared to the examined (Malterud 2001).

To determine whether the methods applied in the thesis showed the intended purpose, we also needed to focus on the internal validity. Internal validity seeks to address whether the study investigate what it was meant to (Malterud 2001).

The methods applied throughout the thesis have shown to be an appropriate way to answer our problem statement. The methods have shown to examine the intended. Derived from this, the internal validity is valued as high.

In this intervention we saw the results as useable for other researchers who wanted to implement a similar project in another context. We saw the intervention contributing to new *Knowledge* for both project SoL and other researchers, who were interested in working with families.

The thesis' selection of only a few parents and small group of school children is a non-representative sample size, in comparison with all the families with school children in Denmark. However, we consider our data to be reliable, since unhealthy lunch habits are a general problem in Denmark, and according to the current discussion on the subject, describes the same problem regarding the lunch box, like picky eating among children and new inspiration to the lunch box.

While observing the lunch situation we strove to be as natural as possible, but since we were observing two different preschool classes and the teachers role in a small canteen setting, our presence had an impact on how the teacher's interacted with the children, and the teachers were highly aware of their role as being objects for observation. This was observed in the beginning of the observation where the two teachers told the children to be well mannered since they were observed by us. Since it was only possible to perform one observation of the lunch situation and the teacher's role, it was not possible to draw any conclusions on how the teachers general interaction with the children.

According to the knowledge-based quiz, not all the questions were specific enough and could be misleading for the children to answer (Appendix 20). The questions degree of severity was based on teaching materials for preschool-first graders from the Ministry of Food, Agriculture and Fisheries of Denmark (Ministry of Food, Agriculture and Fisheries of Denmark 2014).

Since the knowledge-based quiz took place in a social setting in a classroom, the students were able to influence each other, and it could establish some response bias, since the children would answer what they thought was correct answer instead of their own personal perception.

Due to the limitations of this thesis, the sample size was limited to a certain number of participants. It could be argued that a larger sample size would better show a larger perspective. If a few of the children had

answered differently the results from the knowledge-based quiz it might have changed the overall impression of the effect of the intervention. To support our findings the knowledge-based quiz should be done on a larger scale. It was hard to find the right level of difficulty, based on chosen age group.

Since we involved many important stakeholders and carry out multiple activities, with the aim of involving the parents and children, this helped us to establish a higher level of intensity in the lunch intervention. These results can have relevance for Project SoL in the future, when evaluating an intervention, additionally to consider how to involve more parents within Project SoL.

The main goal of this thesis was to investigate whether a lunch intervention targeted at families with school children in three selected local communities could promote healthy lunch options in schools.

Throughout the analysis and the lunch intervention we saw an overall picture of the content of the children's lunch box. Based on the photographs taken by the children and the documentation of the elements from '*Madpakkehånden*' we discovered that the children's content of the lunch box seemed to vary. Rye bread was the most occurring element and therefore was suggested as an important norm for the school children and their parents. Even though rye bread, cold cuts and vegetables seemed to be the most occurring elements in the lunch box and all are elements from '*Madpakkehånden*', we estimate that there still is room for improvement among children's lunch boxes. An overall picture emerged throughout the lunch intervention where we identified the children's lunch box containing cold cuts with a high amount of saturated fat, salt and sugar and an insufficient amount of fruit and fish. These types of cold cuts can easily be changed to more lean cold cuts though it demands a change in children's lunch preferences. Through the lunch intervention the children and parents obtained broader *Knowledge* and inspiration for new and healthier alternatives as well as how to include the five elements from '*Madpakkehånden*' in a different way. Especially with focus on how to facilitate the use of fish and how fruit can be a substitute as a snack and cold cuts.

The children seemed to have a common understanding of what a healthy lunch box should contain, but they had individual differences when it came to preferences concerning the content of the lunch box.

Based on the collected data from the knowledge-based quiz and focus group interview we can conclude that the children appeared to have a general awareness of what a healthy lunch box should include. There was a tendency that the children perceived a healthy lunch box by relating to the five elements from '*Madpakkehånden*'.

The application of '*Madpakkehånden*' has functioned as a helpful tool to remember and use in practice when making the lunch box at home with parents. '*Madpakkehånden*' is targeted at children due to being child-friendly by illustrating a healthy and varied lunch box. The results from the knowledge-based quiz indicated that the children were able to broaden their *Knowledge* to a certain level through the planned activities both **educational** and **practical activities** as a part of the lunch intervention.

Through our lunch intervention we exposed the children to new, tasteful and healthy alternatives to the lunch box both during teaching and in practice when preparing the food for the parent event. By

investigating the children's current lunch practices, we targeted selected questions, which illuminated the children's perception toward a healthy lunch box. This revealed limited lunch preferences among the children. The children's lunch *Practices* were challenged through the lunch box workshop where they had to relate to their own perception of a healthy lunch box. We experienced that the children had a clear perception of what elements a healthy lunch box should contain. This showed that the children were able to carry their *Knowledge* and *understanding* into *Practices*.

Through the parent's everyday life, the health aspect was highly prioritized especially with focus on shopping and preparing their children's lunch box. The parents felt a certain responsibility towards ensuring their children's health by providing them with healthy food during a school day.

The parents were controlled by certain aspects with regards to what a healthy lunch box should contain. However they valued the lunch intervention as a good initiative, where they obtained new *Knowledge* and inspiration to alternative elements on how to prepare a varied lunch box. Furthermore the lunch intervention motivated the parents to try on new and healthier lunch options. The healthy lunch box recipes gave advice for a healthy and filling lunch box, which the parents appreciated. The parents indicated that '***Madpakkehånden'*** was a good tool and established opportunities to further explore children's food preferences, however some challenges was found within the children's limited food preferences, which indicated that the children's likes and dislikes for certain foods was a limiting factor.

With the new **school legislation**, the timespan spent in school is longer for children and therefore the school children need energy to concentrate during a school day. We believe that healthy lunch habits and food consumption should be taken into consideration from a governmental perspective; hereby drawing more attention towards healthy lunch habits in the new school legislation on equal terms with the importance of the physical activity.

This chapter provides reflections and inspiration for future research and perspectives on how to work with health promotion targeted families with children.

With our Integrated Food Studies education we are provided with an integrated and holistic perspective on food-related decisions and expressions, in order to navigate in complex health and food related areas as viewed in this lunch intervention. The three AAU research groups DESIGN, FINe and MENU have each provided a unique contribution in order to work with a multidisciplinary approach, and due to this intervention the three different disciplines have not been weighed equally high. Our primary emphasis in this thesis has been on public health nutrition.

We have used the skills and experience from the FINe course to implement situational analysis and actor mapping in the thesis. By analyzing our lunch intervention, the literature on actor mapping and situational analysis has been a very useful tool to identify our preconceptions of the field as well as the difference between the two schools at Egebjerg and Højby, both in relation to important actors and how objects and discourses could affect the lunch intervention, and examined relations among these (Paragraph 7.1).

If we were to emphasize the Design aspect, we could increase the level of the intervention (Chapter 3) by investigating how the lunch break could be used for teachers as a learning situation and by changing the setting in the canteen and in the classroom with illustrations of healthy lunch boxes *'Madpakkehånden'*. It might promote the learning in relation to a healthy lunch for the children. Furthermore, the teachers could continue working with the documentation of elements from '*Madpakkehånden*' like in chapter 3.

It could be interesting to ask whether the teachers and staff members of the school canteen would be willing to change the food served in the canteen and replace it with healthier lunch options and new alternatives to the lunch box. As well as by involving the parents more in future health promotion activities concerning the lunch box at Højby School, the parents and the teachers could be responsible for planning events throughout the school year with themes concerning a healthy lifestyle. A future idea for the school is to implement a farm-to-school thematic week were the children can visit a local farm or the teachers and the local supermarket in cooperation could establishing healthy activities with focus on the importance of eating **fruit** & **vegetables** and **fish**.

The teachers and parents could communicate more effectively around how to talk to talk children about health and nutrition in developmentally appropriate ways both at home as well as during a normal school

day. According to Van Ansem (2013) many parents believed that urging healthy lunch habits among school children is a responsibility of the school (Van Ansem et al. 2013).

By establishing a lunch intervention in the bigger classes, we could attempt to get a broader view on the lunch habits around school children and how concerned they are about health. The challenges for implementing a lunch intervention could be that there seemed to be a tendency of skipping more meals during the day and the lunch box is often skipped and instead the lunch is purchased outside school (Christensen et al. 2012).

In this thesis it has been the purpose to gain insight into the *Knowledge, Attitudes* and *Practices* of families with school children, by implementing a lunch intervention in the school setting. Through the use of practice theory, we have gained new *Knowledge* on how a practice theoretical perspective consider the interaction between the elements *understandings*, *procedures* and *engagements* on those *Practices* you want to gain a deeper understanding of (Andersen 2015).

For future research we see an interesting aspect as gaining a deeper understanding about how social-*Practices* have an influence on the family's *Practices* at home. As mentioned earlier in paragraph 2.5, *engagements* such as feelings and emotions have an impact on a given practice (Andersen 2015), and for that reason we could try to understand what the parents motivation and motives are when shopping and preparing the lunch box. Do **health**, **variation** and **taste** plays the decisive role? What about the **price** and the **organic** aspect?

The attention to what food we as individuals should consume is growing. As there has been more interest in social, environmental and nutrition to what we consume. Research indicates that the level in *Knowledge* is the most important parameters, when analyzing people's food habits (Wardle, Parmenter & Waller 2000) and *Knowledge* about health and nutrients is a prerequisite for healthy eating habits.

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Appendix 1: Interview guide 1 – Focus group interview with preschool children

Appendix 2: Interview guide 2 – Focus group interview with preschool children

Appendix 3: Interview guide 3 – Semi-structured interview with parents

Appendix 4: Interview 1 with two preschool children (with a girl and a boy)

Appendix 5: Interview 2 with two preschool children (with two girls)

Appendix 6: Interview 3 with two preschool children (with two girls)

Appendix 7: Interview 4 with two preschool children (with two boys)

Appendix 8: Interview 5 with one preschool child (with one boy)

Appendix 9: Interview 6 with two preschool children (with two girls)

Appendix 10: Interview 7 with two parents from Højby School

Appendix 11: Interview 8 with one parent from Højby School

Appendix 12: Evaluation with two teachers from Højby School

Appendix 13: GANNT scheme

Appendix 14: Evaluation scheme teachers

Appendix 15: Evaluation scheme parents

Appendix 16: Lunch box protocol for Højby School

Appendix 17: Teaching protocol – preschool to 2nd grade Egebjerg School and preschool Højby School

Appendix 18: Madpakkehånden

Appendix 19: Recipes

Appendix 20: Quiz 1 – Egebjerg School

Appendix 21: Quiz 2 – Højby School

Appendix 22: Information letter

Appendix 23: Invitation to parent's arrangement

Appendix 24: Inspiration to healthy lunch boxes (parents)

Appendix 25: Observation guide

Appendix 26: Observation notes

Appendix 27: Messy Map Egebjerg School

Appendix 28: Messy Map Højby School

Appendix 29: Press release

Appendix 30: Histograms from Egebjerg School and Højby School