Education for Sustainable Food Consumption in Home and Consumer Studies

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Abstract

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Education as a means to enable sustainable food consumption has gained increasing recognition as a vital means to decrease current burdens upon both natural resources and human health. In response, the Swedish compulsory school subject of home and consumer studies, which positions education about food as core content, has been revised to incorporate in its national syllabus a perspective of sustainable development since 2011. However, because sustainable development remains an ambiguous, contested concept with a range of definitions and interpretations, it is necessary to gain better understanding of what incorporating its perspective can entail in home and consumer studies, particularly regarding the core food-related content knowledge that it teaches. Building upon four papers, this thesis reports research guided by an interpretive and exploratory approach that involved analysing data from syllabuses, observations, recordings of in-class lessons and interviews with practising teachers. The results reveal two ways of understanding what incorporating a perspective of sustainable development can entail in home and consumer studies in Sweden. The first understanding proposes an enriched and unified practice in which the curriculum prioritises embodied forms of knowledge about healthy, ethical and resource-efficient food consumption by allowing a multi-relational, systems thinking approach while focusing a homemade meal practice. By contrast, the second understanding proposes a practice riddled with inconsistencies and contradictions in providing teaching and learning opportunities to attain the intended goals. This ultimately results in fragmented learning opportunities focused more on informed reasoning than on informed actions. Taken together, both understandings pose theoretical, conceptual and practical implications, both for home and consumer studies in particular and in education for sustainable food consumption in general.

Contents

Tables and figures

List of papers

This thesis is based on the following original papers and manuscript, which will be referred to in the text by their Roman numerals:

I. Gisslevik, E., Wernersson, I., Åberg, H., & Larsson, C. (2016). Food in Relation to Sustainable Development Expressed in Swedish Syllabuses of Home and Consumer Studies: At Present and Past. *Journal of Education for Sustainable Development, 10*(1), 68-87. Doi:10.1177/0973408215627402

II. Gisslevik, E., Wernersson, I., & Larsson, C. (2017). Teaching Sustainable Food Consumption in Swedish Home Economics: A Case Study. *International Journal of Home Economics, 10*(2), 52-63.

III. Gisslevik, E., Wernersson, I., & Larsson, C. (2018). Pupils' Participation in and Response to Sustainable Food Education in Swedish Home and Consumer Studies: A Case-Study. *Scandinavian Journal of Educational Research,* Doi:10.1080/00313831.2017.1415965.

IV. Gisslevik, E., Wernersson, I., & Larsson, C. Home Economics Teachers' Perceptions of Facilitating and Inhibiting Factors When Teaching Sustainable Food Consumption (Manuscript submitted for publication).

Introduction

As a basic need for all living beings, food is essential to human life and health. It also forms an important part of people's cultural identities and plays a significant role in economies worldwide. At the same time, contemporary food production and consumption contribute to a wide range of unsustainable impacts on public health, economy and the environment that ultimately threaten life and health around the world (Martin, Oliveira, Dahlgren, & Thornéus, 2016; Reisch, 2010; Reisch, Eberle, & Lorek, 2013; Sustainable Development Commission, 2009). Although Earth has long demonstrated its limitations regarding the human extraction of natural resources, the Western world continues to consume and produce in a way that is unsustainable for the future (European Environment Agency [EEA], 2005; Larsson, 2015b; United Nations [UN], 2015). Unsustainable food consumption and production thus pose a threat not only to environmental resources and ecosystems but also to economic systems and the stability, health and survival of human groups. Such knowledge, coupled with the fact that global environmental degradation affects different human groups disproportionately, has increased incentives to seek sustainable food consumption and sustainable development for all (McMichael, 2008). Accordingly, the promotion of sustainable food consumption features prominently on the international agenda to meet the needs of the present generation without compromising the ability of future generations to meet their needs as well (Brundtland, 1987; UN, 2015). To that end, attention paid to incorporating food-related education in national educational organisations as a means to 'learning our way out of our current unsustainable food system and into more sustainable alternatives' has gained greater recognition in the realisation of that agenda (Sumner, 2016; Koch, 2016).

Viewed as critical means to support the sustainable socialisation of youth consumers, education and educational organisations received high priority during the UN Decade of Education for Sustainable Development, 2005–2014, which aimed to provide education about values, behaviours and lifestyles that can reorient societies towards sustainable futures and positive societal transformation. As a result, education for sustainable development (ESD) has

become widely incorporated as a priority in policy documents in numerous educational settings (Wals, 2009).

In Sweden, the compulsory school subject home and consumer studies (HCS) has provided theoretical knowledge and facilitated practical activities in meal planning, nutrition knowledge, resource management and cooking, among other topics, to youth consumers in Sweden since 1962. (Before then, the subject home economics was provided to girls only). During the sweeping revision of Sweden's national curriculum in 2011 and in line with the increasing emphasis on incorporating ESD in school curricula, the mission of HCS national syllabus changed to incorporate a perspective on sustainable development in all areas of the subject (National Agency for Education, 2011a)[1]. An aim of the revised national syllabus of HCS states that 'Pupils should be given opportunities to develop their ability to…assess choices and actions in the home and as a consumer, and from the perspective of sustainable development' (National Agency for Education, 2011b, p. 43). Thus, the national syllabus of HCS includes a mission to educate young people to think independently about and take responsible action in making sustainable food consumption choices.

However, the broad and contested notion behind the term sustainable development and its operationalisation in HCS, in being expressed at a highly general level, neglects a more concrete understanding of what incorporating its perspective entails in both the daily classroom activities of HCS and the subject's substantial knowledge base concerning food. Practitioners of education for sustainable consumption have noted that the specifications of educational organisations' potential contributions remain vague, as well as that empirical research on school practices directed towards engaging students with the notion of sustainable consumption remains rare and incomprehensive (Fischer & Barth, 2015). Although low precision of a subject's content is necessary to afford flexibility for the professionalism of teachers and the autonomy of students (Berg et al., 2015; Linde, 2012), the vague specifications of the potential contributions of HCS pose difficulties in interpreting what HCS offers or is expected to offer in order to meet Swedish and international agreements regarding ESD. Consequently, it is not possible to discuss the ways

[1] Sweden's national curriculum is issued by the government and contains fundamental values, goals and guidelines intended to characterize all teaching. The overall curriculum document also contains the syllabuses which are national regulations of each subject's main content, goals and knowledge requirements.

in which current educational content aligns with social policies about enabling sustainable food consumption or in what ways it can be developed. It is also not possible to estimate whether the conditions for such education are constructively adapted to achieve the desired goals. Similar dilemmas have been highlighted as important topics of enquiry in the continued evaluation and progress of ESD (Cars & West, 2015; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2014b; Wals, 2009), and in response, it is necessary to expand the knowledge and understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for HCS and its subject knowledge base about food.

Aim

The overall aim of research conducted for this thesis was to gain better understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for HCS education and its subject knowledge base about food. More specifically, the aim was to explore and describe how education about food from the perspective of sustainable development can be understood in an HCS context according to both formulated written and implemented content knowledge and perceived factors influencing teaching and learning opportunities. To that end, the guiding research questions were:

1. In what ways has content knowledge about food been expressed in past and present Swedish HCS syllabuses, and how can those expressions be operationalised into the notion of sustainable development?
2. What are the characteristic features of content knowledge implemented regarding sustainable development in the classroom practices of a HCS teacher?
3. How do HSC students participate in and respond to education taught from a perspective of sustainable development in authentic HCS lessons, and what factors could be important for their opportunities to goal achievement?
4. How do experienced HCS teachers perceive the mission to implement a perspective of sustainable development in food-related education, and what factors do they think inhibit their activation of that mission?

With this overall aim and research questions, the ambition is to contribute to the discussion about education for sustainable food consumption, and about the concept of sustainable development in HCS education. This is of importance to the theoretical, conceptual and practical development of the field, both in education for sustainable food consumption in general and in the specific context of HCS in particular.

Background and Conceptual Framework

The research conducted for this thesis was performed in the field of food and nutrition science and takes as its starting point the global discussion of education as a means to enable sustainable food consumption. Although attention paid to food-related education as a vital means to facilitate social transitions towards sustainable food consumption has increased in recent years, a gap in research that empirically explores the implications and implementation of such education in actual educational settings persists.

In response to that gap, the present chapter discusses several concepts pertinent to Swedish and global guidelines regarding sustainable food consumption, as well as how the compulsory school subject of HCS can be understood in terms of those guidelines. In the process, the chapter reviews literature addressing current concerns with food systems and consumer influences, practices and agency, as well as aspects of strategic policies, particularly education policies, meant to change unsustainable food consumption patterns. Ultimately, the chapter presents a conceptual framework for understanding the various domains, actors and processes involved in educational settings in which sustainable food consumption is addressed.

Concepts of sustainable food consumption

Sustainable development

The meaning of *sustainable development* is not self-evident, and an array of sometimes conflicting definitions and interpretations of the term prevail (eg Mebratu, 1998; Ross, 2009). No matter its meaning, however, sustainable development is part of the leading global agenda 'to meet the needs of the present, without compromising the ability of future generations to meet their needs' (Brundtland, 1987) and in a balanced consideration of environmental, social and economic constraints facing society (McMichael, 2008).

The meaning of *sustainable development* has varied since its introduction in the 1970s and 1980s (Mebratu, 1998; Ross, 2009; UNESCO, 2007), and the concept

remains complicated and debated (Jickling & Wals, 2012; Knutsson, 2013). Discussion of sustainable development initially arose in response to various environmental problems that became visible around the world in the mid-20th century.[2] In the late 1980s, *sustainable development* became a term used internationally as well as a guiding principle for the world's environmental activities with the UN Commission report titled 'Our Common Future', also known as the Brundtland Report. In addition to an environmental dimension, the report presented economic and social dimensions as parts of the mission of sustainable development (Brundtland, 1987). However, the report's optimistic stance towards achieving both global economic development and ecological sustainability generated criticism about, among other things, the broad, complex and vague definition of *sustainable development* and the seeming priority of economic growth over environmental sustainability (Andrén & Arderup, 2004; Jickling & Wals, 2008). Nevertheless, because the term *development*, as conventionally understood in social contexts, meant a process of social change by which problems in society can be solved or alleviated (Knutsson, 2013), the concept of sustainable development ultimately appealed to most stakeholders involved and served to fuel the continued development of environmental policy (Andrén & Arderup, 2004).

With social, ecological and economical dimensions as the pillars of sustainable development, an action plan, known as Agenda 21, to confirm and concretise the Brundtland Report was proposed in Rio de Janeiro in 1992. Among the most urgent matters that Agenda 21 addressed was the need to change unsustainable patterns of consumption and production, particularly in industrialised countries, which were identified collectively as 'the major cause of the continued deterioration of the global environment' (United Nations Conference on Environment & Development, 1992). According to the Oslo Symposium (1994), the term *sustainable consumption and production* refers to

> the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations.

[2] The 1962 publication of the book *Silent Spring* by Rachel Carson catalysed widespread public awareness about environmental issues—among other things, toxicity in the food chain and how the use of synthetic pesticides threaten animal and human health.

Opposed to that concept is unsustainable consumption, the three most significant areas of which, along with housing and transportation, is food (Reisch & Thøgersen, 2015).

Food and food-related components

This thesis refers to the word food in a broad sense because the term can have a multitude of meanings. Benn (2014), for instance, has conceptualised food as operating at four distinct levels: as nutrients at an abstract level, as ingredients at a more visible level, as prepared or cooked food and, lastly, as meals consumed over time that collectively represent a person's diet (Benn, 2014).

Although often regarded as material that fulfils a basic need of humans, food is also central to different systems and various subsystemic levels, including those of the biosphere, agriculture, the market, the kitchen and waste management. Those levels and their components involve certain processes, including the production, distribution, purchase, preparation, consumption and discarding of food, all of which encompass numerous interrelated activities and practices (Sobal, Kettel, & Bisogni, 1998). For example, the process of cooking a meal can be conceived as a series of numerous decisions and actions and not merely 'to stir in pots and pans' (Ekström, 1990). Food can also relate to biological and environmental hazards, the destiny of livestock, the livelihoods of farmers and other agricultural workers, the social structure of people who eat food together, the household division of labour and much more (Ekström, 1990). Altogether, the word *food* refers to far more than food types and diets, and by extension, *food consumption* refers to all activities associated with the purchase, use and disposal of food-related goods and services. Food consumption thus relates to a wide range of actions and behaviours connected to food beyond the mere act of eating (Reisch & Thøgersen, 2015).

(Un)sustainable food consumption

Due to increasing mass production and commercialisation, the contemporary food industry is one of the largest industries in the world (Germov & Williams, 2016). It is also an industry riddled with conflicts and contradictions that together cause millions of people in developing countries to suffer from hunger and malnutrition (McGuire, 2015) while millions of people in wealthier countries are obese and suffer from diet-related diseases (Mozaffarian, 2016). At the same time that land and water resources for food production degrade

the environment, a third of all food intended for humans is wasted (Food and Agriculture Organization [FAO], 2011). At present, food-related dimensions in sustainability policies have become widely acknowledged to play crucial roles in global sustainable development goals (UN, 2015).

Despite those trends and growing interest in the enquiries of food systems, no universally agreed-upon definition of *sustainable food consumption* is currently available. Among major conceptualisations in circulation, the FAO's (2010) compact definition of *sustainable diets* refers to

> Diets with low environmental impacts, which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimising natural and human resources.

In contrast to that diet-specific definition, the Sustainable Development Commission (SDC, 2005) has offered a more encompassing definition that emphasises a broader view on food-related aspects, including decent conditions for people and other animals operating in food production chains, and that underscores support for diversity in rural economies, diverse cultural traditions and local means of production, among other domains.

In a recent overview of contemporary issues and policies in practices in food consumption, Reisch et al. (2013) have elaborated upon those definitions by highlighting the ecological, social, ethical, health-related and economic interconnections of food consumption. Their concluding recommendations stress a broadened view of food at its various systemic levels – its production, processing, transportation, packaging, marketing, handling, preparation, storage, cooking and discarding – each step of which should be considered in terms of its impact on human health and the environment.

Generally, the global impact of individual households is small compared with, for instance, the primary production phase of agriculture. However, the sum of millions of households' daily food activities becomes a major contributor to significant effects on the environmental, health-related and economic aspects associated with food (Ivanova et al., 2016; Kearney, 2010; Larsson, 2015b; Nordic Council of Ministers, 2016). Thus, in today's market economy, the choices and actions of consumers arguably play a pivotal role in the food system; because consumers ultimately make decisions about what foods and services they consume, they can significantly influence the demand

and even the supply of different types of food products (EEA, 2005; Kearney, 2010; Sustainable Development Commission, 2005).[3]

The following part of this chapter briefly describes some current interconnections among ecological, social and economic aspects ascribed to the food consumption choices and actions of consumers in the Western world. The thesis draws from both international and national data to describe influences deemed relevant to the Swedish context.

Food consumption choices related to ecological aspects

In Sweden and other countries of the European Union, as well as the United Kingdom as a former member state, of the total environmental impact caused by households, a third relates to the consumption of food and drink (EEA, 2005; Tukker, Eder, & Suh, 2006). In today's globalised society, not only can consumers access food from all over the world simply by shopping at their local grocery store, but in Sweden, for example, roughly half of all food eaten has been imported (Chamber Trade Sweden, 2013). As part of the corresponding process of transporting food, traffic exhaust and the increased use of additives and packaging to preserve products contribute to current environmental burdens. However, the largest environmental impacts, specifically by way of greenhouse gas emissions, water depletion and influences upon biological diversity, stem from processes not within transport but within agriculture (EEA, 2005, 2012; Ivanova et al., 2016), especially regarding the production of meat and dairy products (Hallström, Carlsson–Kanyama, & Börjesson, 2015; Ivanova et al., 2016). Accordingly, consumers' choices concerning their diets and, more directly, the types of food that they buy could be significant for which agricultural processes continue to be supported and maintained.

Consumers also affect the environment with how they travel to grocery stores and how they store, cook and, more importantly, discard food (EEA, 2005; FAO, 2011; Hallström et al., 2015). In high-income countries, for example, the largest proportion of food waste comes from households (FAO, 2011; Swedish Environmental Protection Agency, 2012). Swedish households in particular throw away nearly half a million tonnes of eatable food and drinks every year – that is, approximately 46 kg per person per year (Fuentes, Normann, & Östergren, 2016). Such trends bear significant impact upon the

[3] *Choices* refers to acts of choosing or the possibility of choosing in situations generally structured by both underlying limits and unconscious influences.

environment, for food thrown away at the end of the food chain has consumed the greatest amount of resources during the different processes of the food system.

Despite the lack of a universally agreed-upon definition of *sustainable food consumption*, policymakers and researchers generally agree that certain so-called 'hot-spots' warrant urgent attention. Significant ecological aspects of food consumption at such sites include the 'distance between food consumers and producers (in miles, as well as in minds)', 'the significant loss of biomass between the field and the table (including the waste generated)' and 'the high consumption of animal products in the form of meat and dairy products' (Reisch et al., 2013, p. 17).

Food consumption choices linked to social and health aspects

Of all dimensions on the agenda of sustainability, interpretations and definitions of the social dimension demonstrate the most markedly diverse characteristics (Dempsey, Bramley, Power, & Brown, 2011; Robert, Parris, & Leiserowitz, 2005). Concerning sustainable consumption at large, the social dimension seems to focus on promoting health and welfare by including 'social issues such as preventing obesity, fighting global poverty, and community involvement' (Organisation for Economic Co-operation and Development, 2008). Regarding food consumption in particular, however, the social dimension predominantly focuses on how products are produced and, in turn, how choices regarding food consumption can affect health and wellbeing due to pollution, overeating and both chemical and biological hazards. Such impacts for actors working and living alongside spheres of the food system, including in terms of work conditions, salaries and child labour, warrant especially close attention. From a social and ethical perspective, individual consumers can therefore support more or less ethically responsible food processes, including agricultural production that is fair, safe and secure for all humans and other animals whose lives and work come into close contact with the food chain (Reisch et al., 2013).

By further contrast, from the perspective of individual health, people worldwide face mounting food-related health problems such as cardiovascular disease, obesity, certain types of cancer and type 2 diabetes. In particular, increasing obesity, especially among children, has been identified as a major challenge for global sustainable development (World Health Organization, 2016). In Sweden, half of all adult men, more than a third of all women and one in five children are overweight or obese (Livsmedelsverket, 2016b), and the risk

factor that contributes most to the disease burden in Sweden is unhealthy eating habits (The Institute for Health Metrics and Evaluation, 2016). To reduce those risks, the Nordic Nutrition Recommendations (2014) have advocated diets that balance certain nutritional components and meal compositions, and following the recommendations has been associated with decreased risk of cardiovascular disease and mortality in Sweden, particularly among men (Drake et al., 2013). Moreover, according to different scenario analyses, adopting healthier diets can also reduce overall environmental impacts related to food consumption (Hallström et al., 2015). However, recent investigations in Sweden have shown that few people follow those recommendations, and at the same time the number of diet-related diseases has dramatically increased in the Swedish population (Nordic Council of Ministers, 2016; Larsson, 2015a).

Food consumption choices linked to economic aspects

At the societal level, the economic impacts of consumers' food consumption choices can relate to social costs of healthcare, waste management and the consequences of climate change. For example, research by Civic Consulting (2014) has estimated that if current upward trends of obesity and related diseases continue, then the costs for society by 2020 will amount to approximately €4 billion in Sweden alone. Concerning food more particularly, FUSIONS (2016) has posited that the nearly half a million tonnes of eatable food waste generated by Swedish households, at an estimated price tag of €3,529 per tonne per household, will continue to pose a significant consumer-generated impact on social costs in Sweden.

At the household level, economic aspects of food consumption choices can be considered in terms of the price index of food. In Sweden, the prices of food have increased more than those of other consumable goods, and the same foods that the Swedish Food Agency recommends the population to eat more of, including vegetables and fish, have demonstrated the greatest increases in price (Jordbruksverket, 2016). Particularly low-income households have been shown to buy less of those recommended foods and more of energy-dense, nutrient-poor products (Livsmedelsverket, 2016a). Rising prices, coupled with the perception among consumers that healthy, environmentally supportive food is generally more expensive than conventional food, have encouraged people to continue buying conventional food products simply because it seems to be more economical (Vittersø & Tangeland, 2015). However, research has shown that sustainable diets can cost the same or even less than conventional diets if

alternative foods are routinely consumed and alternative preparation methods are routinely used (LiveWell for Life, 2014). For example, although food made by organic means, advocated by some as environmentally supportive (Vittersø & Tangeland, 2015), is often more expensive than its conventional equivalents, proponents of organic production argue that consumers can accommodate organic food purchases in their budgets by making more price-effective choices that reduce their consumption of animal-based products and waste less food (LiveWell for Life, 2014).

Factors influencing food consumption choices

Given knowledge of the mentioned ecological, social and economic impacts of consumers' food consumption choices, changes in food consumption behaviours have been stressed as an imperative part of reducing burdens on environmental resources and human health (Freibauer et al., 2011; Reisch et al., 2013; Voget–Kleschin, 2015). By extension, making social transitions towards more sustainable alternatives has been projected to facilitate significant positive outcomes in response to urgent contemporary concerns (Hallström et al., 2015). However, inducing changes in consumers' current food habits requires knowledge and understandings of what factors influence their food consumption choices.

Above all, food consumption needs to be understood as a means to satisfy far more than hunger. Consuming food can generate pleasure and wellbeing, as well as act as a marker of both identity and social status. It is a social act often shared with other people that has symbolic and cultural value (Ekström, 1990; Parinder, 2012), which can have a powerful, pervasive influence on people's eating habits (Higgs & Thomas, 2016). Consequently, the background of people's food choices is highly complex and informed by the interplay of several factors that become active in various contexts (Brug, 2008; Story, Kaphingst, Robinson, Brien, & Glanz, 2008). Altogether, consumers' choices regarding food consumption are influenced by moral, ideological, normative, emotional and social factors, as well as individual preferences regarding taste and genetic predispositions, facilitating conditions and the sheer force of habit (Jackson, 2005). As a result, practices of food consumption differ across both time and space, by socioeconomic group, gender, age and geography (Thøgersen, 2017).

To illustrate the complexity of everyday practices of food consumption, Belasco (2008) has proposed a model that summarises the diverse factors

influencing food choices according to three dominant, competing forces: identity, convenience and responsibility. First, the force of identity is linked to the personal and cultural aspects of food choices, including preferences, traditions, family customs, age and ethnicity. Second, aspects of the force of convenience are linked to aspects of the accessibility of choices, including the availability and price of food, the time of consumption and the knowledge and skills of the consumer. Third, the force of responsibility involves awareness of 'one's place in the food chain' (Belasco, 2008, p. 9) and entails considerations of both short- and long-term consequences to health, nature, other people and animals. Belasco (2008) has placed those three forces within a *culinary triangle of contradiction* to illustrate the negotiation involved in the food choices of consumers that positions the forces as being either in harmony or conflict with each other. According to Belasco (2008), the forces of identity and convenience have the strongest impact on the final choices of consumers, and accordingly, many researchers are concerned with how those two forces can be balanced against the force of responsibility.

Strategies to induce change in food consumption behaviours

Although a wide, cross-disciplinary field that incorporates diverse areas of research, food and nutrition science commonly focuses on how aspects of food relate to or can improve people's quality of life (Faculty Board of Education, 2013). Studies in food and nutrition science are thus often promotional in the sense that they strive to develop, implement or evaluate programmes and policies that encourage individuals to adopt healthier diets (McCarthy et al., 2011). The same promotional orientation can also apply to the ethically and environmentally supportive dimensions of sustainable food consumption. As a result, debates about whether and how individual behaviour should be promoted to change are strongly influenced by different ideological and moral approaches. In any case, however, such debates typically centre on the idea that responsibility cannot and should not be exclusively delegated to either individuals, on the one hand, or societies and governments, on the other (Knutsson, 2013). Consequently, actors in those debates generally agree that both structural and behavioural changes are necessary, as well as that consumers should be conceived as being capable of participating in agendas for change by being empowered to make autonomous choices regarding food consumption

instead of being told what to eat and what to avoid (Freibauer et al., 2011; Hallström et al., 2015; Voget–Kleschin, 2015). To that end, a multifaceted approach, involving different types of policies, instruments and action at different levels and tailored to different groups, is pivotal to empowering consumers in democratic societies to change their behaviours of consumption (Barth, Fischer, Michelsen, Nemnich, & Rode, 2012; Contento, 2015; Fien, 2000; Reisch et al., 2013; Voget–Kleschin, 2015).

Although numerous types of instruments are currently used to enable sustainable food consumption, including information-based tools, market-based tools, regulations and so-called 'nudging', information-based and education-oriented tools feature prominently in today's practices of implementing policy (Reisch et al., 2013). However, information-based instruments have often been deemed ineffective due to their oversimplification of the complex realities of people's situated choices and the flawed assumption that people will change their behaviours simply by knowing more (Halkier, 2009; McKenzie–Mohr & Schultz, 2014), in a phenomenon widely known as the knowledge–action gap (Barth et al., 2012; Kollmuss & Agyeman, 2002). Nevertheless, education-oriented studies have shown that providing information, promoting action competence, reflection and decision-making-skills and focusing on knowledge gained from actual experience, when combined, can considerably decrease consumers' reservations about embracing sustainable consumption, as well as increase their interest, motivation and action competence to that end (Barth et al., 2012; Persson, Lundegård, & Wickman, 2011), all of which are viewed as prerequisites to inducing action (Frick, Kaiser, & Wilson, 2004; Manning, 2009; Vermeir & Verbeke, 2006). Following a similar logic, the school environment has been identified as a site with significant potential for promoting change in food-related behaviour (Prell, 2010; Ronto, Ball, Pendergast, & Harris, 2017; Van Cauwenberghe et al., 2010; World Health Organization, 2009).

Education as a means to enable sustainable food consumption

Though education alone cannot change how people consume food, it is nevertheless viewed as 'one of the most powerful tools to provide people with the right skills and competencies to become sustainable consumers' (Organisation for Economic Co-operation and Development, 2008). Likewise,

children and adolescents have been highlighted as key actors in shaping sustainable futures, and teachers have been ascribed the role as facilitators in delivering knowledge about sustainable consumption to younger generations (Koch, 2016; UNESCO, 2005; United Nations Children's Fund, 2013).

The role of education as a tool for realising the general agenda of sustainable development has long been emphasised, beginning with the action-oriented proposals of Agenda 21 that stressed reorienting education to prioritise sustainable development. With EDUCATION FOR SUSTAINABLE CONSUMPTION as a core theme, the UN General Assembly called upon governments worldwide to strengthen their efforts to integrate notions of sustainable development by designating the period 2005–14 as the Decade of Education for Sustainable Development. That resolution sought to mobilise the educational resources of the world (Decade of Education for Sustainable Development, 2002; UNESCO, 2009) to focus on directly influencing consumers 'to participate in and actively incorporate responsible, sustainable consumption into their daily habits' (Didham, 2013). As a result, education to promote sustainability has been prioritised in national policies with influence over educational settings, especially primary and secondary schools (Wals, 2009).

Although food ranks among the three major areas of consumption related to unsustainable consumption, Sumner (2016) has observed that research seldom address learning, food and sustainability at the same time. Nevertheless, some threads of professional practice have gained publicly, thanks to Marion Nestle, Michael Pollan and Alice Waters, who have offered insights into issues of the food industry and contributed to intensifying the cultural trend conceptualised as 'food pedagogies' (Swan & Flowers, 2015), meaning all formal and informal communication of food-related knowledge.

Practitioners of education for sustainable consumption have posited, however, that the specifications of educational organisations' potential contributions remain vague and that empirical research on school practices intended to teach students notions of sustainable consumption remains incomprehensive and rare (Fischer & Barth, 2015). Although the Decade of Education for Sustainable Development arguably generated many good-practical projects in all areas of education and learning, a number of challenges facing schools in relation to the implementation of ESD remain (UNESCO, 2014a). After all, incorporating dimensions of sustainable development into educational curricula is an ambitious, broadly targeted mission (Wals, 2011;

Vare & Scott, 2007) that encourages teachers to venture beyond the boundaries of their subjects or disciplines in order to visualise the interconnectedness of all phenomena of life (Brunner & Urenje, 2012). Because content knowledge provided in sustainable development education will consequently result in particular ways of conceiving and approaching the world (Almqvist et al., 2008), several researchers have underscored the importance of studying the effects and implementation of ESD in practice (Bagoly–Simó, 2013; Cars & West, 2015; Wals, 2009).

Swedish society has long demonstrated a tradition of encouraging education, information sharing and advice on eating habits, especially in schools and regarding maternity and child healthcare (Jonsson, 2004). As part of that tradition, calls for the provision of education about sustainable consumption have been issued in official government reports (Statens Offentliga Utredningar [SOU], 2000:29, 2004:104, 2005:51), as well as by several national organisations and institutions, including the Swedish Consumer Agency, the National Food Administration and the National Institute of Public Health. One such report stated that consumer commitment is based on increased awareness, which can be raised among consumers by increasing the sharing of information and knowledge, hence the importance of expanding efforts in education to that end (SOU, 2000:29). More recently, a report from Sweden's Centre for Consumer Science stated that with improved knowledge of food waste, consumers worldwide would be better positioned to ensure the reduction of food waste. Also arguing that providing consumers with opportunities to improve such knowledge, is something that world leaders would be able to achieve (Fuentes et al., 2016, p. 55). Moreover, regarding food consumption related to public and individual health, both Sweden's National Food Administration and Public Health Agency have advocated strengthening the food and health education already offered in Swedish compulsory school, as well as establishing additional education both in such school and in secondary education for adults (Livsmedelsverket, 2014).

Education for sustainable food consumption in Swedish compulsory school

Sweden's National Agency for Education has increasingly emphasised the importance of working with global issues in general and sustainable development in particular (International Programme Office for Education,

2012). The nation's prominent engagement in developing global environmental policy can be traced to the incorporation of environmental education in its national curriculum in the 1960s (Öhman & Östman, 2004), which in 1994 began to incorporate the term sustainable development (Cars & West, 2015; National Agency for Education, 1994). Since then, Sweden's engagement in the ESD agenda has resulted in the formation of both a national committee and international centre devoted to work related to ESD (Cars & West, 2015). Building on the pre-established environmental education, current overall curriculum states that (National Agency for Education, 2011a, p. 11):

> An environmental perspective provides opportunities not only to take responsibility for the environment in areas where they themselves can exercise direct influence, but also to form a personal position with respect to overarching and global environmental issues. Teaching should illuminate how the functions of society and our ways of living and working can best be adapted to create sustainable development.

Incorporating ESD in practice is not intended to involve adding a new content in school, but rather as a new perspective to apply on existing education in each subject (Öhman & Östman, 2004). Of the total 20 subjects taught in Swedish compulsory school, half now have explicit written instructions to incorporate a perspective of sustainable development. Of the three such subjects that have included the term *sustainable development* in all sections of their syllabuses – the purpose, core contents and knowledge requirements – one is HCS, which uses food as a primary tool for classroom instruction (National Agency for Education, 2011a).

Home and consumer studies and food-related education

The only formal subject in Swedish compulsory school that provides education on aspects of food as core content, HCS teaches elements of meal planning, cooking practice and nutrition in its food-focused lessons (National Agency for Education, 2011a).

Of course, HCS is a subject taught in many parts of the world, albeit with varying names and scopes. The multidisciplinary field of study associated with HCS is known internationally as home economics, which was developed in the early 1900s and has roots in the United States (Hjälmeskog, 2006). Early research in the field focused on people's behaviour in daily life and adopted the

improvement of health and living conditions as its primary purpose. In Sweden, HCS was first introduced as household economics (*huslig ekonomi*) in the late 1800s, following sustained debate on ways to mitigate poverty and malnutrition in the working-class population at a time that coincided with the rise of research in nutritional physiology and chemistry (Hjälmeskog, 2000). Policymakers during that period, who conceived that women in Swedish households lacked knowledge in household management and were thus part of the essential causes of poverty and malnutrition in society, determined that schools should educate girls and women to take care of the nation's homes, which, among other things, entailed preparing nutritious meals for working men in their households (Hjälmeskog, 2000; Johansson, 1987). Aspects of food have thus been central to HCS since the inception of the field (Höijer, 2013), which in 1962 became a mandatory school subject for both boys and girls.

HCS has continually been viewed as having social value, although its inclusion in school curriculum has been ascribed to the point in time when homes opened up to state intervention (Hjälmeskog, 2000). Today, new insights into food's effects on humans, society and nature continue to be reflected in HCS national syllabus. Influences upon the content knowledge of HCS have been governed by diverse social norms, traditions and political values related to, among other things, public health (Bildtgård, 2002), consumption ideals (Aléx, 2001) and ideological power relations (Hjälmeskog, 2000).

As a school subject, HCS aims to provide tools for fostering high-functioning everyday life in homes and among families and thus has a complex interdisciplinary scope. Areas of knowledge encompassed in the present Swedish syllabus for HCS include food preparation and cooking methods, nutrition and personal finances, consumer rights and laws, food production and transportation, laundry and cleaning, equality and division of labour and culinary culture and traditions (National Agency for Education, 2011a, 2011b). The knowledge-specific perspective of HCS derives from the concept of knowledge in action (National Agency for Education, 2000a, 2011b, 2014), meaning that the practical and theoretical elements of HCS are united in a complex, interconnected whole by which knowledge comes to life in real-world situations in which intellect, emotions, mindset and action come into play (Molander, 1993; National Agency for Education, 2011b). At present, the total allocated time for HCS in Swedish compulsory school is 118 hours, which, at a local level, can be freely distributed over the course of all nine years of compulsory schooling. The current national syllabus for HCS includes goals to

be met by the end of the sixth and ninth grades that are, according to a recent survey, mostly distributed in the fifth, eighth and ninth grades (Lindblom, Erixon Arreman, Bohm, & Hörnell, 2015).

Home and consumer studies and education for sustainable food consumption

In the revision of the national syllabus in 2000, a perspective on human ecology became pronounced that has continued to remain pronounced in the current syllabus, which was revised in 2011 (Oljans, Elmståhl, Mattsson Sydner, & Hjälmeskog, 2017). The perspective on human ecology focuses on the interaction of households, society and nature, with a specific starting point in the home and family (Grönqvist & Hjälmeskog, 2009). In HCS, the adoption of such a perspective promotes a specific lifestyle and society, meaning that neither the theory itself nor the syllabus is neutral in the sense that all ways are equally good, that all development is good, rather, and in line with the overall curriculum, it is respect for the environment that will be promoted (Grönqvist & Hjälmeskog, 2009).

A 2005 report of the Swedish government on how to achieve socially, ecologically and economically sustainable consumption (SOU, 2005:51) proposed that, among all school subjects in Sweden, HCS should bear primary responsibility for teaching topics of sustainable consumption. That proposal stemmed from the argument that HCS has a unique opportunity to combine practice in care and technical rational thinking, efficiency and thrift, as well as to combine 'the best of two worlds' by teaching students to manage material resources in various ways while prioritising human values. The report further suggested that the subject's allotted hours for study in compulsory school should be doubled. Ultimately, however, the proposal was not adopted in the revision of the national curriculum.

Nevertheless, revised in 2011, the national syllabus of HCS currently includes instructions to incorporate a sustainable development perspective as a foundational mission of the subject. Among the subject's aims, 'Pupils should be given opportunities to develop their ability to…assess choices and actions in the home and as a consumer, and from the perspective of sustainable development' (National Agency for Education, 2011b, p. 43). When incorporating that perspective in the syllabus document, the former subject term *household resource management*, defined as the management of human,

financial, material and natural resources (National Agency for Education, 2000a), was replaced with a *perspective on sustainable development* to expand the concept of resource-related issues and adapt the syllabus to better comply with the overall curriculum's increased emphasis on ESD (National Agency for Education, 2011b).

According to the revised syllabus of 2011, the subject of HCS encompasses three primary content knowledge areas: food, meals and health; consumption and personal finances; and environment and lifestyle. Those knowledge areas, together with the three subject-specific perspectives of health, economy and environment, form the basis for a learning process in which thinking, sensory experiences and actions are interlinked and in which students should receive opportunities to develop their food- and meal-related skills (National Agency for Education, 2011a, 2011b).

As mentioned earlier, the interpretation and definition of *sustainable development* and its three social, economic and ecological dimensions vary widely depending on the context (Robert et al., 2005; Wals & Jickling, 2002). Even within the specific context of the current Swedish overall curriculum, it is possible to find divergent interpretations (Grice & Franck, 2014). The syllabus for HCS refers to the three pre-existing subject-specific perspectives of health, economy and environment as a way to concretise the dimensions of sustainable development in education about food and everyday activities in home and family; in particular, health is expressed as an aspect of the social dimension of sustainable development, environment as an aspect of the ecological dimension and economy as an aspect of the economic dimension (National Agency for Education, 2011a). Since the 2011 revision of the syllabus, the knowledge requirements for ninth grade have stressed developing skills in making 'informed reasoning' and the ability to 'give reasons'; as written in the syllabus, 'Pupils choose approaches and give reasons for their choice with reference to aspects covering health, economy and the environment', and 'Pupils can apply informed reasoning to the consequences of different consumer choices and actions in the home with regard to aspects concerning sustainable social, economic and ecological development' (National Agency for Education, 2011b, p. 46). However, because links between the ambiguous notion of sustainable development, sustainable food consumption, and HCS practice are expressed on a highly general level, it leaves out a more concrete understanding of what implementing this perspective entails in the various knowledge areas practiced in the subject, including that of food.

In recent years, practitioners in the field of home economics have joined the discussion about sustainable development (eg Dewhurst & Pendergast, 2011; Eriksson & Hjälmeskog, 2017; Hjälmeskog, 2014; Janonen, Mäkelä, & Palojoki, 2016; Koch, 2016; Øvrebø, 2015), some of whom have argued that home economics affords a natural forum for developing sustainable food-related competencies in a holistic and applied manner. To date, however, empirical research on implementing a perspective on sustainable development in Swedish HCS has not been conducted.

Criticism of education for social change

According to Decade of Education for Sustainable Development (2008) the chief objective of global policies for ESD is that all people should have access to education about values, behaviour and lifestyle to reorient society towards sustainable futures and positive societal transformation. However, despite the mentioned advocacy for policy that enables changed food consumption patterns throughout education, the notion of education for societal change has also faced criticism.

Central to the debate as outlined by Fischer and Barth (2015), is the question of whether the primary outcomes of ESD should be the achievement of education or the achievement of sustainable development. Advocating the former view, Wals and Jickling (Jickling, 1992; Jickling & Wals, 2008, 2012; Wals, 2011) have argued against using education as a tool to influence people's behaviours. In 'Why I Don't Want My Children to Be Educated for Sustainable Development', Jickling (1992) contends that ESD conflicts with the very essence of education – that is, creating individuals who think for themselves. To educate individuals *for* an end, as ESD proposes to do, means that students are expected to prescribe to a predetermined behaviour or way of thinking. Such criticism therefore first focuses on the idea that education should not try to influence the behaviour of others, which at its extreme is indoctrinating instead of emancipatory.

However, other authors have argued that when education concerns caring about planet Earth and people's lives and futures, teachers should feel no regret in promoting certain principles or values (Fien, 1997; Haapala, Biggs, Cederberg, & Kosonen, 2014) and that schools and teachers must be free to mediate government policy (Scott, 2002). Such promotion and mediation, however, can be sought by mobilising various means. For example, Fien (1997)

has distinguished promoting core values such as ethical consumption from dictating particular attitudes such as that students must prefer to choose ethical alternatives. In the Swedish context, Öhman and Östman (2004) have explained ESD in Swedish schools not as a vehicle to deliver specific solutions for the problems of sustainable development but as a means to educate citizens who have the capacity to address issues of sustainable development. That is, they frame ESD in Swedish schools as a matter of managing the complexity and diversity of perceptions in sustainable development in a democratic way, partly by accommodating personal choice in response to the vast range of goods, services and, in particular, lifestyles and identities in today's society. By some contrast, Scott (2002) has argued that schools that simply ignore sustainable development are neglectful and that doing nothing in response to unsustainable developments is not an option.

Jickling (1992) also criticises the way in which ESD is performed. He argues that education *for* something implies that such education is training, which promotes the acquisition of skills and abilities that emerge via repetition and practice without cultivating any meaningful understanding (Jickling, 1992; Wals, 2011). However, that viewpoint of training is not shared by practitioners in knowledge-in-action disciplines, who view training, repetition and the acquisition of abilities and skills as essential to deepening or expanding understandings of complex issues (Lundequist, 1994).

Thus, in light of core criticisms of education for societal change, HCS in Sweden, given its potential to enable knowledge and skills that can benefit individual and social function and wellbeing (Hjälmeskog, 2006), as well as be an instrument for both enabling healthy, environmentally supportive food consumption (Livsmedelsverket, 2014; National Agency for Education, 2005; SOU, 2005:51) and teaching based upon knowledge-in-action (National Agency for Education, 2011b), seems to involve many aspects criticised by detractors of ESD.

This thesis, however, has been developed with the belief that the goal of fostering autonomous individuals competent to make informed choices is an important aspect of schooling: that students should become reflective individuals able to make conscious choices based on conclusions that they have drawn themselves. Nevertheless, to that end, they need access to collective knowledge and common values. Accordingly, the understanding that has informed the research in this thesis follows the thinking of Fien (1997), Scott (2002) and Öhman and Östman (2004) – namely, that all educational objectives

have to be products of dominant cultural and political values in light of the impossibility of teaching everything that could be taught in order for students to become truly autonomous. As Scott (2002, p. 3) puts it,

> It would be more ethical, and more useful, were we to acknowledge that the purpose of education in relation to sustainable development was to explore the concept and its implications, tolerating different views in this process, rather than to persuade people to accept it, whatever its implications.

Hence, the thesis is based on the assumption that all education with knowledge-based requirements to be attained to by a certain age is essentially normative, and by being aware of norms and encouraging teachers and students to meet or exceed them, the acquisition of food-related skills in HCS as part of education for social change is possible without being indoctrinating.

Concepts of education

Research based in the interdisciplinary field of food and nutrition science and with an interest in home economics, and sustainable food consumption can involve drawing from a wide range of theories and concepts that express the complexities within each field. Whereas the previous chapter of the thesis offered a conceptual framework for understanding elements in literature addressing sustainable food consumption and some means advocated to enable social changes towards that end, the current chapter clarifies concepts needed to understand the educational settings in which education for sustainable food consumption occurs.

A curriculum-focused perspective

Despite the gradual presentation of information responding to specifics of the thesis's aim, the overall objective of the thesis continues to be gaining better understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for HCS education and its subject knowledge base about food. To that end, a curriculum-focused perspective serves as both a conceptual approach and a guiding framework for understanding the educational settings in which HCS education about food occurs.

In curriculum-focused studies, the term *curriculum* can be defined, in its broadest sense, as 'a plan for learning' (Taba, 1962, in van den Akker, Fasoglio,

& Mulder, 2010). As such, holding a broader meaning than what the Swedish translation into *läroplan* would suggest. The term *läroplan* refers to the formal written documents issued by the Swedish government (referred to as national curriculum in present thesis), and the term *curriculum* in curriculum studies incorporates not only formal documents but also the different levels, contexts and representations of curriculum involved in constructing a plan for learning (Goodlad, 1979; Linde, 2012; van den Akker et al., 2010).

Of the many definitions and elaborations of *curriculum* currently in circulation, that in Goodlad's (1979) conceptual framework, combined with adaptions made by van den Akker (van den Akker, 1988, 1993 in van den Akker et al., 2010), is the one used as guidance in this thesis. Accordingly, an initial differentiation of levels within the broad notion of curriculum, their creation and their activation delineates the supra- (international), macro- (systemic, societal and national), meso- (institutional) and micro-levels (individual classrooms and learners). A second division delineates three representations of curriculum: the intended curriculum, the implemented curriculum and the attained curriculum. Last, those three representations can be further ascribed to five curricular domains: the *ideological* and the *formal* (intended curriculum), the *perceived* and the *operational* (implemented curriculum) and the *experiential/learned* (attained curriculum). Table 1 summarises the three representations and five domains of curricula, as well as their common studies, as outlined by Goodlad (1979).

Table 1 Representations of curricula, curricular domains and their common studies

Intended	**Ideological**	Politically or education-focused description of the ideal school and the basic philosophy underlying a curriculum • Studies on all types of policy-related documents, including textbooks
	Formal	Intentions as expressed in a written, officially approved curriculum • Studies on both national and local curricula and syllabuses
Implemented	**Perceived**	Curriculum as interpreted by users, especially teachers • Studies on users' perceptions of curricula and what education is offered in the corresponding school subjects
	Operational	Actual process of teaching and learning and of curriculum-in-action • Observation-based studies of curricula
Attained	**Experiential/ learned**	Learning experiences perceived by learners and the reactions and outcomes of the students • Studies on learners experience and responses in school subjects corresponding to curricula, and what they learn

Note: Author's interpretation and combination of van den Akker's (2010) adapted representations of Goodlad's (1979) curricular domains and descriptions of their common studies

According to Goodlad (1979), research on curricula can approach studies within all five curricular domains from at least three analytical angles: the substantive angle (analysis of teaching content such as goals, topics, materials, tools and working methods), the socio–political angle (analysis of influences exercised by various groups, organisations and individuals affecting the development of curricula) and the technical–professional angle (analysis of the methods in processes of developing curricula).

Based upon the conceptual framework outlined above, the thesis concentrates on aspects within the domains of the *formal* curriculum (intended), *perceived* and *operational* curriculum (implemented) and, to some extent, *experiential/learned* curriculum (attained), with special interest in the substantive analytical angle, all within a potential ideological framework of sustainable development. However, the research questions of the thesis focus not only on substantive issues but also on surrounding structures in organisational settings that influence the elements of substantive teaching processes. In describing such conceptualisations, the notion of influencing factors will be used.

Factors influencing teaching and learning

Factors influencing educational processes can be described with concepts derived from a frame factor perspective. Although the notion of frame factors is also a specific theory comprising methods for systematically investigating how certain influencing factors frames teaching and learning outcomes, this thesis applies the concepts within that framework to discuss possible influential factors and how they *might* affect learning and teaching opportunities. Thus, a major difference between frame factor theory and the thesis is that the latter uses the concept of influencing factors to construct hypotheses and not as the research approach.

Among other things, frame factor theory has contributed to the recognition of certain influencing factors in teaching situations that affect learning outcomes. In such contributions, it focuses on external factors beyond the control of teachers that nevertheless exert significant influence on how teaching occurs, particularly in terms of group constellation, content, allotted time, facilities and class size (Dahllöf 1978; Lundgren, 1999, as described in Linde, 2012), although later studies based on the theory have also included the factors of the repertoire and formal qualifications of teachers, the knowledge levels of students, the traditions of the subject studied and grading systems (Linde, 2012). Frame factor theory has been deployed to explore what political decisions imply for education and teaching by studying relationships between the governing frame and its results (Lindblad, Linde, & Naeslund, 1999). However, such research has explained those relationships in terms of constraints and opportunities for action and progress, not in terms of causes and effects. Consequently, the frames remain governing and limiting and cannot determine specific teaching processes. Nevertheless, if a goal is clearly identified for a process, then the frames have to be adapted to make that process possible (Lundgren, 1999). In other words, although it is impossible to accurately predict which educational process and its results will emerge from a certain set of frames, it is possible to predict which processes cannot occur (Gustavsson, 1999).

Linné (2012) has therefore described frame factors as boundaries for what is possible that bind the macro-level with the micro-level: in other words, the vision with the reality. Accordingly, decisions made at a certain level have consequences for the activities ascribed to other levels. In that sense, a decision to incorporate a perspective of sustainable development in the goals and

knowledge requirements for HCS stated in a national syllabus would have a series of consequences for actors involved at the micro-level.

When studying the implications of decisions in educational policy, earlier work has primarily focused easily identifiable and observable influencing factors such as time, class size and group constellation. Such trends have faced criticism from Gustavsson (1999), who has argued that unless a discussion of limiting frames incorporates the subjective perceptions of the actors that they affect, a versatile idea of prominent influencing factors and of a teacher's available free space is impossible. Gustavsson (1999) has also averred that regardless of whether frame factor thinking is used as a conceptual tool or to empirically test relationships between frames, different kinds of prerequisites should be distinguished and both actual and perceived frames should be considered.

Accordingly, to gain better understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for HCS education, it is important to consider previously acknowledged frames and influencing factors in the HCS context.

Factors influencing teaching and learning in the HCS context

In an HCS classroom, a wide range of activities and movements occur around the room, and students are permitted to talk and work at the same time. In their layout and design, HCS classrooms typically contain numerous kitchen units in which students can cook, the teacher's desk with a whiteboard behind it, tables and chairs for students for dining and studying, a place or room for laundry and a space with refrigerators, freezers and cupboards (Höijer, Fjellström, & Hjälmeskog, 2013). Most lessons follow a common structure involving an introduction, a cooking process, a dining session and a follow-up evaluation and discussion (National Agency for Education, 2005), and recipes are viewed as important artefacts being implemented during classes (Granberg, Olsson, & Mattsson Sydner, 2017; Lange, 2017). In 2003, the dominant working methods in HSC classrooms had students work in groups or seated while listening to the teacher (National Agency for Education, 2005).

A 2003 national evaluation of compulsory school in Sweden showed that students view HCS with considerable favour (National Agency for Education, 2005). The vast majority of students have an interest in the subject, which the perceptions of teachers corroborate. However, teachers view their food-focused education as having a pedagogical purpose, whereas students view it as a relevant but inauthentic compared to food prepared in their homes (Höijer,

2013). Bohm (2016) has described that phenomenon as representative of clashing discourses of cultural normality and evaluative responsibility for health.

In Sweden, students are entitled to a total of 118 hours of HCS education distributed over nine years of study. In effect, HCS is the compulsory school subject allotted the least amount of time, followed by the arts and music, each of which has nearly twice the amount of time allotted (230 hours). On the other end of the spectrum, compulsory school's two primary subjects, Swedish and mathematics, are allotted 1,490 and 1,125 assigned hours, respectively (SFS, 2010:800). Thus, HCS teachers need to find ways to teach topics on the formal syllabus related to food preparation and cooking, nutrition, personal finances, consumer rights and laws, food production and transportation, laundry and cleaning, equality and division of labour and culinary culture and traditions, all from a perspective of sustainable social, ecological and economic development (National Agency for Education, 2011a, 2016b), during a period equivalent to approximately two and a half weeks of full-time school. The allocation of the 118 hours is determined by local principals, which affords space for the professionalism of teachers, the autonomy of students and the tailoring of educational processes in line with context-specific needs and circumstances (Berg et al., 2015; Linde, 2012). According to teachers who participated in the national evaluation in 2003, teaching HCS is demanding, although all teachers also reported exceptional dedication to and enthusiasm for teaching the subject (National Agency for Education, 2005). They also perceived the formal syllabus to be highly important, along with their own engagement and didactic skills in the subject, to how they implement their teaching. However, HCS is also a subject often taught by unqualified teachers (National Agency for Education, 2016a) who might lack the support of such didactic skills when interpreting and translating the formal documents (Håkansson, 2015).[4]

In addition to teachers' interpretations of those documents, other factors that influence teachers' educational processes and students' learning opportunities in HCS have been related to access of appropriately equipped facilities and kitchen units, formally qualified teachers, manageable class sizes (with fewer than 16 students) and lessons of at least 120 minutes (Grönqvist & Hjälmeskog, 2006; Lindblom, Arreman, & Hörnell, 2013; Svenska Kommittén för Hushållsvetenskap, 2009; National Agency for Education, 2005). Previous

[4] According to statistics from 2016, 64.9% of all full-time HCS teachers were qualified to teach the subject. Of the total number of teachers employed to teach HCS, only 44.8% were qualified to do so (National Agency for Education, 2016a).

studies have shown that those factors vary across Sweden and are not adhered to in numerous Swedish schools (Höijer, 2013; Höijer et al., 2013; Lindblom, 2016; National Agency for Education, 2005). Those differences, coupled with vague specifications of the potential contributions of HCS, pose difficulties for interpreting whether the conditions for such education are constructively adapted to enable the formal goals and how they could be developed.

Background and aim: Summary

Education about sustainable food consumption has gained increased recognition as a means enable sustainable food consumption. In response, the Swedish compulsory school subject of HCS, which positions education about food as core content, has been revised to include a perspective on sustainable development in its national syllabus since 2011. However, because sustainable development remains an ambiguous, contested term with a range of interpretations and because empirical research on its application in HCS is lacking, this thesis seeks to gain better understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for HCS education and its subject knowledge base about food. To that end, the thesis describes how education about food from such a perspective can be understood in the context of HCS according to its implementation in content knowledge, as well as in terms of factors perceived to influence teaching and learning opportunities.

Methods

To gain better understanding of the multifaceted but under-researched area of food education in HCS taught from the perspective of sustainable development, the studies conducted for this thesis have adopted a broad interpretivist and exploratory approach.

Interpretivism

The research paradigm of interpretivism aims to understand the world as it appears from a subjective point of view. It seeks understandings of social realities both within the frames of reference of actors and from outsider perspectives (Chowdhury, 2014).

Interpretivism's ontological assumption about the nature of reality is that all observations are informed by both theory and values and thus do not constitute objective truths (Leitch, Hill, & Harrison, 2010). Meanwhile, its epistemological assumption is that knowledge of reality is a social construction made by human actors. Thus, true objective knowledge of the world is impossible because knowledge and understanding stem from an intellectual process whereby so-called 'knowers' experience and co-construct issues of their social worlds (Chowdhury, 2014). Nevertheless, interpretivism maintains that society, in the realities of everyday life, possesses objective facticity. For example, time and institutions such as schools and history are structures of reality imposed upon the conditions of the everyday realities of individuals. Such structures are experienced differently but can also be collectively ascribed with a common meaning – that is, with socially agreed-upon objective facticity (Berger & Luckmann, 1991).

The interpretivist paradigm derives from, among others, Max Weber's understanding-oriented approaches of *verstehen*,[5] which refer to the attempt of social scientists to understand meanings intended or expressed by people and the contexts in which such meanings emerge (Chowdhury, 2014). In addition to understanding meanings and motives behind human action, interpretivism,

[5] In German, *verstehen* means to understand, perceive, know and comprehend the nature and significance of a phenomenon (Chowdhury, 2014, in reference to Elwell, 1996).

as a philosophical approach, emphasises causal explanations incorporated into the processes and results of actions. Notably, however, such causal explanations do not refer to fixed external forces based on empirical law but seek to capture the complex interactions of internally related social rules, values or meanings (Johnson, Buehring, Cassell, & Symon, 2006, p. 132). One way of illustrating such complex interactions is to use ideal type constructions that make contextual peculiarities understandable in a pragmatic way (Weber, 1904/1977).

The studies conducted for this thesis therefore intended to formulate interpretivist-based hypotheses open to empirical verification. At the same time, their exploratory research included creating rich data from key actors in order to develop understandings of a largely unknown research area and thereby generate pertinent hypotheses and propositions for further investigations (Yin, 2003).

Overall design

Given that education about food in HCS is sparingly documented in research, specifically in relation to the newly introduced perspective of sustainable development, a major element of designing the research for the thesis was determining which units of analysis could be relevant to approaching the phenomenon under study. As having adopted an interpretive orientation, there are many possible 'units of analysis' (Schwandt, 1998). Therefore, following the overall thesis aim and guided by Goodlad's (1979) curriculum domain concept, data from the operational level of teaching and learning were chosen to be collected, largely because the school context is viewed as the necessary unit of analysis in exploring representations of curriculum practice (Goodlad, 1979).

Before collecting data in the school setting, however, it was necessary to gain background information about the context and intentions therein, as a result of which national syllabuses became of particular interest as a second unit of analysis. Past and present syllabuses for HCS were chosen for analysis because historical documents have been argued to provide a window into past events and ideologies that inform present situations and thus afford contextual information crucial to understanding the setting under study (Almqvist et al., 2008; Bowen, 2009; MacCulloch, 2011). Last, following the interpretivist orientation and with reference to Gustavsson (1999), the subjective perceptions of the actors within the educational setting were incorporated into the analysis.

To that end, the perceptions of teachers served as the last selected unit of analysis.

In sum, the design of the thesis was planned to incorporate interpretivist and exploratory studies of substantive content and of influencing factors within the domains of *formal, perceived, operational* and, to some degree, *experiential/ learned* curriculum. Those decisions resulted in the planning of three substudies and the generation of four papers, as described in Figure 1.

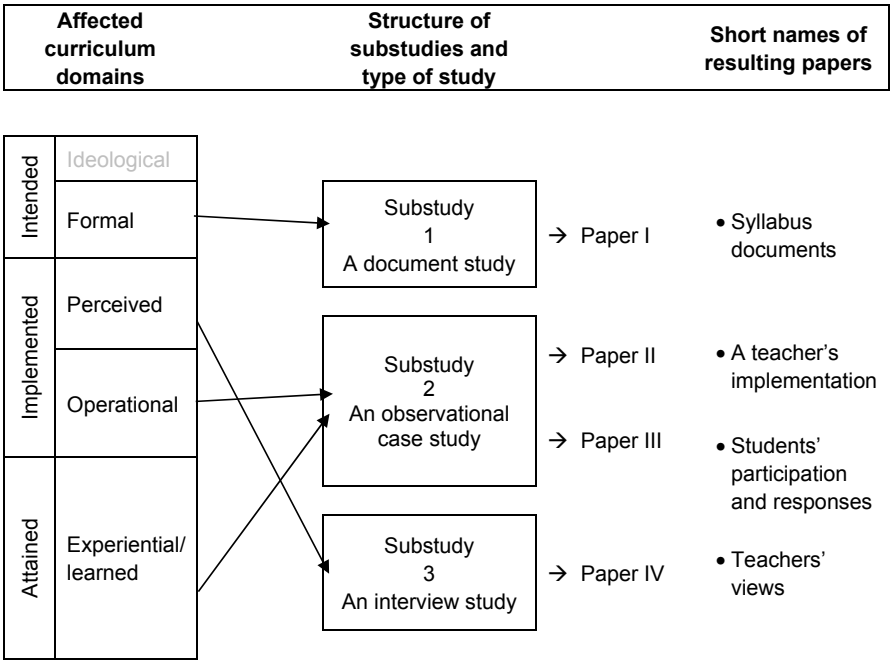


Figure 1 Illustration of the planned substudies

The intention with Substudy 1 was to explore how a perspective on sustainable development could be understood within the formal domain of HCS curriculum based on expressed content knowledge regarding food in current and past national syllabus documents of HCS and in relation to the three subject-specific perspectives of health, economy and environment. Substudy 1 generated one paper (Paper I).

Substudy 2 was designed as an observational single-case study to investigate authentic HCS lessons and had a focus on two elements: on the one hand, characteristic features of content knowledge regarding food practices associated with a perspective of sustainable development in a teacher's in-class lessons

and, on the other, patterns of how pupils participate in, and responds to this implemented education and what influencing factors could be important for students' goal achievement opportunities in such education. Substudy 2 generated two papers (Papers II and III).

Last, Substudy 3 focused on teachers' perceptions of the mission to implement a perspective of sustainable development in HCS food-related education, as well as factors perceived to inhibit and facilitate that task. Substudy 3 generated one paper (Paper IV).

All substudies generated qualitative data that were analysed using similar yet significantly different procedures of qualitative data analysis (Table 2).

Table 2 Overview of the contents of the papers

	Paper	Sources of data	Year of data collection	Units of analysis	Analytical methods
I.	Syllabus documents	Written syllabuses	2012–13	Syllabuses (6) Commentary documents (3)	Qualitative content analysis
II.	A teacher's implementation	Field notes Audio recordings Prompts for assignments and tests	2013	Teacher (1) Lessons (14)	Qualitative content analysis
III.	Students' participation and responses	Field notes Video recordings Audio recordings Answers to written assignments and tests	2013	Students (27) Lessons (14)	Thematic and ideal type analysis
IV.	Teachers' views	Interview transcripts	2015–16	Teachers (5)	Thematic analysis

Document study (Paper I)

Paper I, titled *Food in Relation to Sustainable Development Expressed in Swedish Syllabuses of Home and Consumer Studies: At Present and Past,* examined goals on syllabuses, content knowledge, materials and methods by focusing what was expressed in the syllabuses. The full aim of this paper was

> to illustrate how the knowledge area of food is expressed in current and past Swedish syllabuses of home and consumer studies in relation to the subject-specific perspectives of health, economy and environment, and their operationalization into sustainable development. The specific research

> questions are: 1. What aspects of health, economy and environment in relation to food are expressed in home and consumer studies syllabuses? 2. What differences and similarities can be found over time in and between these aspects, and how could the expressions of food be operationalized into sustainable development?

The texts selected to be analysed consisted of all six national syllabuses published between 1962 and 2011. The starting point of the 1962 syllabus was chosen because that year marked the introduction both of nine-year compulsory schooling in Sweden and of HCS as a mandatory subject for all Swedish students, both boys and girls. Those two conditions, in applying to all six syllabuses, were relevant circumstances given the similarities of the present situation and those indicated by past syllabuses. The documents analysed were thus the national syllabuses of 1962, 1969, 1980, 1994, 2000 and 2011, as well as three syllabus commentaries that provided support for assessment, which were available for the syllabuses of 1969, 2000 and 2011 (National Agency for Education, 1962, 1969a, 1969b, 1980, 1998, 2000a, 2000b, 2011a, 2011b).

Observational case study (Paper II and III)

According to Yin (2003, p. 13), exploratory case studies are preferable when the boundaries between the phenomenon under study and its context are not evident. Accordingly, for paper II: *Teaching Sustainable Food Consumption in Swedish Home Economics,* and paper III: *Pupils' Participation in and Response to Sustainable Food Education in Swedish Home and Consumer Studies,* a single-case study with a critical case selection (Yin, 2003) was conducted in a midsized school in southwestern Sweden in 2013. The study was performed to investigate implemented content knowledge (Paper II), as well as students' participation in and responses to its implementation (Paper III), in a naturalistic setting.

The full aim of paper II was

> to explore and describe characteristic features of knowledge content regarding food-related education, implemented from the perspective of sustainable development in a teachers classroom practice of HCS…Our guiding questions are: 1) In what ways is the perspective of sustainable development concretized in the food-related education? 2) What content is centred and prioritized in this implementation?

By contrast, the full aim of paper III was

> to explore conditioning factors influencing learning opportunities in food-related education, taught from a perspective of sustainable development.

> More specifically, the research questions are: 1) How do pupils participate in and respond to the education in authentic HCS lessons, and 2) What are the influencing factors that could be important for pupils' goal achievement opportunities in this area of the subject?

Design and case selection

Designing and conducting case study research requires a wide range of considerations and decisions during a thoroughly structured phase of preparation. Such considerations pertain not only to the design and data collection methods but also to case selection, strategic approaches and the roles of researchers (Corbett–Whittier, 2012). In the following, key considerations and decisions will be addressed starting with the case selection rational.

A single-case study is especially appropriate under certain circumstances such as when it represents the *critical case* in examining a context having a clear set of propositions as well as circumstances within which the propositions are believed to be true (Yin, 2003). In such situations, the case are chosen in light of criteria corresponding to those propositions or circumstances. Depending on the research aim or questions, such studies can challenge, test or, as in the case presented, suggest enhanced knowledge or understandings of pre-existing propositions or circumstances. Accordingly, to study that case, the selected school met numerous frame factor criteria identified as significant to delivering the kind of high-quality HCS education expected by the formal documents (Grönqvist & Hjälmeskog, 2006; Lindblom, 2016; Svenska Kommittén för Hushållsvetenskap, 2009). Those criteria were having appropriately equipped HCS facilities, a class with no more than 16 students, a lesson of at least 120 minutes and a formally qualified HCS teacher with a pronounced interest in and vision for accommodating the perspective of sustainable development expressed in the formal documents. Those criteria were applied in order to identify a context with conditions maintaining the expectations expressed in the national syllabus for HCS in which to gather sufficiently rich data to enable the analysis within those conditions.

Case access and participants

Suggestions of relevant cases that fulfilled the selection criteria were discussed with colleagues who operates within the HCS teacher education programs at the University of Gothenburg. Of the proposed teachers contacted by email, one immediately responded with interest to participate. After initial contact and visits to confirm the case fulfilment of criteria and interest, the teacher and the

school management approved access to the field to be studied. Although observation initially targeted lessons delivered in ninth grade to study the fulfilment of upper-tier knowledge requirements, a pilot study and discussions with the teacher instead encouraged the observation of eighth grade, during which the teacher had prescheduled lessons with the most HCS content knowledge about food from a perspective of sustainable development.

Participants in the study thus consisted of the teacher and 27 students. On the one hand, the teacher was formally qualified via a teaching degree to teach HCS as well as Swedish to students from fourth to ninth grades and who worked as teacher for 14 years at the time of the study. The teacher was also a so-called 'first teacher' (a type of higher-degree teaching employment in Sweden) who managed ESD competence development and assessment among the school's teaching staff. On the other hand, the 27 students, all aged 14–15 years, were from two eighth-grade classes and taught in half-class groups of 13 and 14 students.

Of the 10 lessons planned to be taught in the eighth-grade HCS class, each of which was 180 minutes long, eight lessons were judged to be relevant to the study's purposes. The two excluded lessons contained teaching not related to food education but about the consumption of clothing, electronics and mobile phone subscriptions, among other things. Although a total of 16 lessons were thus planned to be studied, two additional lessons were excluded due to unforeseen circumstances, including classroom shortages and staff illness. Ultimately, 14 lessons were eligible for field study: eight lessons in one class and six lessons in the other.

Pilot study and data collection methods

Preparation for the study began a year and a half before the study was conducted. In the spring semester of 2012, sample observations were performed by the author and a co-researcher during two lessons in one sixth-grade and one seventh-grade class in order to form a preliminary understanding of the context and interactions therein, as well as what could or could not be observed.[6]

The classroom consisted of a single square room, half of which was divided into eight kitchen units, whereas the teacher's desk and the dining and study

[6] Observations for the pilot study did not target a specific grade because the purpose was to form an overall understanding of the space and activities, not to interpret meanings therein.

areas were in the other half. Consequently, different observational techniques were needed in order to triangulate and form an overall picture of the activities taking place in the classroom. To that end, several data collection methods were considered, including observations and video and audio recordings, several techniques of which were tested in a pilot study conducted in ninth-grade classes during the autumn semester of 2012. The tested techniques included having movable or fixed camera angles, using camera sound recording, using extra microphones and using a wide-angle camera lens.

As a result of the pilot study, different sources of data for the primary case study were selected, including direct observations with field notes carried out by the author, fixed video recordings of students as they worked in a kitchen unit, audio recordings of lesson activities and texts from written assignments and tests.

Direct observations

The primary method of data collection was direct observation, in which the field researcher is a known but passive observer (Yin, 2003). In all observations, the field notes, are viewed as a crucial element – 'fieldwork is only as good as the field notes' (Delamont, 2008, p. 47) – which can be constructed in various ways. The reported study's particular techniques for developing field notes were inspired by the recommended practices of Delamont (Delamont, 2008; Walford, 2009) and Jeffery and Troman (2004). Regarding notes written in the field, or in-field notes, Jeffrey and Troman (2004) have advised writing down as much as possible in the case that it will later become important for analysis. By some contrast, Delamont (2008) has advised writing down information systematically, beginning by documenting basic information regarding time, group size and group composition, among other things, followed by documenting events using all senses, including who talks to whom, how much of lessons are spent on groups, individuals and couples, the purpose of lessons and the learning atmosphere (Delamont, 2008; Walford, 2009). Delamont (interviewed by Walford, 2009) has also advised using not one but several notebooks for creating and storing notes. In accordance with that approach, the study reported here involved using three notebooks: one for in-field notes following the mentioned advice, another for out-of-field notes (expanded transcriptions or detailed narratives of in-field notes written in computer files after each observation) and the last as a field diary of the observer's thoughts, reflections, initial interpretations and questions as well as aspects requiring

sustained focus. In general, by using a field diary, an observer can separate initial, possibly naïve interpretations and evaluative thoughts from intentionally more descriptive in-field notes.

Video documentation

Of the many activities that occur in an HCS classroom, those involving cooking processes contain the most sounds, movements and interactions. For those activities, mere observation was judged to risk creating fragmented coverage of the processes and interactions taking place. For that reason, video and audio recordings were chosen as supports to the written field notes, as recommended by Lave and Kvale (1995). Video and audio recordings have become increasingly used in qualitative research to support or supplement field notes taken in naturalistic settings (Luff & Heath, 2012). The approach requires several active choices, including about whether the video camera should be fixed to a tripod or the researcher should circulate the room while holding the camera (Heath, Hindmarsh, & Luff, 2010). Amid the many activities and movements already occurring in the HCS classroom, circulating with a video camera could have disturbed the workflow; accordingly, positioning the camera at a fixed angle in one of the eight kitchen units was judged to be a better option. In that way, the observer could move around freely and distribute focus on activities in the filmed kitchen unit and the other seven kitchen units, as well as general events and the atmosphere of the classroom. Altogether, the video recordings afforded an opportunity to reconstruct students' work processes from beginning to end as well as in retrospect and to notice details that otherwise might have been passed unobserved (Lave & Kvale, 1995).

At the same time, in response to the high level of sound during cooking processes, especially when several students were working in or stopping by a kitchen unit, audio recording with the camcorder was complemented by mp3 sound-recording microphones worn around the neck. In that way, audio recordings also captured conversations outside the frame of the camera, including when students were selecting foodstuffs from the food trolley accompanying each lesson.

Video and sound recordings were also used to support data collection during group discussions or longer lecture-based teaching sessions. On those occasions, the mp3 sound-recording devices were placed on tables or the teacher's desk, whereas the video was in its usual position, albeit at a slightly turned angle.

Text within written assignments and tests

To collect as much information as possible in the case that it could later become relevant for analysis, nearly all homework assignments, pages read in textbooks, anonymised responses to written assignments and written test questions and answers were gathered with the help of photo documentation. In total, 25 written tests and 56 evaluative assignments were collected. Details in the classroom, including pictures of walls, writing on the whiteboard and the covers of books on bookshelves, were also capture via photo documentation in order to capture as many representations of the context as possible.

In-field procedure

Every field visit observation began during the teacher's preparation period prior to when students entered the classroom, during which time brief conversations were held regarding the teacher's thoughts and intentions regarding the lesson. When students arrived, the observer sat near the sidewall of the classroom with a pen and notepad, which was also the observer's position during the initial lecture and final discussion. During lessons with cooking processes, the observer moved more freely in the classroom but with a withdrawn approach, and interactions with or questions posed to students were limited in order to not disturb the activities. One of the eight kitchen units was usually empty, which provided a continually visited vantage point for the observer. At the end of the day, the teacher usually had time for a short informal conversation about the lesson's outcomes.

During every lesson involving a cooking process, a video camera was positioned in the same kitchen unit, in which two students per lesson performed their cooking processes. During the subsequent lesson, new students were invited to perform their cooking processes in the filmed kitchen unit in order to capture a variety of students in the overall video recording. Students in the filmed kitchen unit were provided with microphones and instructed in how to turn them off during breaks. Since the video recordings were complemented with mp3 audio-recording devices to capture all relevant sounds, the video sequences were transcribed while listening to all complementary sound recordings of the same event. In sum, the recordings amounted to approximately 2,600 minutes, or roughly 43 hours of footage.

Out-of-field procedure

Directly after each field visit, initial ideas and interpretations were first written in the field diary and not given any more attention until immediately before the subsequent field visit. Next, the sparing, handwritten in-field notes were converted into more vividly descriptive out-of-field-notes within hours after the observations. All recorded sources of data were reviewed and transcribed when time was available, and sections representing those notes were transcribed differently based on the observer's judgment of the content's relevance. The different transcripts were inserted in chronological narratives of each lesson, which resulted in 14 lesson files containing from four to nine single-spaced pages for a total of 102 pages. By combining all data sources in lesson narratives, it was possible to maintain an overall perception of the context in which an event occurred. For example, if a written assignment had been distributed during a lesson, then a transcribed version of the assignment questions and students' answers were inserted into the narrative. In that way, notes of students' reactions or comments could be found in direct connection to its cause. In effect, the different data sources were not analysed separately but as a whole.

Concerning the placement of the various transcripts within lesson narratives, the first section of each narrative typically consisted of expanded field notes on the introduction of the observed lesson, as well as quotations from interesting excerpts of the lesson or verbatim transcripts of longer conversations from sound recordings. The second section typically described the cooking process of the lesson based on video and audio recordings of the filmed kitchen. Those transcripts shifted between summarised descriptive interpretations of what occurred in the video sequences and transcripts of what was said verbatim or done step by step, if not both. Differences in the level of detail in transcripts stemmed from the author's assessment of the relevance of content and the need for detail in relation to the study's aims. For example, students' conversations about leisure time was not transcribed. After the video and audio transcripts, the third section typically contained complementary expanded field notes of observations from the filmed kitchen, other kitchen units and the classroom in general. Last, the fourth section included outlines of expanded field notes and selected verbatim video or audio transcripts of the concluding evaluation or discussion, if not both. For ease of recognition, each data source was uniquely marked in all lesson narratives.

Interview study (Paper IV)

In paper IV, titled *Home Economics Teachers' Perceptions of Facilitating and Inhibiting Factors When Teaching Sustainable Food Consumption*, was generated from a study that involved semistructured interviews conducted with a purposeful sample of five experienced HCS teachers who taught higher-level HCS at compulsory school. The aim of paper IV was

> to explore HCS teachers' perceptions of the mission to implement a sustainable development perspective in food-related education as expressed in the national syllabus. Furthermore, to identify perceived possible influencing factors conditioning teaching opportunities regarding this task. The specific research questions are: 1) In what ways are the syllabus objectives regarding sustainable development understood and implemented in food-related HE education? 2) What possible influencing factors are perceived to inhibit respectively facilitate teaching opportunities towards the goals of the syllabus?

Interview participants were recruited by contacting five teachers working as *lokala lärarutbildare* ('local teacher tutors') on behalf of the teacher education programme held at the University of Gothenburg.[7] HCS teachers working as *lokala lärarutbildare* were targeted in order to recruit experienced, formally qualified teachers with a known interest in implementing a perspective on sustainable development in teaching HCS and who were active in HCS didactical contemplations. The selected teachers were thus expected to have reflected on issues of implementing such a perspective and to therefore be able to give rich answers.

All five teachers contacted consented to participate in the study. The teachers worked in schools of varying size in different environments in different geographical locations: urban (two schools), suburban (two schools) and rural (one school). Three of the participating teachers worked in three different municipalities adjacent to Gothenburg, whereas the other two worked in the municipality of Gothenburg but in different districts. All certified to teach HCS, the teachers had worked as HCS teachers for 7–32 years and, at the time of the study, taught students aged 13–15 years in seventh through ninth grades in compulsory school. Ultimately, the sample of participating teachers was judged

[7] *Lokala lärarutbildare* ('local teacher tutors') are experienced teachers working in the field who are designated to mentor and supervise university-level teaching students during their practical internships.

sizable and suitable in representing meaningful diversities in circumstances while dynamic qualities of their situations could be focused in-depth.

The interviews were semistructured and followed an interview guide with initial questions organised into four overarching themes without any predefined structure. The initial questions addressed background information related to teaching profession, as well as their understandings of sustainable development, household resource management and the perspective of sustainable development in the context of HCS. The themes centred on the teachers' views, including their perceptions, understandings, thoughts and feelings, about the mission to implement a perspective of sustainable development in HCS food-related education in consideration of teaching methods, assessment systems, students' responses and factors that inhibited or facilitated the execution of that task. The questions were open ended in order to allow room for new themes to arise, as well as to encourage reflection, instead of the mere reporting of, views expressed by the teachers.

The author, who conducted all interviews, has majored in food and health promotion, comprising health communication strategies, and practical training in person-centred, reflexive interview techniques (Barth & Näsholm, 2006). Some fundamentals of those techniques, including reflective listening, periodically summary statements and affirmation, were applied in the semistructured interviews to encourage the sharing of rich information about thoughts and feelings. In effect, the interviews followed an affirmative rather then a neutral approach (Pezalla, Pettigrew, & Miller–Day, 2012).

The interview guide was piloted with a former HCS-teacher currently working at the University. This data were not included in the analysis. No removal or addition of queries occurred, but minor modifications to phrasing were made.

Each interview was conducted at the teacher's school, usually in or near the HCS classroom, and lasted roughly an hour. Conversations during unrecorded guided tours of classrooms and related facilities provided additional information that was written down in the interviewer's notebook. Each interview was recorded with the participant's consent by using a primary and a backup audio-recording device.

The pilot interview and the first interview of the study were transcribed by the interviewer in order to reflect upon the interview techniques used. The remaining four recordings were transcribed by a professional transcriber from

an independent transcription service company. In total, interviews generated a total of 75 pages of mostly double-spaced text.

Data analysis

Qualitative data generated from the three substudies were analysed by using two procedures: qualitative content analysis (QCA), as described by Graneheim and Lundman (2004), and thematic analysis (TA), as defined by Braun and Clarke (2006).

These two approaches are often referred to interchangeably as if they are one and the same method for analysing qualitative data (Vaismoradi, Turunen, & Bondas, 2013). In this theses, however, QCA is perceived to pose exceptional potential when meanings and understandings of context-specific terms and concepts were unfamiliar or unknown to the interpreter. In such cases, QCA can be applied in a highly comprehensive, stepwise initial phase in which words, sentences and concepts are deconstructed and later reconstructed, both in and out of context, in order to develop an understanding of underlying meanings to be grouped in descriptive themes and categories. This initial phase is perceived to distinguish QCA from TA because of the phase's potential to quantify data by counting, for example, the occurrence of certain concepts. However, whether or not that potential is exploited, the initial phase contain a risk of obscuring contextual links when units of text are deconstructed (Vaismoradi, Turunen, & Bondas, 2013). Such risk can be avoided by systematically returning to the source and placing the interpretation of a unit of text within its context (Graneheim & Lundman, 2004). By contrast, TA was perceived to be a more applicable technique for interpreting structures and interconnections when initial understanding of context-specific notions have been established, although continuously open for re-evaluation.

Based on the differences outlined above, QCA was applied in the first two papers, which placed greater emphasis on a descriptive substantive angle, whereas TA was applied in the two final papers, which placed greater focus on both interpreting interconnections between teaching content and conditioning influencing factors.

The subsequent phase of familiarisation with data was similar in both QCA and TA. During that phase, transcription and an extensive reading of transcripts were performed to obtain a sense of 'the whole'. In the phases that followed, the principal difference between QCA and TA was that QCA involved

organising codes, whereas TA involved generating codes (Vaismoradi et al., 2013).

The following section presents in general terms how the two analytical approaches were used in each paper. For a more detailed description of the use of the approaches, see each respective paper or manuscript.

Qualitative content analysis (Paper I and II)

To organise codes in Papers I and II, the text of a transcript was organised into words, sentences or paragraphs containing *meaning units*, or characteristics related to each other in terms of content and context (Graneheim & Lundman, 2004). Meaning units were condensed – that is, the text was shortened while preserving the core of its meaning – and given codes. The various codes were evaluated in terms of their differences and similarities and organised into primary categories and subcategories.

In Paper I, the initial organisation of syllabus text involved grouping meaning units into three overarching text domains – health, economy and environment – that formed a preliminary categorisation of the transcripts. All text about food-related aspects was extracted from the syllabuses and available commentary materials and sorted into a matching domain. The same parts of a text could be sorted into multiple domains if the content referred to more than one perspective.

The final subcategories resulting from the organisation of codes described subject content interpreted to relate to food and the three domains. The subcategories were organised into domain tables and compared among the six syllabuses to identify similarities and differences over time. Table 3 presents the categorisation of the environment domain.

Table 3 Example from an analytical domain (Paper I)

Occurrence of expressions of food related to environment in syllabuses for home and consumer studies in Sweden. The expressions were merged into 10 sub-categories and the occurrence in different syllabuses is marked with X. The sub-categories generated three main categories.

	Syllabus:	**-62**	**-69**	**-80**	**-94**	**-00**	**-11**
Sub-categories	Methods to prolong the durability of foodstuffs	X	X	X	X	X	X
	Utilization of seasonal resources	X	X	X	X	X	X
	'Household management' and natural resources	-	-	X	X	X	X
	Cooking methods and environmental perspectives	-	-	X	X	X	X
	Management of residues and leftovers	-	-	X	X	X	X
	Choices and their impact on the global environment	-	-	X	X	X	X
	Planning, choosing and buying environmentally friendly meals	-	-	-	-	X	X
	Standpoints regarding environmental sustainability issues	-	-	-	-	X	X
	Ethical positioning and environmental perspectives	-	-	-	-	X	X
	Food production, transport and environmental labelling	-	-	-	-	-	X
	Main categories:	1*		2**		3***	

*** To make use of what we've got**
**** To be conscious of the imbalance of earth's natural resources**
***** To act in support of forming an environmentally sustainable development regarding food**

Based on time-specific similarities and differences between the subcategories and syllabuses, primary categories were created and presented with a 'sustainable development-theme'.

The procedure for Paper II was similar to the procedure for Paper I, albeit without any initial domains. Table 4 shows an example of the organisational process of paper II.

Table 4 Example from qualitative content analysis (Paper II)

Meaning unit	Condensed meaning unit	Code	Sub-category	Main category
Teacher: Where do you place the pot? Student: On a stove burner that fits. Teacher: Why? Student: You save energy. Teacher: Yes, you do. Since unnecessary heat does not disappear from the sides.	You save energy by placing the pot on a stove burner that fits.	Right size stove burner to save energy.	To reduce the use of energy and water through approaches of cooking	Sustainable cooking
'The pot has been standing without a lid and with no boiling water, until the teacher asks the student what he thinks can bring the water to boil more quickly and at the same time save energy. The student puts the lid on. The teacher nods in the affirmative.'	Using a lid can bring the water to boil more quickly and save energy.	Use lid to save energy.		

Thematic analysis (Paper III and IV)

To generate codes in TA for Paper III and IV, the transcripts were thoroughly coded to identify, analyse and summarise themes of repeated patterns of meaning across the dataset.

In Paper III, coding was applied to patterns of behavioural, verbal, written and affective indicators of students' participating (or not participating) in the activities of lessons. TA was supported by applying the perspective of ideal types inspired by Weber (1904/1977). Briefly, ideal type analysis is an abstract model used to illustrate patterns of underlying factors or rules that govern the observed parts of reality (Chowdhury, 2014). In this thesis, ideal type analysis was applied to express coherence and wholes within the generated themes by unifying concrete individual phenomena into a cohesive analytical construction of purified ideal types (Weber, 1904/1977).[8] The final product of the analytic procedure was a mental construct of predominant patterns of students' characteristics synthesised into four ideal types of students formed subjectively in collaboration with TA. Table 5 presents an overview of the generated themes and ideal types.

[8] The word *ideal* should not be confused with the word *optimal* or *desired*; on the contrary, *ideal* refers to subjectively constructed ideas that are justifiable enough to be objectively possible in the social reality (Weber, 1904/1977).

Table 5 Codes, themes and ideal types generated (Paper III)

Coded themes	The Convinced	The Easygoing	The Unable	The Skeptical
Participation in open discussions	Subtle, well-informed, and prepared	Outgoing, informed, not prepared	Withdrawn, not informed, not prepared	Laid-back, partly informed, not prepared
Verbal expressions and behaviours during cooking processes				
➢ **Verbal expressions**	Primary emphasis on the **sustainability objectives related to the task**	Primary emphasis on **taste preferences**	Primary emphasis on **recipe instructions**	Primary emphasis on **taste preferences and convenience aspects**
➢ **Behaviour**	Perform actions **actively** based on sustainability objectives	Perform actions **sporadically** based on sustainability objectives	**Seldom** perform actions based on sustainability objectives	**Do not** perform actions based on sustainability objectives
Informed reasoning and justification expressed verbally and in writing				
➢ **Verbal**	Usually reply with deeper and wider reasoning **of their own**	Usually reply with deeper and wider reasoning **with the help of teacher** or peers	Usually reply 'I do not know' or 'what they said,' **with no** depth and width	Usually reply **contrarily** to what could be expected, but with **a certain** width or depth
➢ **Written**	Show **both** width and depth	1) Show width **but not** depth 2) Show depth **but not** width	Show **neither** width **nor** depth	**Do not participate** in written assignments
Questioning/critical or problematizing response	**Not** questioning/critical, **but** problematizing	**Both** questioning/critical **and** problematizing	**Neither** questioning/critical **nor** problematizing	Questioning/critical **but not** problematizing

Further analysis of the constructed ideal types involved interpretations of each ideal type's characteristic goal achievement opportunities and potential factors influencing those opportunities. Such analysis involved assessments of students' 'informed reasoning' and ability 'to give reasons' as defined by the official HCS assessment support and conceptualised in terms of *depth* in 'a reasoning chain' and *width* of aspects, provided by the National Agency for Education (National Agency for Education, 2014).

In paper IV, generating initial codes focused on patterns of teachers' perceptions related to the themes of the interview guide, especially perceived influencing factors related to the themes, as well as on newly emergent issues. To gain a better overview of the various resulting codes of influencing factors, all codes where manually sorted into four groups inspired by Linde's (2012) guidance; the groups queried *where* the influences were exercised (central or local level), *who* exercised the influence, *what* were the influencing factors and *how* the

factors influenced teachers' opportunities to implement sustainable development in accordance with the formulated curriculum. The analysis later generated final themes describing teachers' perceptions of influencing factors. In effect, the analysis was based essentially on data, but with conceptual guidance, called analytical induction (Bryman, 2011). Table 6 illustrates the sorting structure, as well as the example of a generated code and its associated theme.

Table 6 Example from thematic analysis (Paper IV)

Where	Whom	What	How	Codes	Themes
Local level	Principal or management group	Lesson duration	Almost all teachers express a belief that longer lessons have the highest advantages in terms of students' learning opportunities and work environment, compared with shorter lessons, which afford no time to connect more profound theoretical aspects to practical teaching.	Depth in teaching	Continuity and depth in teaching

The author conducted the core analysis of all papers supported by recurring presentations and discussions with both coauthors of each paper and with participants of the Swedish Research School of Home and Consumer Studies.

Methodological considerations

Ethical considerations

Studies involving research on humans should be considered in terms of the rules of the Ethical Review Act (SFS, 2003:460) regarding the management of sensitive personal data (§3) and use of methods that intend to affect people physically or mentally (§4). The reported substudies did not manage any personal data since such data were irrelevant to the aims of the studies, and they did not intend to affect people either physically or mentally. In the case study, the authentic classroom practice was investigated, not altered teaching content. Potential effects or alterations of the authentic practice caused by the mere presence of a field researcher could be relevant to the interpretation of results but do not fall under §4 regarding intention to affect. Thus, the studies were not subject to the Ethical Review Act.

However, ethical requirements regarding the consent, confidentiality and use of information proposed by the Swedish Research Council (Vetenskapsrådet, 2002) were observed. Written and oral information regarding the aims and designs of the studies, voluntary participation, data collection methods and means of use were provided to all participants.

In the case study, written consent was collected from all students and from their guardians if they were less than 15 years old during both the pilot study (Appendix I) and primary study (Appendix II). The consent form provided for the primary study contained different options with different degrees of participation: full participation in video and audio observation (recordings could be used in educational and scientific conferences), participation in video and audio-observation (recordings could not be used in educational and scientific conferences) and no participation. Further clarification of the purpose and use of the video and audio recordings was provided to participants before every recording session. Participants were also informed that no teacher or other unauthorised person would have access to the recordings and that no skills or behaviours of individual students would be recognisably portrayed in reporting the studies.

Other ethical decisions were to not use video recording during formal homework debriefing or task evaluation in class because the pilot study suggested an inhibiting effect on students' verbal participation. Video recordings were also not made as students dined in class in order to prevent feelings of intrusion of privacy.

Scientific quality: Trustworthiness

Reliability and validity represent important criteria for reporting the quality of research. However, the concepts have different implications for qualitative studies than for quantitative ones (Bryman, 2011; Patel & Davidson, 2003). Some researchers have argued that quality in qualitative studies should be based on criteria other than reliability and validity because alternative interpretations of research findings are always possible (Bryman, 2011). One such criterion that has been proposed is the trustworthiness of the research process, meaning establishing arguments for the most probable interpretation (Bryman, 2011; Graneheim & Lundman, 2004). The concepts used to describe trustworthiness are *credibility*, *transferability*, *dependability* and *confirmability* (Bryman, 2011).

How well a researcher has made findings *credible* can be evaluated in how well data and data analysis procedures align with the intended focus of the research (Graneheim & Lundman, 2004). In this thesis, selecting units of analysis, data collection methods and participants sought to provide data triangulation in order to increase the possibility of providing rich data concerning varying representations of how education about food from the perspective of sustainable development could be understood in HCS practice. The descriptions of authentic HCS lessons also derived from several data sources. The procedures of analysing data are described in detail in this thesis, and the individual papers give rich accounts and illustrations of how categories and themes were shaped. Moreover, using Goodlad's (1979) model of curriculum dimensions expects to enable readers to sense the alignment between the intended and addressed research focuses, for doing so afforded a transparent structure throughout the planning and reporting of the research conducted for the thesis.

Transferability of research refers to the applicability of findings from a study to other comparable contexts. The conventional critique of small-scale qualitative studies holds that every person and situation in life is unique and that one can never completely and reliably apply such results to another context. (Shenton, 2004). However, in interpretative qualitative research, it is presumed that every unique case also holds something generic that is transferable to other similar situations (Pring, 2004). In the studies for this thesis, units and methods of analysis, as well as participants and data sources, were selected to offer understandings that could exceed the anticipated findings of the study. For example, parts of a framework common to all HCS teaching in Sweden were central to the analysis, and the findings related to the framework can be discussed in general terms, even if not generalisable in its details.

Further, the *dependability* of research refers to auditing processes in which the researcher accounts for instabilities or changes in the research focus and design that might have changed data over time (Graneheim & Lundman, 2004). That criterion has been addressed in the research conducted for this thesis by providing accounts of all phases of the research process and by presenting and discussing the data and analytical constructions at different stages with supervisors, coworkers and practitioners in the field of HCS.

Last, *confirmability* is based on the acknowledgement that research is never objective (Bryman, 2011). Thus, the criterion of confirmability means to ensure

that the researcher has not knowingly allowed personal values or interests to direct the results and conclusions of the research.

Although the thesis has been developed on the assumption that the researcher, as an instrument, provides meaningful ways of understanding a complex phenomenon, the mentioned measures have been taken to ensure that the results are grounded in the realities studied, not in the researcher's subjective imagination.

Results

The results of the studies conducted for this thesis suggest that incorporating a perspective of sustainable development in the national syllabus of HCS in Sweden, particularly regarding its subject knowledge base about food, can pose starkly different implications in various domains of a curriculum-focused perspective. This chapter first summarises principal results from each of the four papers that form the thesis, after which it presents points of intersection among the papers.

Syllabus documents (Paper I)

The primary results of Paper I suggest that the expressions of food-related content knowledge in HCS formal syllabuses have undergone major transformations since 1962. Although expressions related to the subject-specific perspectives of health, economy and environment among the syllabus documents have exhibited varying degrees of focus and emphasis in the last several decades, major similarities among them also recommend their clustering in pairs – the syllabuses of 1962 and 1969, the syllabuses of 1980 and 1994 and the syllabuses of 2000 and 2011 – according to period. Each pair of syllabuses was analysed in terms of three main categories that described substantive content related to respectively health, economy and environment. Together, the resulting categories formed three overall themes that explained an idea of how the content knowledge expressed in HCS syllabuses 'constructs' or 'operates' within a characteristic perspective on sustainable development for each time period. These themes were: a) maintenance of family and household, b) maintenance of the earth resources, and c) maintenance of the future generations.

From 1962 and 1969, the two earlier syllabuses were predominantly concerned with household and family issues related to perspectives of health and economy and generally prescribed practical, hands-on tasks and calculations comparable to practices that students could readily experience. By extension, the syllabus documents expressed students as social agents to be fostered into specific and ordered ways of food-related conduct in their homes

and within their families, as well as to be prepared to fulfil the duties and responsibilities required of daily activities as members of future households and families. Although tangible tasks and experience-based activities were prescribed by all six syllabuses, the varying motives and morally charged explanations for performing those tasks and activities have ranged between the syllabus-pairs from concern for the household and family to concern for consequences beyond those immediate contexts. Such divergence in concerns occurred in the late-twentieth-century syllabuses from 1980 and 1994, which expressed global concerns as well as stressed personal responsibility for being aware of those concerns. That pair of syllabuses described students as social actors who should be fostered to respect both the environment and the management of sheered resources.

The most recent pair of syllabuses, from 2000 and 2011, was found to contain expressions of increasingly abstract, complex content knowledge, including contemplations of cultural, social and ethical aspects of food consumption and production. The currently used 2011 syllabus adopts a far broader, less linear view of the food chain in expressing content knowledge concerning how choices and consequences link back across different stages or levels. The two syllabuses contain expressions of students as active participants in shaping sustainable food practices and as individuals who are capable of navigating change, demonstrating a sense of responsibility for issues that extend beyond their immediate circumstances and applying informed reasoning and action while grasping the big picture. These forms of desired abilities – to understand complex notions, engage in various forms of reasoning and navigate obstacles by careful thinking – represent cognitive abilities that seems fairly new to the HCS syllabus.

Altogether, the results described in Paper I suggest that Sweden's current HCS syllabus possesses characteristics of a broadened perspective on food dimensions yet continues to demonstrate important elements established by its predecessors. These results indicate that the content knowledge of food-related issues in HCS has gradually expanded.

A teacher's implementation (Paper II)

The major findings presented in Paper II indicate that, in the observed HCS classroom, the implementation of education about food from the perspective of sustainable development involved a content knowledge that centres the

practice of preparing a homemade meal.[9] The teacher's prioritised content areas being linked as parts to this meal-making practice emerged as three process-related categories – sustainable food selections, sustainable cooking approaches and sustainable food (re)utilisation. These prioritised contents areas were deliberated predominantly when put into practice, and with the subject-specific perspectives of health, economy, environment as a basis for all implementation, in which both ethical and hedonic aspects were ascribed to the health perspective of food. These subject-specific perspectives were stressed to varying degrees depending on the process-related category. For instance, aspects within the perspectives of health and the environment dominated the category of sustainable food selections, whereas aspects of an environmental and economic perspective dominated both sustainable cooking approaches and sustainable food (re)utilisation. Common to each category was thus a dense focus on the environmental perspective.

In the implementation of these process-related categories, didactical questions of what, why and how were often deliberated in class. As a result, the teacher could encourage students to think reflexively about consequences and inter-relations among different levels of the food system. Thus, by placing a homemade meal practice in the centre of implementing a perspective of sustainable development, the teacher provided a multirelational approach focused on sustainable alternatives related to specific food domains, the sum meaning of meals and meal patterns over time.

Paper II also presented challenging aspects, both observed and expressed, associated to the teacher's implementation of this perspective in practice. For example, students' individual taste preferences sometimes contributed to resistance in following lesson instructions to incorporate, for instance, plate model recommendations and environmentally friendly ingredients into their meal-making practice. At the same time, the possibilities of accessing subject-specific teaching material – for example, access to organic or locally produced ingredients such as meats and eggs – were limited in some aspects. Although that limitation was sometimes resituated as an opportunity for reflection, students complained that the reorientation was contradictory.

The final challenge presented in the paper addresses the notion of responsible consumerism imbedded in the notion of sustainable development, which was sometimes contradictory in its very complexity. For instance,

[9] *Homemade* describes self-made meals created in an HCS kitchen.

selecting organic food was sometimes highlighted as a responsible choice from an environmental and health-focused perspective, whereas it could be less responsible in relation to the student's personal finances or, if the product originated abroad, even the national economy. The challenge seemed to be that there are no simple heuristic rules for what food products a consumer ought to select in order to contribute to sustainable development, because such a conclusion could reasonably vary from whom the choice benefits most. Consequently, when students asked for ready advice of what food-related aspects to prioritise, the teacher responded by providing personal principles of reasoning. For instance, advocating organic ingredients over locally produced nonorganic ingredients or allowing students to choose types of food or methods according to their taste preferences instead of task instructions but requesting their verbal reasoning of different implications from a sustainable development perspective.

Students' participation and response (Paper III)

The primary findings presented in Paper III suggest that how the participating students participate in and respond to food-related education taught from a perspective of sustainable development in HCS can be described according to four constructed ideal type students: the Convinced, the Easygoing, the Unable and the Skeptical. Briefly, the Convinced student represent a subtle ideal type distinguished by his/her awareness of the overall objectives of learning sustainable dimensions, as well as of actions towards those ends, and anticipates a higher level of abstract reasoning related to meal-making processes. S/he is able to discuss different aspects of food choices in a more independent way than other student and addressed several links to a perspective of sustainable development in 'a reasoning chain' regarding food-related choices, typically by identifying a consequence of such choices on a national or global level. By contrast, the Easygoing student represent an outgoing ideal type distinguished by taking a relaxed approach to the overall objectives related to sustainable dimensions, typically by prioritising taste and satisfying his/her appetite. Instead of immediately offering developed reasoning, s/he more commonly replies with shorter answers that, together with support from the teacher, ultimately attain a more developed level of reasoning. By further contrast, the Unable student is an withdrawn ideal type who seldom tries to reason or justify choices in relation to sustainable dimensions during verbal evaluations and usually agrees with

other groups about why or how certain choices have been made. S/he prefer to not even try, despite help offered by the teacher, and seems to have a lower level of basic knowledge and experience than what the tasks demands. Last, the Skeptical student is a laid-back ideal type who often responds by stating the opposite of what could be regarded as an expected answer and seems reluctant to validate norms of sustainability embedded in the content of lessons. Although the Skeptical ideal type responds by stating the opposite of what could be expected, the answers nonetheless demonstrates 'width' or 'depth' of critical reasoning from different perspectives.

Regarding the various characteristics of ideal types described and summarised as favourable or unfavourable for goal achievement opportunities, results suggest that the Convinced and Easygoing ideal types demonstrate more of the characteristics favourable to such opportunities – for instance, active and dynamic participation, and recurrent informed reasoning and problematization – whereas the Unable and Skeptical ideal types demonstrated more of the unfavourable characteristics, including limited participation and random, and uninformed reasoning or problematization. The results therefore suggest that students who predominantly possess characteristics of the Convinced or Easygoing ideal type have greater opportunities for goal achievement, whereas students who predominantly possess characteristics of the Unable or Skeptical ideal types risk falling behind in their understanding and application of the content knowledge related to food and sustainability dimensions.

The summarised unfavourable characteristics, which added to those mentioned include uncritical participation (the Convinced) and casual response to task (the Easygoing), were further discussed in light of influencing factors perceived as embedded in the social context: accepting the sustainability message; stereotypical portrayals of being responsible consumers; structures supporting students taste-orientation at the expense of task-orientation; as well as high demands on analytical ability. These underlying factors were perceived to affect the students' goal achievement possibilities in an unequal manner.

Teachers' views (Paper IV)

The major results presented in Paper IV describe a perception shared among teachers of having an important and meaningful role in the transition towards the next generation of sustainable consumers. Within the HCS context, a perspective of sustainable development was described as learning the actions or

'doings' of sustainable food consumption alternatives as a first step. Realising that first step meant recognising personal relevance in food-related issues that students, as consumers, encounter on a daily basis and can perceptibly influence. The second step involved broadening students' awareness by providing and asking for more abstract interlinkages among local, national and global levels.

For teachers to be able to implement those steps and related processes in a cohesive, meaningful whole, the interviewed teachers outlined numerous factors that had facilitated or could facilitate the realisation of such goals. In referring to those facilitating factors, teachers explained in detail how the factors could be helpful, but in particular in what ways in which the factors were inhibited by other contextual influences. TA generated four themes representing facilitating factors, with text outlining their influence on teachers' opportunities to implement the perspective of sustainable development in food-focused education in HCS. Those themes were: subject-tailored planning and assessment time; continuity and depth in teaching; purposeful teaching materials; and, both legitimacy and management support. The overarching inhibitor upon those facilitating factors was limited time for planning, preparing, implementing, assessing and organising facilitating factors. Details of inhibiting factors were further linked to several contradicting circumstances within the HCS curriculum context, including unjust workloads compared to other subjects, limited freedom in scheduling, the low priority of strengthening HCS resources and the lack of credibility and support at local levels. Such inconsistencies were expressed to be inhibiting to students' rights to equal education and quality secure assessment processes. Taken together, teachers' possibilities to carry out the important contribution in the transition towards the next generation of sustainable consumers seemed to be reduced in practice. Notably, the circumstances that induce the use of lecture-based teaching sessions and written tests alone to accommodate the perspective of sustainable development.

Points of intersection

Comparing the results of the four papers revealed some internally related points of intersection, which are presented in the following sections.

Agency and knowledge

Within the results informing this thesis, different conceptions emerge of what knowledge HCS education affords, what role student should have in this process, and how to implement this teaching. For instance, the current steering document of HCS formulates a view of students, both in their present and future everyday lives, as capable and responsible social agents who can act on increased awareness and manage changing conditions in consumer society. Accordingly, Papers II and III described how students were given space to make informed choices in practice. At the same time, Paper III suggested that many of the choices made in light of such freedom were oriented towards taste (or sometimes recipe instructions), not to participate in line with the objectives of the task at hand, which included practising ways to reduce the amount of meat in meals and to make a conventional meal process more sustainable. Consequently, implying that such democratic teaching approach promotes student autonomy, engagement and taste/sensory experiences but may not effectively engage students in opportunities to practice sustainable alternatives and develop how-to skills pertinent to manage changing conditions in the consumer society. However, the same aspect was described differently in the interview study, in which some teachers expressed giving less freedom to students to make choices within lessons targeting objectives of sustainable development, as expressed in following statement:

> I decide what we're going to cook, and it's obvious that not everyone will enjoy it. That's how it is. At the same time, we don't prepare large portions, not even when it's something that the students enjoy. The purpose is not for us to sit and feast on food, because that they can do elsewhere. Instead, they're supposed to learn different methods and show me that they can use those methods. (Teacher in the interview study)

Thus, Papers II and III imply that HCS students do not necessarily have to practice carrying out suggested healthy, resource-aware meal-making skills, for it is entirely sufficient to verbally account for their choices and actions made in processes of selecting, cooking and utilising food and for what alternatives could have realised more task oriented outcomes. That approach aligns with current national knowledge requirements of the HCS syllabus which do not request students to make sustainable choices or take sustainable actions in the classroom, for their degree of 'informed reasoning' and ability 'to give reasons' are what should be graded. According to the syllabus when implemented,

specific food-related choices and values are therefore not to be indoctrinated, for only the knowledge, skills and abilities that the education is meant to develop can be graded.

At the same time, the syllabus accompanying commentary – intended to provide broader and deeper understanding of the selections and positions behind the syllabus texts – express that by gaining knowledge in situations that allow different choices informed by knowledge-in-action, students can learn how to make more conscious choices, how to take care of their health and how to be aware of shared resources. Consequently, the commentary document benefit from the idea that HCS education teaches students to be able to carry out sustainable choices and take sustainable actions.

Thus, the differences seems to be, for one, that the teaching approach observed in Paper II and III and accentuated in national syllabus knowledge requirements imply conditioning a 'knowing that' regarding sustainable food-related alternatives, for example: *knowing that a recipe for meat stew could become more resource friendly if it were prepared with a reduced amount of meat, for example by replacing it with beans and lentils*. By contrast, the teaching approach formulated in the syllabus commentary, which was also embraced by some teachers in the interview study, can be understood to concentrating a 'knowing how' regarding sustainable food- related alternatives, for example: *knowing how a recipe for meat stew could become more resource friendly by having practiced reducing the amount of meat by replacing it with beans and lentils*.

In sum, the different conceptions seems to evolve around an inherent paradox in wanting students to learn, on the one hand, what food-related choices and actions are arguably sustainable thus worthy of being practiced in HCS, and on the one hand, to provide deep and nuanced knowledge about different dimensions and delegating actual decisions to students.

Inhibiting factors and credibility

Papers II and IV describe influencing factors perceived to inhibit opportunities for teaching a perspective of sustainable development in food-related education in HCS. The evident point of intersection between the two studies was inhibiting factors related to aspects of convenience such as access to organic, fresh, local and fair-trade products. Other aspects of convenience emphasised in both papers included the perception of sustainable development as a comprehensive, challenging concept for students and sometimes themselves to comprehend, as well as that the timeframes of HCS were too brief to allow

making deep interconnection of the abstract and concrete dimensions of food in a meaningful, cohesive way. Another inhibiting aspect was the procurement budget, which was perceived to prohibit the purchase of foodstuffs based on aspects ascribed to a perspective on sustainable development. Insufficient access to organic, local, fair-trade foods was expressed to not only limit students' experiences with such foodstuffs but also undermine the message of sustainable food choices with argument such as that 'Students will do as we do, not do as we say'.

In other words, HCS teachers consider it desirable to be able to practice what they preach by having access to meaningful and purposefully tailored teaching materials and resources, whereas the assigned resources provides barriers in access, time and funding. On the other hand, barriers in access, time and funding also represents realistic circumstances that students will face in their current and future private lives. Accordingly, any perceived gap in syllabus-stipulated objectives and assigned resources could be managed as opportunities for students to acquire capabilities for dealing intelligently with the range of issues that will confront them in the consumer society. However, those situation was nonetheless experienced as damaging to the subject's credibility.

Discussion

In the introduction and background of this thesis, it has been outlined that global policy for sustainable development are advocating changes in food consumption patterns as an imperative part of reducing the pressure upon environmental resources and human health (EEA, 2005; Organisation for Economic Co-operation and Development, 2002; Reisch et al, 2013; United Nations Conference on Environment & Development, 1992). Several of the advocated changes – such as reducing the consumption of meat and dairy products; increasing the consumption of organic fruits and vegetables; avoiding goods that have been transported far or by air; and decreasing food waste – have been estimated to pose great potential for achieving significant positive outcomes to the identified concerns of contemporary consumption (Hallström, Carlsson-Kanyama, & Börjesson, 2015; Reisch, Eberle, & Lorek, 2013). To those ends, education has been ascribed the role as one of the most powerful tool for providing people with skills and competencies to have the option to make sustainable consumption choices (Organisation for Economic Co-operation and Development, 2008), and incorporating food-related education in national educational organisations has been emphasised as imperative to providing education to that end (Contento, 2015; Sumner, 2016; UN, 2015). However, there seems to be a gap in research investigating what such curriculum intentions could entail in the actual practice of school programmes. In response, this thesis has explored how education about food from the perspective of sustainable development can be understood in Swedish HCS.

With the help of Goodlad's. (1979, adapted by van der Akker, 2010) domain concept, the primary findings generated by the four papers that have informed the thesis proposes two ways of understanding what incorporating that perspective entails in and for food-related education HCS (Figure 2). Whereas the first understanding concentrates the substantive and facilitating factors understood to provide internal consistencies of what this curriculum incorporation entails, the second understanding focuses more on contradictory and conflicting content and factors of influence.

Curricular domains		Understanding 1	Understanding 2
Intended	Ideological		
	Formal	Expressing an enriched scope of dimensions of food education to include implications for the wellbeing of Earth and future generations	Expressing an ambitious yet vague mission that delegates major responsibility to teachers to interpret and translate increasingly complex, abstract content within unchanged frames
Implemented	**Perceived**	Being perceived as an essential subject with the potential to provide both opportunities to 'carry out' sustainable alternatives in food-related practices and knowledge to recognise complex interconnections behind food-related choices and actions	Being perceived as an under-prioritised subject, having insufficient central and local support necessary for teachers to enable optimal use of existing frames and thus provides incomplete or fragmented learning opportunities
	Operational	Placing the practice of creating homemade meals in centre of implementing a perspective on sustainable development, in which various steps and procedures provides multirelational links to food systems and sustainable food consumption dimension	Presenting a range of challenging structures and influencing factors, including insufficient guidance in managing conflicting topics, and to align students' preferred and autonomous choices with desired knowledge-related outcomes and goal achievement opportunities
Attained	**Experiential/ learned**	Provides a range of students (holding different ideal type-characteristic) with opportunities to develop tangible and experience based knowledge and skills. Moreover, provides students holding predominant characteristics of the Convinced and Easygoing ideal type with opportunities to develop abilities for deeper and wider informed reasoning	Insufficiently provides a range of students (holding different ideal type-characteristic) with opportunities to develop abilities for deeper and wider informed reasoning. Moreover, insufficiently provides students holding predominant characteristics of the Unable and Skeptical ideal type with opportunities to develop tangible and experience based knowledge and skills

Figure 2 Illustration of two ways of understanding what the curriculum incorporation of a perspective on sustainable development entails in food-related education of Swedish home and consumer studies, with a focus on consistencies and discrepancies among curricular domains

Understanding 1: Consistencies

The first understanding of what the curriculum incorporation of a perspective on sustainable development entail in and for HCS and its food-related

education was formed around the aligning characteristics amongst the different levels of curriculum domains. The *formal* curriculum level is in this version understood to have gradually expanded and enriched the scope of what is considered desirable food-related knowledge to convey to students in compulsory school. The formal curriculum now also includes objectives related to the maintenance of global resources and the wellbeing of future generations, while former being more about implications for the maintenance of food-related needs of individuals and households. In this first understanding, the formal domain corresponds well with the *perceived* domain, in which HCS, with its enriched scope of food-related perspectives, is perceived to be an essential subject with a worthwhile contribution to ESD objectives. Such curriculum practice is perceived to facilitate knowledge in 'carrying out' sustainable alternatives in food practices during practical, hands-on experiences relevant to the everyday life-world of adolescents, while knowledges and abilities to understand complex interconnections behind food choices and actions is enhanced. Regarding the *operational* curriculum, education about food involves strategies of incorporating a perspective on sustainable development as a part of teaching an overall meal-making practice. The steps and procedures provides opportunities for multirelational connections to food systems and sustainable food consumption dimension. Such curriculum practice is realised by merging lectures and practical activities in each lesson, which stresses both cognitive and embodied forms of knowledge regarding sustainable alternatives in food consumption.

Lastly, the *experiential/learned* curriculum domain in the first understanding is conceived to involve opportunities for a range of students - holding different ideal type-characteristic - to participate in and develop tangible and experience-based knowledge and skills that can inform food-related choices and actions from a perspective of sustainable development. Moreover, that students predominantly holding characteristics of the Convinced and Easygoing ideal type are given opportunities to develop abilities for deeper and wider reasoning regarding complex, abstract aspects of social and global food-related concerns.

Based on this first understanding, the curriculum practice of incorporating a sustainable development perspective in HCS, seems to correspond well with national and international policymaking that promotes education for healthy and environmentally supportive food consumption (Livsmedelsverket, 2014; Reisch et al., 2013; SOU, 2000:29, 2005:51; UN, 2015), especially in terms of education about meat consumption, food waste, meal composition, food

production and transportation were found. Moreover, all four curricular domains carried a multifaceted view of what can be referred to as 'ethics of care' (Noddings, 2001), or dimensions of 'moral responsibility' (Kronlid & Östman, 2008) when referring to the wellbeing of remote and intergenerational people and resources. In doing so, expanding the 'spatial dimension' of citizenship (Micheletti & Stolle, 2012) compared to past syllabuses. At the same time, topics outlined at the formal and operational level suggest a circular view of the food system chain as opposed to the former, more linear view. Thus implying intentions to implement the endorsed food system approach (Reisch et al., 2013; Sadegholvad, Yeatman, Parrish, & Worsley, 2017). More detailed content knowledge about circumstances surrounding other food system domains is however not the focus of the national syllabus today. Such detailed content knowledge could – for instance, refer to topics of urban agriculture, genetically modified crops, animal feeding, school gardening and farm-to-school programmes. Such syllabus initiatives have gained ground in national food-focused school programmes in some places (Koch, 2016; Reisch et al., 2013).

All described curricular domains support the notion of knowledge in action, with emphasis on practice-oriented processes that provide direct encounters with healthy, environmentally supportive foods as a prerequisite to develop deeper understandings of complex issues behind food choices. Such a notion corroborates the findings of psychological research on sustainable behaviour (Manning, 2009), as well as with pedagogical theories corresponding with ESD philosophy (Armstrong, 2011), which promote how-to knowledge necessary to carry out a specific behaviour (Frick, Kaiser, & Wilson, 2004), in which the normative message is portrayed as an affordance rather than a prescription. By deliberating the perspective of sustainable development as parts in an overall meal-making practice, students encounter food-related processes in ways similar to how many individuals would encounter them in real life situations: by planning food with the purpose of making a meal, not with the primary purpose to actively participate in a political debate on a sustainable future. By having such practice oriented approach, the many ways of connecting healthy, ethical, environmental and economical perspectives on food choices and actions can be regarded as flexible and adaptive to everyday agency (Halkier, 2009). Such an opportunity is noteworthy, as implied in the government report on sustainable consumption (SOU, 2005:51), since similar pedagogical situations are rare found in policy strategies to enable sustainable food consumption. It is rather more common to communicate a one-sided perspective or one-

dimensional approaches that promote knowledge centring a specific domain related to food or policy (Reisch et al., 2013).

Altogether, the curriculum incorporation of a perspective on sustainable development in food-related education of HCS entails a cohesive and balanced alignment between the different curriculum levels, which focuses competencies of carrying out sustainable alternatives in food consumption practices, primarily by providing practical, hands-on experiences relevant to adolescents' everyday lives that are bolstered by informed reasoning and critical thinking.

Understanding 2: Inconsistencies

The second understanding of what the curriculum incorporation of a perspective on sustainable development entails in and for food-related education in HCS can be considered in terms of the same curricular domains, although with attention to contradictory and conflicting factors of influence instead of consistencies. From this angle, the *formal* curriculum level can be understood to incorporate a vague, ambitious mission that delegates major responsibility to teachers to interpret and translate increasingly complex, abstract content within unchanged time frames. Regarding the *perceived* curriculum, the teacher perceptions' of HCS being an important and essential subject, did not correspond well with the perceived opportunities to realise this potential, since facilitators are overshadowed by inhibitors. Instead, the subject is perceived to be undervalued and riddled with contradictions and inconsistencies in terms of central and local support for essential subject-specific needs. The inhibitors exercised at particularly the local level, is perceived to undermine teachers' freedom to optimally use the existing frames, which limits desired possibilities to practice what is preached, so to speak. Insufficient access to essential resources such as purposefully tailored teaching materials and opportunity of planning in collaboration with other HCS teachers ultimately providing incomplete, fragmented learning opportunities or opportunities reduced to theoretical content. At the same time, the *operational* curriculum presents a range of challenging structures and influencing factors, including deficient guidance for managing conflicting topics and realising teaching situations that engage students' in intended forms of knowledge while continuing to prioritise students' preferences and autonomy. The operational curriculum also entails teachers' expressed worries of being normative while managing time-sensitive and ambiguous choice situations that warrant clear

instructions. Last, from the perspective of the *experiential/learned* curriculum domain, this second understanding entails a curriculum practice giving insufficient opportunities for a range of students (holding different ideal type-characteristics) to participate in and develop abilities of deeper and wider reasoning about complex, abstract aspects of social and global concerns. At the same time, students that predominantly holds characteristics of the Unable and Skeptical ideal type are given insufficient opportunities to develop tangible and experience based knowledge and skills that can inform food-related choices and actions from a perspective of sustainable development.

From the viewpoint of this second understanding, the curriculum incorporation of a perspective on sustainable development entails several inconsistencies and contradictions in aligning the vision of teaching sustainable food consumption with the reality. After all, incorporating a perspective of sustainable development in the national syllabus of HCS without expanding time- and budget-related resources is presumably based on the argument that a perspective on sustainable development can be integrated and applicable to regular teaching (Öhman & Östman, 2004). However, this second version suggests that such an argument may not that easily apply to the HCS context in Sweden with its complex constellation of influencing factors and food-based content knowledge. On the contrary, the results imply that the revised national syllabus has a fairly comprehensive mission compared to previous syllabuses. If applying the logic behind a critical case – that something is believed to be true within a certain set of propositions and circumstances – the second understanding suggest that numerous challenges to realising the formulated mission are apparent despite being drawn from a case with access to essential resources. Thus, the revised sullabus mission to incorporate a sustainable development perspective in HCS requires further attention. For example, the abstract formulations of what the mission entails, from the viewpoint of the second understanding, are assumed to heighten an already high demand on teacher-professionalism (SOU, 2008). Even if the major responsibility placed on teachers were reasonable for qualified HCS teachers, HCS is a subject often taught by unqualified teachers (National Agency for Education, 2016), who may need extra support when interpreting objectives related to sustainable development in the syllabus. While standardising the term *sustainable development* is regarded to be unconstructive and undesirable (Wals & Jickling, 2002), so is allowing it to be overly vague (Wahlen, Heiskanen, & Aalto, 2012), since such low precision can equally become limiting to the perceived professional free-

space of teachers, and the cultivation of autonomy for students, rather than to facilitate it (Gustavsson, 1999). Furthermore, perceived inhibitors to central and local support for vital subject-specific needs largely align with those identified by previous research in Nordic countries (Haapala, Biggs, Cederberg, & Kosonen, 2014; Höijer, 2013; Øvrebø, 2015). Reisch et al (2013) maintain, that although the intention to implement education for sustainable food consumption has increased, the rise of other priorities in formal curricula tends to result in declining food focused education. Such contradictions can ultimately damage teachers' motivation to pursue the ambitious mission of implementing a sustainable development perspective into their food-related teaching (Haapala et al., 2014).

Further, as being a subject that involves sensory experiences with food, students' personal preferences and tastes can naturally be expected to influence their attention, and partly explain their positive attitudes towards the subject (National Agency for Education, 2005). However, the results of the research conducted for this thesis suggest that structures within HCS settings more or less condition students to base their decisions in completing assignments on preferences and tastes, not the instructions stated for the assignment. The results also underscore the risk of underestimating the various responses that students with different characteristics might show regarding conflicted or stereotypical messages pertaining to food consumption. For instance, portraying a person concerned about the environment with dreadlock in the teaching materials, as described in paper III, could conflict with personal norms of students, and their so-called 'cultural normality', as Bohm (2016) has argued, can discourage the attention of students or even create a distancing effect (Amel, Manning, & Scott, 2009; Manning, 2009; McKenzie-Mohr & Schultz, 2014). Such effects upon attitudes towards vegetarian foods, for example, were identified in a recent study in the HCS context; the result was limited access to vegetarian food among students who did not want to identify as vegetarians (Bohm, Lindblom, Åbacka, Bengs, & Hörnell, 2016). Thus, it appears that some of the described inconsistencies and conflicts among the curricular domains can be ascribed to underlying factors influencing students' attention to sustainable development dimensions in food-related education.

Thus, incorporating a perspective on sustainable development in the national syllabus of HCS and its food-related education can be understood to hold numerous inconsistencies in its curriculum practice, especially discrepancies that negatively affect the capacity of HCS teachers to engage all

students in activities aligning with educational and, in turn, social goals related to education for sustainable development in general, and education for sustainable food consumption in particular.

Conclusions

This thesis has provided two ways of understanding what the curriculum incorporation of a perspective on sustainable development entails in and for HCS education and its subject knowledge base about food. By exploring formulated and implemented content knowledge, as well as perceived factors influencing teaching and learning opportunities, the two different understandings describe, on the one hand, what content and influencing factors aligns the different domains and representations of HCS curriculum practice and, on the other, what separates them.

The first understanding propose a fairly unified curriculum practice, in which the representations of HCS domains prioritises embodied forms of knowledge regarding healthy, ethical and resource-efficient food-related consumption. The implementation focuses a meal-making practice while applying a multirelational, systems thinking approach that involves focus on specific foods, the sum meaning of meals and meal patterns over time. The first understanding thus implies an implementation that cultivate students' ability to have the opportunity to make informed and experience-based choices and actions regarding sustainable alternatives in food consumption.

By contrast, the second understanding proposes a curriculum practice riddled with contradictions and inconsistencies in ways of providing teaching and learning opportunities that enable achievements of the intended curriculum. Notably, the framework of inhibiting factors perceived by teachers to induce the use of lecture-based teaching sessions and written tests alone to accommodate the perspective of sustainable development impairs the dynamics of teaching sustainable food consumption. Furthermore, the implementation involves unintentional endorsement of stereotypes and conflicting cultural norms conveying messages of responsible consumerism in ways that discourage students' participation or sense of personal relevance. Ultimately, the second understanding indicate a need to further explore and identify inconsistencies and contradictions in incorporating a perspective of sustainable development in HCS, and how to confront them.

Although HCS struggles to overcome its low-ranking position in the Swedish school system, its content knowledge regarding food consumption is

a stressed priority on the global agenda for sustainable development. That contradiction might explain many of the observed and expressed inconsistencies, as well as warrant clearer descriptions of what HCS education is expected to facilitate regarding the breadth and depth of content during its allotted 118 hours in Swedish compulsory schooling.

Implications

The thesis has provided a basis for researchers, teachers and teacher students to gain inspiration, critically scrutinise and further develop food-related education in HCS on both the national and international levels.

First, the suggested strategy of implementing the perspective of sustainable development as parts of an overall meal-making practice provides opportunities to discuss, develop and compare different ways of organising education for sustainable food consumption - from a practice-oriented perspective. For example, differences in applying sustainable dimensions as parts in an overall meal-making practice as opposed to centring sustainable diets as practice in which meal-making is merely one part out of many. One such discussion could focus differences between lessons focusing ways to reduce the amount of meat in food preparation as opposed to lessons focusing preparation of vegetarian dishes in efforts to present a perspective on sustainable development.

Second, recognition of ideal types constructed in the thesis can support theoretical discussions and further studies regarding conditioning structures for students and how these influences students goal achievement opportunities in different ways.

Third, for education policy, the content of the thesis encourages attention paid to the practical, contextual, material, processual and embodied dimensions of teaching and learning food in general and sustainable food consumption in particular in order to realise the full potential of HCS in contributing to the ESD agenda.

A suggestion for further development is to address the abstract formulations of the complex and ambiguous notion of sustainable development as expressed in current HCS syllabus. Incorporating more subject-specific terms regarding aspects of sustainable food consumption could help clarify the potential contributions of HCS in order to meet Swedish and international agreements regarding ESD and policy for sustainable food consumption.

Svensk sammanfattning

Lärande för hållbar matkonsumtion i hem- och konsumentkunskap

Bakgrund

Det politiska arbetet för en globalt hållbar utveckling har som syfte att styra världen mot en hållbar och rättvis framtid. I denna agenda lyfts omställningen till hållbar konsumtion av mat upp som en nödvändighet för att minska negativ påverkan på jordens resurser och människors hälsa (Martin et al., 2016; Reisch et al., 2013; UN, 2015). Några av de matrelaterade konsumtionsvanor som man är överens om bör förändras för att bidra till ökad hållbarhet är att minska kött- och mejerikonsumtion till förmån för ekologisk växtbaserad mat; att minska matavfall och bortfallet av biomassa mellan 'fältet och tallriken'; samt att minska avståndet mellan matkonsumenter och matproducenter (både i mil och sinne). Matproduktionen bör också präglas av rimliga levnads- och arbetsvillkor för alla längs livsmedelsproduktionskedjan, inklusive respekt för djur och med stöd till landsbygdsekonomier och kulturella aspekter (Hallström et al., 2015; Reisch et al., 2013).

För att främja en omställning mot hållbar matkonsumtion behövs en rad olika strategier och insatser, som på olika nivåer i samhället skräddarsys för olika målgrupper. Inom policyarbetet för hållbara handlingsstrategier lyfts utbildningsinsatser fram som en viktig hörnsten (Agenda 21, 1992; Cars & West, 2015; Reisch et al., 2013; UNESCO, 2005). Med utbildning anses människor kunna förvärva värderingar, kunskaper och färdigheter som möjliggör för dem att bidra till en hållbar utveckling genom ansvarsfulla och hållbara val av produkter och tjänster, och genom att ställa om till mer hållbara matvanor (UN, 2015; UNESCO, 2014a).

I Sverige lyfts skolans ansvar för undervisning om hållbar matkonsumtion fram i utredningar och handlingsplaner bland annat för regeringen (SOU, 2005:51), Folkhälsomyndigheten och Livsmedelsverket (Livsmedelsverket, 2014), vilka betonar vikten av att barn och ungdomar får kunskaper om miljövänlig och hälsosam mat. I dessa utredningar lyfts skolämnet Hem- och konsumentkunskap (HKK) fram som en viktig aktör - där både teoretisk och

praktisk undervisning om bland annat måltidsplanering, matlagning, näringslära och resurshushållning utgör innehåll. Som ett led i skolans ökade betoning på hållbarhetsfrågor togs beslutet att skriva fram 'perspektivet hållbar utveckling' även i kursplanen för HKK vid läroplansrevideringen, 2011. Ett av de reviderade ämnesmålen anger att:

Genom undervisningen i ämnet hem-och konsumentkunskap ska eleverna sammanfattningsvis ges förutsättningar att utveckla sin förmåga att [...] värdera val och handlingar i hemmet och som konsument samt utifrån perspektivet hållbar utveckling (National Agency for Education, 2011a, p. 43)

Ett relaterat kunskapskrav uttrycker vidare att eleven efter det nionde skolåret ska kunna 'föra resonemang kring konsekvenser av olika konsumtionsval och handlingar i hemmet utifrån frågor som rör en hållbar social, ekonomisk och ekologisk utveckling.' (National Agency for Education, 2011a). I och med dessa formuleringar är det en målsättning inom HKK att förbereda skolans elever för självständigt tänkande och handlingsförmåga rörande hållbara matval.

I ljuset av de globala hållbarhetsmålen, och den politiska diskussionen om utbildning som ett verktyg för att möjliggöra hållbar matkonsumtion, tycks införandet av ett hållbarhetsperspektiv i HKK-utbildningen vara ett sätt att erbjuda elever verktyg för att kunna relatera dagliga frågor om mat till hållbar utveckling. Däremot saknas preciseringar för hur HKK-undervisningens kunskapsinnehåll relaterat till mat förväntas anknyta till det vaga och mångfacetterade begreppet 'hållbar utveckling' och hur det praktiskt kan implementeras i undervisningen. Istället används perspektivet hållbar utveckling på övergripande nivå och mer konkreta innebörder av målformuleringarna saknas. Vaga preciseringar av kunskapsinnehåll har visats vara fördelaktigt för elevers självständighet och ge frihet för lärares professionalitet (Berg et al., 2015; Linde, 2012). Å andra sidan kan vagheten skapa svårigheter att tolka vad HKK-ämnet erbjuder (eller förväntas erbjuda) för att uppfylla de nationella och internationella överenskommelserna om lärande för hållbar utveckling i allmänhet, och för hållbar matkonsumtion i synnerhet. Följaktligen blir det svårt att se på vilka sätt det nuvarande kunskapsinnehållet om mat förhåller sig till de nationella och internationella målen om att främja hållbar matkonsumtion, eller på vilka sätt detta kan utvecklas. Det blir även svårt att bedöma om ämnesmålen och ämnets villkor är konstruktivt anpassade till varandra. Det finns därför behov av att erhålla mer kunskap om, och bättre förståelse för, vad perspektivet hållbar utveckling

i läroplanen skulle kunna innebära för den matrelaterade undervisningen i HKK.

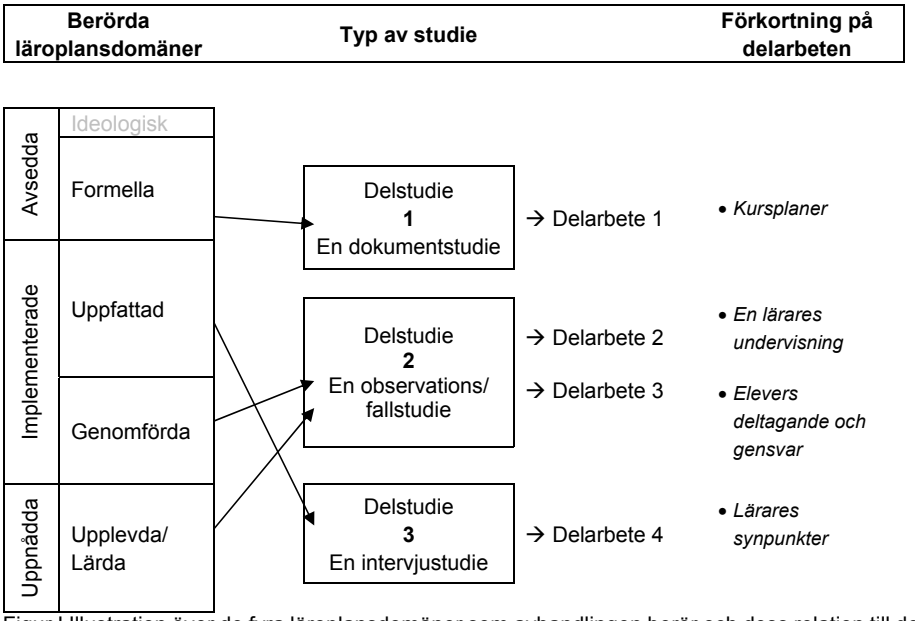
Syfte

Det övergripande syftet med avhandlingen var att få en bättre förståelse för vad läroplansperspektivet ”hållbar utveckling” kan innebära i och för HKK-undervisningen och kunskapsområdet mat. Mer specifikt var syftet att utforska hur perspektivet hållbar utveckling framträder i undervisnings- och lärandemöjligheter i ämnet HKK utifrån formulerat kunskapsinnehåll och observerade och upplevda påverkansfaktorer. De vägledande forskningsfrågorna var:

1. Hur formuleras kunskapsinnehållet relaterat till mat i tidigare respektive nuvarande kursplaner för HKK i förhållande till de ämnesspecifika perspektiven: hälsa, ekonomi och miljö? Hur kan dessa formuleringar ramas in och operationaliseras, relativt begreppet hållbar utveckling?
2. Vilka är de karakteristiska inslagen rörande mat och hållbar utveckling i en lärares HKK undervisning?
3. Hur deltar eleverna i och svarar på undervisning om mat och hållbar utveckling under autentiska HKK-lektioner, och vilka påverkansfaktorer kan vara av betydelse för elevernas möjlighet till måluppfyllelse?
4. Hur uppfattar erfarna HKK-lärare det reviderade uppdraget att inkludera perspektivet hållbart utveckling i sin undervisning, och vilka påverkansfaktorer uppfattas som hämmande respektive underlättande för denna uppgift?

Metod

Med en tolkande ansats, och med hjälp av Goodlad’s (1979) läroplansteoretiska perspektiv, genomfördes tre delstudier inom fyra ’läroplansdomäner’ (Figur I): den *formella*, den *uppfattade*, den *genomförda* och den *upplevda/lärda* läroplanen.



Figur I Illustration över de fyra läroplansdomäner som avhandlingen berör och dess relation till de tre genomförda delstudierna och de fyra vetenskapliga delarbeten som avhandlingen utgörs av.

I den första delstudien analyserades formuleringar om matrelaterat kunskapsinnehåll i förhållande till ämnesperspektiven: hälsa, ekonomi och miljö inom nuvarande och tidigare (år 1962-2011) HKK-kursplaner (Delarbete 1).

Den andra delstudien är en fallstudie (Yin, 2003) där autentiska HKK-lektioner studerades genom observationer och video/ljudinspelningar i två klasser (årskurs 8) under en termin, med samma lärare. Denna studie fokuserade, å ena sidan på karaktäristiska inslag i lärarens undervisning (Delarbete 2), och å andra sidan på elevers deltagande i, och gensvar på, denna undervisning (Delarbete 3).

Den tredje och sista delstudien var en intervjustudie där djupintervjuer genomfördes med fem erfarna HKK-lärare. Delarbeten fokuserar på lärarnas uppfattningar om och erfarenheter av det formulerade uppdraget samt de faktorer som upplevs inverka på uppdraget (Delarbete 4).

Resultat

Innehållet och uppdraget i de tidigare och nuvarande HKK-kursplanerna har gradvis förändrats till att nu involvera allt mer komplexa dimensioner av matrelaterade kunskap **(Delarbete 1)**. I de tidigare kursplanerna (1962/1969)

formuleras ett konkret innehåll med praktiska uppgifter och beräkningar relaterat till hushållens och familjemedlemmars matrelaterade behov och med betoning på hälsa och ekonomi. De två därefter följande kursplanerna (1980/1994) uttrycker en ökad medvetenhet om den ojämna fördelningen av jordens resurser varvid globala frågor samt personligt ansvar och medvetenhet betonas. De två senare kursplanerna (2000/2011) innehåller formuleringar som uttrycker ett alltmer abstrakt och komplext kunskapsinnehåll, inklusive överväganden om kulturella, sociala och etiska aspekter av matkonsumtion och matproduktion. Den nuvarande (2011) kursplanen uttrycker en bredare och mindre ”linjär” vy av matkedjan, då sambandet mellan de olika länkarna i matkedjan betonas starkare. De viktigaste resultaten i delarbete 1 är att den nuvarande kursplanen (2011) tolkas formulera nya och mer komplexa dimensioner angående önskvärd matrelaterad kunskap, samtidigt som den fortfarande innehåller samma huvudkomponenter som sina föregångare. Detta implicerar att den formulerade och avsedda läroplanen för HKK angående matrelaterat kunskapsinnehåll gradvis har expanderat och nu innehåller ett mera omfattande uppdrag.

Huvudresultatet i **delarbete 2** visar att den studerade läraren implementerar ett hållbarhetsperspektiv genom att ställa den hemlagade måltiden ’som praktik’ i centrum för undervisningen (till skillnad mot att t.ex. ställa en hållbar diet ’som praktik’ i centrum). Olika steg och dimensioner inom måltidsprocesserna relaterades till hållbarhetsfrågor och kategoriserades till A) Hållbar måltidsplanering, B) Hållbar matlagning, samt C) Hållbar mat(rest)hantering, och där ämnesperspektiven hälsa, ekonomi och miljö anlades på både de konkreta och de abstrakta aspekterna av maten i ett vidare matsystem. Genom att utgå från den vardagliga praktiken att skapa en hemmalagad måltid gavs eleverna möjlighet att göra en rad val där hänsyn till hållbar utveckling kunde tas i mer eller mindre stor grad. Genomförandet av den observerade undervisningen innebar utmaningar även för läraren. Det handlade om att kunna balansera olika betydelsefulla faktorer, t.ex. att hantera kursplanens mål och kunskapskrav inom begränsande tids-, förvaringsutrymmes- och budgetramar; och ta hänsyn till elevernas smakpreferenser. Dessa utmaningar hanterades bland annat genom att använda olika strategier. Exempelvis genom att låta eleverna skapa måltider utifrån sina smakpreferenser, vilket inte alltid stämde med uppgiftens krav att beakta aspekter av hållbar utveckling, och istället muntligt beakta aspekter av hållbar utveckling.

Elevernas deltagande i och gensvar på undervisningen om hållbar matkonsumtion **(Delarbete 3)** illustrerades som *idealtyper* (inspirerade av Webers, 1904/1977, idealtypsanalys) med fyra olika förhållningssätt till undervisningen. Ordet *ideal* ska i detta sammanhang inte förstås som något önskvärt, utan som en *idé* om elevkarakteristiska drag, alltså olika *idé-typer*. Dessa fyra idealtyper var den *Övertygade,* den *Avslappnade,* den *Oförmögne,* och den *Skeptiska*. Resultaten visar att vissa faktorer ger ojämlika möjligheter för elever med olika idealtypiska drag att nå kursplanens mål inom perspektivet hållbar utveckling. Några viktiga påverkansfaktorer kan vara: att man accepterat hållbarhetsbudskapet; stereotypa framställningar av en ansvarsfull konsument; omgivande strukturer stöder elevens smakorientering på bekostnad av uppgiftsorientering; samt höga krav på analytisk förmåga. Dessa underliggande faktorer antas påverka den deltagande elevens möjlighet till måluppfyllelse på ett ojämlikt sätt.

Resultaten i **delarbete 4** beskriver lärares varierande uppfattningar om undervisningens villkor, men med en gemensam uppfattning om att som lärare vara en meningsfull och viktig aktör för nästa generations möjlighet att bli en "hållbar matkonsument". Att implementera perspektivet hållbar utveckling i undervisning om mat beskrevs som att utgå från konkreta och handfasta handlingar som ungdomar möter till vardags och därför har möjlighet att konkret påverka (så som kompostering, minskad matrelaterad svinn, kunskap om märken, tallriksmodellen etc.), för att senare föra in de mer abstrakta länkarna mellan maten och omvärlden. Som medel för detta nämndes ekologisk, lokalproducerad, KRAV- och rättvisemärkt, samt säsongsbetonad mat. Däremot upplevde lärarna att en undervisning om hållbar utveckling i den utsträckning som beskrivs i kursplanen inte är möjlig inom nuvarande ramar där det stora problemet är brist på tid. För att kunna leva upp till målen önskar man sig: a) Ämnesmärkt planerings- och utvärderingstid, b) Kontinuitet och djup i undervisningen, c) Ändamålsenliga läromedel, och d) Högre grad av legitimitet och stöd från skolledningen. De hämmande faktorer som lärarna angav rörde motsägelsefulla och underminerande strukturer som inte är anpassade till de speciella kraven som handlar om planering, genomförande och utvärdering av matrelaterad undervisning.

Läroplansdomäner		Förståelse 1	Förståelse 2
Avsedda	Ideologiska		
	Formella	Formulerar ett berikat kunskapsinnehåll om vad som anses viktig kunskap om mat - nu inkluderas även dimensioner och implikationer relaterade till framtida generations välbefinnande.	Formulerar ett ambitiös men vagt ämnesuppdrag, vilket innebär att ansvaret för att tolka, översätta och realisera det alltmer komplexa och motsägelsefullt innehåll läggs tungt på läraren - inom oförändrade ämnesramar.
Implementerade	**Uppfattade**	Uppfattas som ett betydelsefullt ämne med potential att tillhandahålla både erfarenhet av aktualisering av hållbara val i matpraktiker samt kunskap om komplexa sammanlänkningar bakom valen och handlingar i vardagspraktiker.	Uppfattas som ett underprioriterat ämne, med otillräckligt stöd från central och lokal nivå, på ett sätt som försvårar för läraren att utnyttja de befintliga ämnesramarna på bästa möjliga sätt. Som följd uppfattas implementeringen om hållbar mat bli ofullständig eller fragmenterad.
	Genomförda	Placerar skapandet av en hemlagad måltid i centrum för implementeringen av perspektivet hållbar utveckling, där stegen och processerna för måltiden blir multi-relationella länkar till matsystemets dimensioner.	Möter en rad utmanande villkor och påverkningsfaktorer så som otillräcklig vägledning gällande hantering av paradoxala frågor, samt att sammanföra elevers smakpreferenser och autonoma val med kunskapskrav och lektionsmål.
Uppnådda	**Upplevda/ lärda**	Ger möjligheter för ett brett spann elever (med olika grader av idealtypskaraktäristiska drag) att utveckla förmågor om konkreta matrelaterad val och handlingar. Samt för elever med övervägande drag från den övertygade och avspända idealtypen att utveckla förmågor för djupare och vidare resonemang.	Ger otillräckliga möjligheter för ett brett spann elever (med olika grader av idealtypskaraktäristiska drag) att utveckla förmågor för djupare och vidare resonemang. Samt otillräckligt för elever med övervägande drag från den oförmögne och skeptiske, att utveckla förmågor om konkreta matrelaterade val och handlingar.

Figur II Illustrerar två olika sätt att förstå resultaten om vad ett hållbart utvecklingsperspektiv kan innebära för HKK-ämnet och dess matrelaterade utbildning. De två förståelserna inriktar sig på å ena sidan förbindelser och å andra sidan avvikelser inom och mellan läroplanssystemets olika domäner.

Slutsatser

De viktigaste resultaten från denna avhandling kan, med hjälp av Goodlad's begrepp läroplandomäner, visa på två olika sätt att förstå vad läroplanens inkludering av perspektivet hållbar utveckling kan innebära i HKK-ämnet och dess undervisning relaterat till mat. Förståelse 1 handlar om det

kunskapsinnehåll och de påverkansfaktorer som tycks förena de fyra läroplansdomänerna, medan förståelse 2 handlar om de mer motstridiga och motsägelsefulla aspekterna som verkar skapa glapp inom och mellan domänerna. Figur II illustrerar och beskriver innehållet i dessa två förståelser.

Samtidigt som HKK-ämnet fortfarande har en mycket låg status inom det svenska skolsystemet är dess kunskapsområde bland de främst prioriterade på den globala politiska agendan för hållbar utveckling. Denna motsägelse kan antas vara grundorsaken till många av de observerade och uttryckta problemen att nå ämnets mål och fulla potential, och båda förståelserna fortsätter att vara representerade i matrelaterad utbildning inom HKK trots sina olika fördelar och nackdelar. Detta motiverar fortsatta studier om vad ämnet HKK förväntas och kan uppnå avseende lärande för hållbar matkonsumtion under de 118 undervisningstimmar ämnet har till sitt förfogande.

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Appendix I

GÖTEBORGS UNIVERSITET
INST FÖR KOST- OCH IDROTTSVETENSKAP

Fråga om deltagande i forskning om hem- och konsumentkunskap (pilotstudie)

Göteborgs universitet deltar sedan 2011 i den Nationella forskarskolan för hem- och konsumentkunskap (NFHK), vars gemensamma tema är undervisning och lärande om mat och måltider i skolämnet hem- konsumentkunskap (HK). Det övergripande målet med forskarskolan är att utveckla och stärka det vetenskapliga underlaget kring undervisning och lärande i hem- och konsumentkunskap i relation till mat och hälsa. Forskarskolans inriktningar handlar framförallt om hur hälsosamma matvanor, i relation till exempelvis social miljö eller hållbar utveckling kan läras i skolan.

Syftet med denna studie
Denna studies syfte är att identifiera och lyfta fram olika lektionsaktiviteters bidrag till lärande om hållbar utveckling i relation till mat och hälsa, samt att få en inblick hur undervisningen iscensätts för att uppnå målen och kunskapskraven i kursplanen. Syftet är således att beskriva och analysera aktiviteter och interaktioner mellan lärare och elever i autentiska klassrumssituationer med fokus på lärande om mat och hälsa i relation till hållbar utveckling.

Videobaserade observationer
För att kunna fånga vad eleverna och lärare gör och hur de agerar under HK-aktiviteterna kommer vi att genomföra observationer som videofilmas. Detta innebär att 1-2 observatörer kommer att närvara och videofilma klassens samling, arbete i köket och eventuella måltidssituationer. Observatörerna kommer att vara placerade så att de inte störa undervisningen.

Pilotstudien
Den nu aktuella studien är en så kallad pilotstudie som genomförs som förberedelse inför den större huvudstudien. Syftet är att vi ska bekanta oss med och få ökad insikt i verksamheten. Observationerna syftar även till att undersöka vad som kan vara intressant att lägga fokus på vid kommande studier. Pilotstudien kommer att bestå av ett fåtal tillfällen av videoinspelningar av lektioner.

Ditt deltagande
Deltagandet i studien är helt frivilligt. Om du inte önskar delta så kommer kameran placeras så att du inte syns på bild. Om du av en händelse skulle råka komma med i bilden så kommer detta att klippas bort. Filmerna som spelas in kommer endast användas för forskning och kommer inte visas för någon obehörig. Dina personuppgifter kommer inte att samlas in och inga namn kommer att synas i materialet.

Vi är mycket tacksamma om du vill vara med i studien!

GÖTEBORGS UNIVERSITET
INST FÖR KOST- OCH IDROTTSVETENSKAP

INFORMERAT SAMTYCKE

Jag har muntligen informerats om studien och tagit del av ovanstående skriftliga information. Jag är medveten om att mitt deltagande är fullt frivilligt och att jag när som helst och utan närmare förklaring kan avbryta mitt deltagande

…… ……
Datum Elevens namn

Eller om eleven är under 15 år:

…… ……
Datum Målsmans namn

Kontaktperson vid övriga frågor:
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e-mail: emmalee.gisslevik@gu.se

Appendix II

GÖTEBORGS UNIVERSITET
INST FÖR KOST- OCH IDROTTSVETENSKAP

Till berörda föräldrar och elever:

Utbildning och lärande för hållbar utveckling i hem- och konsumentkunskap

Under de senaste åren har begreppet ***Hållbar utveckling*** blivit ett tydligt uppdrag i skolans innehåll och vision, bland annat för undervisningen i *hem- och konsumentkunskap*. Begreppet *hållbar utveckling* uttrycker en idé om att samhället ska fungerar på ett sådant sätt att tillgångarna räcker för människor även i framtiden. Idag saknas det kunskap om vad *hållbar utveckling* innebär i utbildningen om mat och hemmet, och hur eleverna förhåller sig till denna kunskap. Studiens mål är att utveckla och stärka det vetenskapliga underlaget kring frågor rörande undervisning och lärande i hem- och konsumentkunskap i relation till mat och hållbar utveckling.

För att kunna undersöka vad som sker i mötet mellan elever och undervisningen i hem- och konsumentkunskap så kommer vi att genomföra observationer och samtal som spelas in med audio- och videoteknik. Studien följer de forskningsetiska reglerna med krav på information, samtycke, konfidentialitet och kunskap om nyttjande. Deltagandet i studien är helt frivilligt och kan avbrytas av vårdnadshavare eller elev när som helst under projektet, utan närmare förklaring. Ert godkännande av studien samlas in genom muntlig information och samtycke från eleverna samt i skriftligt format från vårdnadshavare (se nedan). Förfrågan om samtycke samlas in under veckorna 34 och 35. Undersökningen pågår under ett lektionstillfälle i sammanlagt nio veckor (tisdagar eller torsdagar) vecka 35-43. Studien är en del av ett avhandlingsarbete och kommer att rapporteras genom en doktorsavhandling och i vetenskapliga artiklar samt i vetenskapliga sammanhang som konferenser och i högre utbildning.

Tack på förhand för er medverkan!

Emmalee Gisslevik
Doktorand i kostvetenskap vid Göteborgs universitet

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GÖTEBORGS UNIVERSITET
INST FÖR KOST- OCH IDROTTSVETENSKAP

INFORMERAT SAMTYCKE

- ❑ Vi känner oss informerade om studien ***Utbildning och lärande för hållbar utveckling i hem- och konsumentkunskap*** och lämnar härmed godkännande till att vårt barn deltar i studien. Video- och ljudinspelningar får användas i forskningsprojektet samt vid forskningskonferenser och i högre utbildning.

- ❑ Vi känner oss informerade om studien ***Utbildning och lärande för hållbar utveckling i hem- och konsumentkunskap*** och lämnar härmed godkännande till att vårt barn deltar i studien. Men vi vill **inte** att video- och ljudinspelningar används till något annat än till forskningsprojektet.

- ❑ Vi vill **inte** att vårt barn deltar i studien ***Utbildning och lärande för hållbar utveckling i hem- och konsumentkunskap.***

…… Årskurs …….
Barnets namn

……
Ort / datum

…… ……
Vårdnadshavares underskrift Vårdnadshavarens namnförtydligande