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Sustainable food choices? A study of students' actions in a home and consumer studies classroom

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ABSTRACT

Home and Consumer Studies (HCS) is a subject in the Swedish compulsory school that has sustainability issues clearly enrolled in its syllabus. Among other things, students should learn to make sustainable food choices, i.e. they should understand the consequences concerning health, finance and environment of what food they choose to consume. The aim of this paper is to contribute to the discussion about education for sustainable development (ESD) by investigating how students act in different decision-making processes during foodwork in HCS. Subsequently challenges when teaching sustainable food consumption are highlighted. The empirical material consists of video-recorded students (year 9) foodworking in an HCS classroom. Based on John Dewey's philosophy, Practical Epistemological Analysis (PEA) is used to analyse how the students make choices and proceed in their work. The taste of food is decisive for how the students move on in their foodwork. Sustainability aspects are raised to some extent but do not have the same significance. It is concluded that it is complex to teach sustainable food consumption and possibilities to modify the teaching so that taste become part of the content when teaching sustainable food consumption is discussed.

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Sustainable food consumption; learning; home and consumer studies; home economics; video-recording

Introduction

In the Swedish school subject of home and consumer studies (HCS) students are expected to learn how to become sustainable food consumers. One of the purposes of HCS education is that:

Teaching in home and consumer studies should essentially give pupils the 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 2018, 42)

Sustainable development is specified in HCS as perspectives on health, finance and the environment (National Agency for Education 2011). Commonly, teaching in HCS means foodwork, which is a term used to summarise all the elements and choices included in the cooking process (Bove, Sobal, and Rauschenbach 2003). In Sweden, HCS has been part of the education system since the late 19th century. Since its introduction in Sweden (Hjälmeskog 2000), as well as worldwide¹ (Schweitzer 2006), the home can be seen as the central base of the subject with food as its main theme. Foodwork is often conducted in smaller groups of two to four students in a

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kitchen unit in the HCS classroom. In the process of working together, students need to cooperate and agree in order to make the educational process proceed (Lindblom et al. 2016). This study is driven by an interest in understanding how students make meaning of sustainable food consumption in HCS and what the possibilities and limitations of HCS teaching are in the subject area sustainable food consumption.

The research field of sustainable food consumption has grown in recent years (Reisch, Eberle, and Lorek 2013), although a commonly agreed definition of what sustainable food consumption means is difficult to find. According to Reisch (2010), sustainable food consumption can be understood as: 'safe and healthy in amount and quality; and it has to be realized through means that are economically, socially, culturally and environmentally sustainable – minimizing waste and pollution and not jeopardizing the needs of others' (1). This is quite a broad definition compared to definitions that only include greener consumption (Moisander 2007), or sustainability in terms of 'practicing rejection, reduction and reuse' (Black and Cherrier 2010, 449).

What we choose to eat depends on what is available. When there is poor access to food, we may not have a choice, but eat what is available, even things that we would not accept in times of good access to food. But if we have a choice, we choose food that we think tastes good (Fjellström 2009). According to Belasco (2008) food choices are based on three competing considerations: (i) consumers' identities and personal preferences, (ii) convenience and (iii) a sense of responsibility. Deciding what to eat is therefore a complex negotiation of different considerations.

Regarding young people, they are a significant part of today's consumer society and are designated as one of five priority areas in UNESCO's roadmap for implementing the global action programme on education for sustainable development (UNESCO 2014). Children's and young people's attitudes to sustainable consumption can be viewed from several perspectives. For example, based on Swedish young people's attitudes to the environment and sustainability, Ojala (2015) has shown that girls are more likely to act sustainably (See also Grønhøj 2007). At the same time, young people aged between 15 and 16 years generally show a dip in interest in sustainability issues (Olsson and Gericke 2016). Lundby (2011) has investigated consumption patterns and shows that food and visits to cafés or restaurants are the most common purchases of Swedish youth. Furthermore, Lundby's (2011) study shows that young people rarely think about the consequences of their purchases. Only 10% of the participants in the study state that they always or often take environmental or ethical impact into account in purchasing decisions. However, the study shows that young people rather think that price and quality are important variables for a purchase. Parinder (2012) discovered that young people are knowledgeable about the health aspects of food, but lack deeper insights into environmental issues and climate change in relation to food choices. This is an interesting result compared to Kowasch and Lippe (2019) study, which shows that many students lack knowledge about the interdependence between consumption and production, i.e. that they do not understand how these different networks are connected. Kowasch and Lippe (2019) further argue that this makes it harder for students to understand the complex patterns of sustainability.

The Global Action Programme on Education for Sustainable Development, (UNESCO 2017) states that there is an urgent need to more actively integrate sustainable development in education and that this needs to be done through concrete actions. There is a need to 'generate and scale up action in all levels and areas of education and learning' (UNESCO 2014, 14). Schools are required to teach sustainable development, although judging by the research presented above, it can be difficult to get young people to embrace sustainability principles in their day-to-day actions. Decisions about food consumption is something that all students will need to do now and, in their future lives. It is understandable that young people will find it difficult to choose sustainable food if all the various aspects and perspectives are to be considered, especially as they often learn consumption habits at an early age that then continue in adulthood (Francis and Davis 2015). At the same time as it is stated that sustainable development should be taught

in school, there is an ongoing discussion of scholars in the field of Education for Sustainable Development/Environmental and Sustainability Education about how this teaching should be conducted (see for example Vare and Scoot 2007; Öhman 2008; Rudsberg and Öhman 2010; Östman 2010; Wals 2011; Van Poeck and Vandenabeele 2012; Van Poeck, Goeminne, and Vandenabeele 2016). It is primarily a long-standing debate between a normative and pluralistic approach, based on a traditional Western worldview with a division between fact and value, also referred as the democratic paradox. On the one hand, it is facts about our unsustainable way of living, which causes the earth a lot of problems and gives rise to normative guidelines on how to solve these problems. On the other hand, differences are promoted through different perspectives, opinions and values (Van Poeck, Goeminne, and Vandenabeele 2016). Further, Van Poeck (2019) argue that a major challenge for education about sustainability issues is to organise teaching (content and method) that both take facts and value into account.

It is vital that sustainability issues linked to food become a content in formal education. As HCS is a subject in which sustainability issues are clearly stated in the syllabus, it has a potential to bridge the dualism, challenging students thinking and how to consider multiple perspectives. The aim of this paper is to contribute to the discussion about education for sustainable food consumption by investigating how students act in different decision-making processes during foodwork and by discussing the subsequent challenges for teaching sustainable food consumption in HCS.

Theoretical framework

The theoretical framework for this study draws on Dewey's notions of learning, experience and habits. According to Dewey ([1938]1997), learning takes place through people's experiences, in contrast to cognitive learning theories that imply that learning is situated in a person's consciousness. The principle of continuity is central in Dewey's conception of learning, which means that people's present experiences are affected by those they have had in the past and will influence the quality of future experiences. Learning and meaning making thus mean that that you expand your experiences by being part of an activity or a context (Lidar, Almqvist and Östman 2010).

The ability to learn from experience means that new habits may be formed. In *Human Nature and Conduct*, Dewey ([1922]1983) describes human action as not always deliberate or planned, but as based on habit. A habit is described as 'an acquired predisposition to ways or modes of response, not to particular acts' (Dewey [1922]1983, 32). In other words: habits constitute the prerequisites for certain responses to situations and problems that arise within a specific socio-cultural context (cf. Nelsen 2014). As we develop personal habits of acting by being in contextual situations, habits are acquired and can be changed. Due to the fact that we are used to act in certain ways in certain contexts it is essential to consider students' habits in learning situations. In Dewey's words:

We cannot change habits directly: that notion is magic. But we can change it indirectly by modifying conditions, by an intelligent selecting and weighing of the objects which engage attention and which influence the fulfillment of desires. (Dewey [1922]1983, 18–19)

If a teacher wants to change established habits and make students act in more sustainable ways, he/she needs to modify the conditions, provide the relevant knowledge for informed decisions and take account of their students' needs and desires. Thus, experiences and learning are not only about cognitive aspects, it is also about values, emotions and feelings. According to Dewey ([1934]1980), all experiences have aesthetic qualities. These qualities should be understood as paying attention to whether our actions are moving towards fulfilment or not. Cognitive and affective aspects are intrinsically linked when learning processes are considered as an integrated whole. In *Art as Experience* ([1934]1980), Dewey distinguishes between general

experiences and those that are complete and unified. For example, many of our experiences are not impressionable. For example, having Spaghetti Bolognese once a week at home is not the same as having it in a romantic restaurant in Italy with the love of your life. The latter can be described as 'an experience' (35) that proceeds into satisfaction, fulfilment or the solving of a problem, i.e. it becomes a consummatory experience. This is intimately related to what makes the experience educational. In a school context, teachers mostly take the students' expectations into account and ideally incorporate them into the purpose of a lesson, thereby directing students' attention to the desired subject content (Johansson and Wickman 2017). It is desirable that students have coherent and meaningful experiences that include aesthetic qualities. When students' experiences are interrelated to the teacher's goal for the lesson, continuity in teaching is achieved and the conditions for students' learning are fulfilled. This can result in students changing or adopting new habits.

This theoretical framework has been developed into an analytical method, Practical Epistemological Analysis (PEA), in order to be able to examine meaning making in action (Wickman and Östman 2002; Wickman 2006). By studying the interaction, what is said and done in a classroom, it becomes possible to make the learning process visible, in other words to show what and how the students learn (Wickman 2006). The approach has been used in a number of studies in various ways to essentially understand the meaning making and learning process, e.g. in Science Education (Lidar, Almqvist and Östman 2010), Physical Education (Maivorsdotter and Wickman 2011), Educational Sloyd² (Hofverberg and Maivorsdotter 2017) and preschool education (Hedefalk, Almqvist, and Lidar 2014). In the present study, PEA is used to study how students make choices when foodworking in HCS.

Data collection and participants

To be able to do the present study and to examine what is happening in action, we have chosen to collect data material using video observations. The material was collected during the spring of 2016 in two Y9 classes on two occasions taught by the same teacher. The data set includes two different lessons, taught to both classes. The school in which the data was collected is located in a small town in the middle of Sweden. The community can be described as an industrial society, with very few of the students' parents having post-secondary education. At a general level, and according to statistics from Swedish National Agency of Education (siris.skolverket.se), the students at the school are not high performing in comparison to the national average and only approximately 60 per cent in year nine achieve the knowledge requirements in all subjects.

Three video cameras were used in each class and in each lesson. The cameras were placed in three different kitchen units, so that each camera could record one group of students, containing 2-3 students, throughout the lesson. The cameras were moved when the students finished their cooking and gathered to eat the meal. After the meal the cameras were moved back to the kitchen unit in order to observe their ongoing work. One lesson lasted for 160 min, which makes a total of 32 h of collected data.

In the first lesson the students were asked to prepare 'sustainable burgers', i.e. burgers with less or no meat and in the second lesson their task was to compare, dishes cooked from scratch with semi-finished and ready-made meals. The design of the two lessons was agreed in advance by the HCS teacher and the researchers conducting the study in order to ensure that the teaching included discussions about sustainable food consumption, in accordance with the Swedish curriculum. The excerpts that are used to illustrate the analysis are drawn from the first lesson, since it was where the students made explicit choices, which was a selection criterion for the analysis. The choices had to relate to the purpose of the lesson and the availability of the different food items. The supply of meat was deliberately limited, which meant that the students had to find an alternative protein source for the burger and to prepare toppings or sides that could be justified as sustainable choices. The meal also had to be ready to eat at a specified time.

The students filled in a protocol in which they discussed their choices based on health, economics and the environment, whilst working in the kitchen. The protocol was meant to serve as a basis for the students' conversations and to make the three perspectives health, economy and environment, visible. The teacher provided a book of recipes with suggestions for different vegetarian burgers, buns and sides like coleslaw. The students were also allowed to look for information and recipes on their own using their mobile phones. In the teacher's introduction to the lesson she talked about sustainable development in terms of health, economy and the environment. This was in order to clarify that all the decisions in HCS and especially in this lesson should be based on these three aspects. The teacher also pointed out that there is not just one right way of cooking the burger, but several, and that the students needed to weight different alternatives to each, considering the different perspectives. The students have worked with sustainable food consumption and to take the perspectives health, economy and environment into account before. To work with both content and process when cooking is common in HCS, also in comparison to an international context (McCloat and Caraher 2016).

The study has followed the Swedish Research Council's rules and guidelines for research, regarding information, consent, confidentiality and utilisation (Swedish Research Council 2017). Consequently, written information about the study's aim, voluntary participation and data collection methods and utilisation was provided to all participants and their parents/guardians. Written consent was collected from all the students, with their parents'/guardians' signatures. Before each recording session further clarification of the purpose and use of the video recordings was provided to the students. To insure anonymity when data is reported, fictitious names are used for all participants.

The contribution of the present study is to understand in depth how students make choices when foodworking and to get rich details about this phenomenon (Smith 2018). Although the sample of data is small, it is sufficient to make meaningful claims about how students make choices (Tracy 2010), since we recognize the teaching situation as familiar and comparable to situations described in previous research (Lindblom et al. 2016; Gisslevik, Wernersson, and Larsson 2017). The outcome could of course have been different in another school, with another teacher and with a different class of students, as well as other interesting aspects that could also be studied, fall away, for example, how gender or students socio-economic background affects how students' make choices. Our point is that a deeper understanding can be helpful in designing teaching or developing teaching about sustainable food consumption.

Analytical process

The analysis draws on Dewey's notions of experience and habits outlined in the theoretical section. Through the analysis we highlight how the learning process progresses and how the students proceed when doing foodwork in HCS. In a first step, the first author began to watch the video recordings several times and made a first sorting. In a second step, all decision-making situations were identified by the first author and the selection was then verified by authors two and three. The criteria for the selection was that there should be clear communication about a choice in relation to food. The selection generated 16 situations, containing the students' different decision-making processes, which were transcribed verbatim by the first author. In a third step, in order to highlight what gives the students direction in their decision-making, all the transcripts were analysed, using Practical Epistemological Analysis (PEA). Author one is main responsible for the analysis but the work has been done in discussion with authors two and three.

In the operationalisation of PEA the following four concepts are used: encounter, gap, relation and stand fast, to analyse how students come to a decision and enabling their work to continue. To explain the different stages in the analysis of PEA we first use encounter to illustrate the

Table 1. Decision-making sequences.

Category/Qualities	Indicator of fulfilment of expectation
Health Economy	(1) The students choose wholemeal flour because it is healthier
	(2) The students choose to put seeds on the bread because it is healthier
	(3) The students exclude onions because it makes the dish cheaper
Aesthetic/taste	(4) The students choose kidney beans because they are the tastiest
	(5) The students exclude a recipe because it contains turmeric and they dislike it
	(6) The students do not choose falafel because they dislike it
	(7) The students choose to put onions in the bread to make it taste nicer
	(8) The students choose cucumber due its pleasant taste
	(9) The students choose coleslaw to make the burger juicier and tastier
	(10) The students choose to mix beans with minced meat to mask the taste of the beans
	(11) The students choose a specific bread to bake because it tasted good last time they baked it
	(12) The students choose to mix beans and minced meat because it tastes good
	(13) The student makes a choice because it looks good
	(14) The students choose cucumber and tomato to make it less boring
Frames	(15) The students choose chickpeas because this is the only remaining source of protein on the table
	(16) The students simply follow the recipe

specific situation and what the students encounter in it. Second, attention is drawn to gaps, which means the problematic situations the students encounter when they work and which causes their work to stop and which gives rise for a need to make a choice about how to continue. The principle of continuity is helpful in understanding how students use their past experiences and habits in new situations to create relations that can fill the gap and enable the students to proceed in their work. Relation is used to analyse how students suggest or test different reasoning or arguments in order to reach a decision. The relation that becomes decisive for the students' choices can be said to stand fast. How the gaps are bridged gives direction to the meaning making process (Wickman 2006).

Findings

In the collected data a total of 16 sequences, where students make explicit choices about food consumption, could be identified (see Table 1). From these 16, three situations are related to sustainability in the terms that are used within HCS and that the teacher introduces at the beginning of the lesson: health, finance and the environment. For example, in one of these three situations two students choose to use wholemeal flour instead of plain white flour, with the argument that more fibre in the bread is healthier. In two of the 16 sequences decisions about which food to choose are made for them: one of the groups could only choose chickpeas because this was the only remaining source of protein on the table. In the eleven remaining sequences the choices are justified by the taste of the food.

The eleven situations in which taste became crucial caught our interest, especially as in decision-making situations students do not refer to the purpose of the lesson, but to how they could fulfil their own purposes or expectations of a tasty meal. This in turn affects the meaning of sustainable food consumption. But how do we understand the choices and what kind of challenges do they entail? In the following we show a close-up analysis of sequences of food choices in relation to taste. Three examples have been chosen to illustrate how taste plays a role in the fulfilment of students' expectations.

Just that the food tastes good (Example 1)

Johan, Anton and Ida are cooperating to finding a suitable topping for their burgers. Johan returns to their kitchen unit after having looked at the different alternatives on the table on which the teacher has displayed several ingredients.

1.	Johan:	Ida, would cucumber work?
2.	Ida:	Cucumber grows ...
3.	Johan:	Cucumber is mostly water, so it wouldn't be so dry if we added it
4.	Ida:	But it's a very expensive kind of water
5.	Johan:	Yes, but (looks at the cucumber and then at Ida)
6.	Ida:	But cucumber tastes nice, so go ahead
7.	Anton:	Yep (nods in agreement to Johan)

In this sequence, the students are about to choose a topping for their burgers, and a gap occurs since they don't know what to choose. When Johan comes back to the kitchen unit he suggests using cucumber (line 1). Ida and Johan then make different suggestions, i.e. they try different relations to find a solution that will fill the gap. Ida first tries a relation of where cucumbers are grown (line 2), which could be an aspect of sustainability, but the turn is not followed through. Instead, in line 3 Johan's suggestion of juiciness is counteracted by its water content. A counter argument to cucumber in line 4 relates to a sustainability justification, economy – cucumber is expensive water. Johan agrees with this, which confirms that this is something that stands fast for them both. Nevertheless, there is a 'but' from Johan and Ida and when Ida suggests a relation between cucumber and its pleasant taste Anton agrees. The taste is thereby the relation that decides how these students move on in their foodwork.

In the students' conversation they suggest relations that align with the economic and ecological arguments, both of which are in line with the sustainability purpose of the HCS lesson. This suggests that even though they know that cucumber is not the most sustainable option they still choose it. In Dewey's terminology, this could be understood as their previous experiences of burger toppings playing a major role. Their predisposition to act and make choices in this specific sociocultural situation is constituted by their habits of foodwork, and also perhaps of eating, where taste plays a crucial role. In other words, they expect food to taste good and want to fulfil that expectation in this encounter.

Sustainable may also taste good (example 2)

In this excerpt the students have just started their work after the teacher's introduction. Johan and Anton have looked at the available ingredients displayed on the table. The teacher again emphasises that the burgers should be made taking sustainability into account.

8.	Johan:	I say that it's possible to make a bean burger, so ...
9.	Anton:	Yes (inaudible) ... not good
10.	Johan:	Yes I know, but if we mix beans and meat together to make an ordinary burger with onions and stuff it will taste less of beans and still taste like this, still good, but it will still be better, both healthier and for the environment
11.	Anton:	We don't need a lot of beans
12.	Johan:	No

The students try to fill the gap, which is to decide which ingredients to use to make the burger and especially what kind of protein they should use. The sequence starts off with Johan (line 8) introducing beans as an ingredient, which thus suggests a relation between beans and burgers. Anton's response (line 9) suggests that the taste of beans is something to take into consideration. Johan (line 10) then introduces the idea to mix the beans with minced meat and onions in order to disguise the taste of the beans. That the taste of beans is not very pleasurable stands fast in the conversation. Johan's suggestion to mix beans with minced meat is accepted by Anton, with the proviso that few beans are used (line 11), which Johan accepts. The importance of good taste is reinforced in their continued conversation:

13.	Anton:	Should we do this then (points to the recipe)
14.	Johan:	That's all there is ... It needs 400 g of protein, so we'll have to calculate how much minced meat and how many beans we should put in
15.	Anton:	But should we do this or that
16.	Johan:	We can do a mix of these (two recipes) and then I would recommend putting onions in with the minced meat
17.	Anton:	Yes, yes
18.	Johan:	Because that will taste good

The sequence continues with Anton asking (line 13) which recipe they should use, which can be seen as a continuation of the gap above. Johan's answer (line 14) illustrates a relation to the amount of protein that is required and the fact that they want to use as much minced meat as possible and then fill up with the beans. It stands fast that they should use two recipes, mix them and add onions due to their pleasant flavour. Johan continues to argue for the group's choice by referring to taste. However, in this sequence, unlike the previous one, arguments of taste are combined with those relating to health and the environment, which then direct the students' continued foodwork. In this sequence the students relate to the task of making a sustainable burger, although they also want to make the food taste good, which overshadows the other arguments. Johan's suggestion to include onions suggests that in his experience onions taste good. The students take their departure in using meat in their dish, which stands out as the norm when making burgers, while the beans stand for something that is peculiar. These students consider the purpose of making sustainable choices, although in the end decide on taste as the determining factor. As in the previous example, the students assume that the food should taste good.

It tasted good last time (example 3)

In our last example the students have finished cooking and are sitting together with the teacher eating their burgers and talking about the day's foodwork. The teacher asks Erik, Sofia and Maria about the choices they made when baking their buns:

19.	Teacher:	Why did you choose this bread instead of the recipe in the booklet?
20.	Erik:	We thought that it tasted good last time
21.	Sofia:	And it was suitable for hamburgers as well
22.	Teacher:	Mm absolutely, but if you compare the two recipes is there any ingredient, any motive or argument for why one is better than the other?
23.	Sofia:	Firstly, I don't particularly like turmeric, so that's also why ...
24.	Teacher:	Mm, that's where taste comes in, but if we think about how we talk about health or finance or the environment?
25.	Sofia:	Yes ... no, I don't really know ... it's got seeds on

In this sequence the teacher asks how the students relate their choice of recipe to sustainability, which means that a gap occurs. The students' answers show that their choice is motivated by a previous experience of the taste of bread and their experience of the bread being suitable for hamburgers. The teacher (lines 22 and 24) poses supplementary questions to direct the students' attention towards sustainability. The answer (line 23) indicates that a previous experience of the taste of turmeric led to that particular recipe not being selected. In the next question the teacher explicitly asks about the three perspectives of sustainable development. The students' answer (line 25) shows that this was not something that they had considered when choosing which bread to bake. Consequently, in this case the students' previous experiences and habits direct the choice of bread recipe.

In conclusion, it can be noted that the taste of food is very important when students make choices during their foodwork in HCS. We can distinguish variations in how taste becomes the

relation that gives the students directions for their further work. Even though the students recognise the aim to make a sustainable burger, in all the examples taste is the predominant factor, rather than sustainability.

Previous experiences and habits are crucial when it comes to making choices about food consumption. The students' experiences of taste, together with their habits and patterns of eating, are important for which choices are made, even though they appear to have some knowledge of sustainability. According to Dewey ([1922]1983), habits are deeply anchored in our bodies and it is necessary to change the conditions to transform habits. In this teaching unit, the purpose is for the students to make food choices that are sustainable i.e.their arguments should relate to health, finance and the environment. This might not be in line with their previous food choice habits. The students act in line with fulfilling their own expectations of the outcome of this foodwork. It could therefore be concluded that during the lesson the students' past experiences and habits are not adequately challenged.

Discussion

In this article the aim has been to investigate how students make decisions during foodwork in HCS and what kind of challenges this entails for teaching sustainable food consumption. By using PEA we have been able to highlight how students make choices and meaning in these situations and how they proceed in their work.

The analysis shows that the students' choices in their foodwork are primarily motivated by arguments related to the taste of the food. Even when other arguments are mentioned, taste in many cases, is what becomes decisive for the direction of the continued foodwork. One way of understanding this is that students use their previous experiences of taste to move forward in the various decision-making situations they find themselves in. Previous research has shown that in general taste is an important factor when choosing food in everyday life (Belasco 2008; Fjellström 2009), but in the context of food education, instead of being seen as a help, taste is highlighted as a barrier to learning the 'correct' eating habits (Leer and Wistoft 2018). In the present study, it seems like the students are used to choosing food based on taste. Our previous choices affect future ones (Dewey [1938]1997), for example, the choice of cucumber to top a burger to make it tastier could be interpreted as the experience of tasting cucumber burgers shape the decision. In the way the lesson is designed, the students are not challenged to change their habits, nor are they provided with new knowledge that allows them to formulate arguments that can take the discussion a step further (Rudsberg and Öhman 2015). This shows that there is a need to modify the conditions under which these students work in order to challenge their habits and make it possible for them to learn new ways of acting.

Taste is embodied knowledge and has aesthetic qualities. It refers both to the sense in the mouth and to aesthetic preferences. Like other senses, taste can be trained. For example, the tongue can learn to distinguish subtle differences in flavour. Taste thus gives rise to normative standards and distinctions between what tastes good or bad (Korsmeyer 2017). In this study, the students act in accordance with norms and habits about what tastes good or bad (cf. Bohm et al. 2015). In their conversations they frequently return to what they like or dislike in terms of taste and what they experience as enjoyable or not enjoyable. In other words, they address the aesthetic dimension of food, which verifies that it is not possible to distinguish between objective facts and subjective values (Van Poeck, Goeminne, and Vandenabeele 2016), or as in a Deweyan sense it is not fruitful to see cognitive and affective aspects as a dichotomous ([1934]1980). Values, emotions and feelings are inevitable parts of learning situations (Wickman 2006). When these different aspects are looked at as a whole, the implication is that aesthetic qualities need to be taken into consideration in teaching. Also, as Kowasch and Lippe (2019) argue, embodied experience and learning with all senses could help the students to develop

critical thinking, for example by questioning how production, marketing and taste of food are interconnected.

The aesthetic dimension in learning situations has been examined in terms of aesthetic judgements (Wickman 2006). It has been found that aesthetic judgements are constantly present in teaching and have consequences for students' learning. In their studies of science education practices, Jacobson and Wickman (2007) have shown that aesthetic judgements are important for students' understanding of and interest in the subject, as well as for their opportunity to participate in the classroom activities. With a focus on physical education, Maivorsdotter and Wickman (2011) argue that aesthetic judgements are central in order to understand students' participation in relation to a teaching content. Berg et al. (2019) has investigated how students use aesthetic judgments in HCS and show that it occurs in three ways: as an argument in negotiation of ingredients, as reference points in the reactualization of past experiences and as nonverbal actions to evaluate taste quality of the food. In a subject like HCS, where students work with food, it is therefore essential to understand how these aesthetic judgements participate in teaching and learning. Christensen and Wistoft (2016) have examined taste as an element in the school subject Food Knowledge teaching in Denmark and argue that working specifically with taste can affect students' expected learning positively. It further confirms the importance of including taste as an aesthetic experience in learning situations. In order to do this, we argue that the traditional and common arrangement of the HCS lesson, i.e. preparing and cooking a meal and then eating it together (Lindblom et al. 2016), may need to be reconsidered.

The results of the study indicate challenges for HCS education when it comes to sustainable food consumption. As the results show the students act according to habits and they do not have the necessary experience to perform the task on a level that all perspectives are taken into consideration. Therefore, a first challenge could be to broaden the students' experiences of taste and their taste repertoires (Leer and Wistoft 2018). In order to do that, teachers will need to provide encounters in which the students' expectations of eating a tasty meal are taken into consideration at the same time as their previous experiences of 'what tastes good' are challenged. One way of doing this could be to more specifically define a particular learning content on taste. This might be a lesson in which the aim is for students to both encounter and experience different tastes. For example, the students could be asked to make burgers from different ingredients and create a tasting protocol in which taste, texture, relation to health, cost and the environment are commented on. Such a lesson would enable students to experience different tastes and textures, i.e. taste different ingredients in a burger that would expand their experiences of what a burger can taste like. Furthermore, such a lesson would challenge how traditional HCS lessons are structured, i.e. the preparation and completion of a full meal (Gisslevik, Wernersson, and Larsson 2017). It would limit students' opportunities to only choose the ingredients they like (Bohm et al. 2016) and thus inspire them to take sustainability into account. The students in this study chose imported cucumbers as a topping and baked bread for the burgers with white flour, presumably because this was in line with their expectations of what a burger meal should include. Arguably, these students need guidance on how to extend their repertoires of taste in order to increase their predisposition to make sustainable food choices.

The task to prepare an entire meal and to make it sustainable was too complex for these students. One reason for this may be that they had no clear idea about what sustainability is, or what kind of actions are required. During the foodwork, students are expected to take a stand and argue for all their choices with regard to health, finance and the environment, which, as is evident from previous studies, young people find difficult (Parinder 2012). Integrating the three dimensions of sustainable development has been highlighted as possibly the greatest challenge in ESD (Wals 2009) which has repercussions in the actual teaching about sustainable development. It has also been shown that 15–16 year old students generally show a dip in interest in sustainability issues (Olsson and Gericke 2016) that may negatively affect their motivation for such complex tasks. Hence, a second challenge could be to make the tasks less complex so that

students know what they need to pay attention to. This requires the purpose of the task to be clarified and even perhaps to allow the students to work with one purpose at a time. For example, this could be done by initially focusing on one of the three aspects of health, finance or the environment at a time. The first task could then be to make the burger as healthy as possible, then as cheap as possible, and last to have as little negative impact on the environment as possible. This way of working would clarify the purpose for the students and enable them to have more understanding about the consequences of food choices. The level of complexity could then be gradually increased by discussing the various perspectives in relation to each other and giving the students tasks in which, all the perspectives are considered. A series of lessons designed like this would enable the students to reason on and understand all the perspectives of sustainability included in HCS.

Conclusion

This article has empirically demonstrated that taste is an important part of students' foodwork in HCS. Taste is also a decisive factor in their decision-making processes, although the task is to make choices based on sustainability. There is a need to reflect on how the tasks and conditions could be modified, for students to learn how to make sustainable choices. However, there are things that teachers' teaching, education on sustainable food consumption needs to be vigilant about: the division between facts and values as well as the risk of indoctrination (Östman 2010). Teaching needs to acknowledge that values, emotions and feelings, including taste, are inevitable parts of learning situations (Wickman 2006) and it needs to deal with the existence of different and conflicting perspectives in education for sustainable development (Öhman and Öhman 2012). It is necessary to identify what these conflicting perspectives could mean in relation to food consumption and highlight that there are different ways to come to a solution. Therefore, teaching benefits from being more pluralistic and empowerment oriented (Laessøe 2010; Öhman and Öhman 2013; Andersson and Öhman 2017). Modifying the conditions is challenging yet necessary if students' needs and desires are to be met, and thus make possible change of established habits. Different suggestions as to how students' experiences can be expanded have been presented. These suggestions include development of students' taste preferences, as taste appears to be a significant issue, as well as clarifying and simplifying the purpose and structure of the lessons. To conclude, it means that the traditional HCS lesson needs to be challenged if the students are to be given a real chance to gain knowledge and to manage the consequences of their food choices.

Notes

1. The international term for the subject is Home Economics and is used when the subject is mentioned outside the national framework.
2. Educational sloyd is the term for the Swedish craft subject which is mandatory in compulsory school.

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