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The mismatch between teaching practices and curriculum goals in Norwegian Home Economics classes: a missed opportunity

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ABSTRACT

Current curriculum guidelines emphasise the importance of both nutrition education and the development of practical cooking skills in the school subject Food and Health (FH). This study aimed to explore teachers' and students' perspectives and experiences of current classroom practices in FH. Focus group discussions (FGDs) with teachers and students at three schools in Southern Norway were conducted and thematically analysed. Our findings suggest there is a mismatch between curriculum guidelines and teaching practices. Although teachers understood the benefits of nutrition education, practical cooking activities were prioritised. Three key themes were identified; *students and teachers value cooking* and *limited time*, which both explain this mismatch from the perspectives of students and teachers, and *pedagogical solutions to resolve the mismatch*, which summarises novel learning activities suggested by students and teachers as a solution for this mismatch. There needs to be a focus on comprehensive nutrition education in FH classes, to improve its pedagogical implications and meet the demands of the curriculum. These findings can be used to inform educators and policymakers on how to strengthen nutrition education in FH.

KEYWORDS

Food and Health; Home Economics; classroom practices; experiences; nutrition education; cooking; students; teachers

Introduction

Many of today's health challenges related to non-communicable diseases (NCDs) are strongly linked to poor nutrition (Afshin et al., 2019; Institute of Public Health, 2016). Although research has shown that the diet of children and adolescents in Norway is largely in line with the recommendations of the health authorities, it still contains too much added sugar and saturated fat, and not enough fruit, vegetables and fish (Hansen Brooke, Myhre Borch, Johannesen Wetting, Paulsen Mohn, & Andersen Frost, 2017).

The Norwegian school subject Food and Health (FH), internationally known as Home Economics (HE), provides an ideal opportunity for a society to invest in child and adolescent diet and health (Lichtenstein & Ludwig, 2010). HE is an umbrella term

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which encompasses several disciplines, situated in the human sciences (Dewhurst & Pendergast, 2008; International Federation for Home Economics, n.d.). HE is taught around the world under different structures, names, and content, but with the communality that they involve food education (McCloat & Caraher, 2020). In countries like Malta, Republic of Ireland and State of Victoria Australia, HE is an optional subject. The Nordic countries Denmark, Sweden and Finland have subjects similar to the Norwegian FH subject in that they are small, but self-standing compulsory subjects consisting of practical cooking practice and theory relating to sustainability, food, and nutrition (Ministry of Children and Education, 2019; Tuomisto, Haapaniemi, & Fooladi, 2017). Research has shown that HE can influence food knowledge that is sustained into adulthood (Worsley, Wang, Yeatman, Byrne, & Wijayarathne, 2015), and that nutrition knowledge and food literacy, may influence dietary intake, especially fruit and vegetable consumption (Spronk, Kullen, Burdon, & O'Connor, 2014; Vaitkeviciute, Ball, & Harris, 2014; Wardle, Parmenter, & Waller, 2000; Worsley, 2002).

There is a one-hundred-year long tradition of teaching HE in Norway (Askeland, Skjelbred, Aamotsbakken, & Maagerø, 2017). Through the Knowledge Promotion Reform (Ministry of Education and Research, 2006) which was introduced in 2006, the HE curriculum was renewed and renamed FH. The subject consists of three main subject areas: *food and lifestyle*, relating to the connections between diet and health, *food and consumption*, which addresses e.g. food production and environmental matters, and *food and culture*, which covers Norwegian and foreign food cultures (Directorate for Education and Training, 2006). Broadly, the objectives of FH is to help students acquire the ability to choose and reflect critically on food and meals, and help students become aware of what promotes good health (Directorate for Education and Training, 2006). Despite its ambitious curriculum, FH is the smallest of the mandatory subjects in Norwegian schools, consisting of 197 teaching hours through primary and lower secondary school (Directorate for Education and Training, 2018). In comparison to the other three mandatory practical and aesthetical subjects, which FH also is categorised as, there are 368 hours allocated to music, 623 hours of arts and crafts, and 701 hours of physical education (Directorate for Education and Training, 2018). FH classes are usually taught in the 6th and 9th grade and situated in classrooms with kitchen facilities. It is up to the individual school how they carry out the teaching in different subjects and make sure that the students reach the competency aim in each subject (Ministry of Education and Research, 2006). Therefore, the teaching may vary between schools. In order to teach FH in primary school level (grades 1–7), there are no requirements for having any formal qualification in FH (Ministry of Education and Research, 2014). At lower secondary school level (grades 8–10), there is only a requirement of having 30 ECTS in FH from the teacher education, if the teacher is hired in a permanent position after 1st January, 2014 (Ministry of Education and Research, 2014). As a result, six out of ten FH teachers lack formal education in the subject at primary and lower secondary school level, which is the highest number among all subjects (Perlic, 2019).

In 2020, there will be a renewal of the entire Norwegian school curricula. The topic *Health and life skills* will be one of three interdisciplinary topics to be included across all school subjects (Directorate for Education and Training, 2019a), placing health education on the national agenda. The Ministry of Education and Research (2016, p. 34)

states that all school subjects need to have clearer priorities to facilitate in-depth learning. In FH, the theoretical issues related to food choice, diet and health should be connected to the daily practical work in classrooms for the students to see connections between theory and practice (Ministry of Education and Research, 2019, p. 21).

From 1st of August 2020, the new curriculum in FH will apply. In the new curriculum, FH is described as a key subject in developing an understanding of the connections between diet and health (Directorate for Education and Training, 2019b). Further, there are fewer competence aims compared to the old curricula, which is in accordance with the proposal to reduce the scope and facilitate in-depth learning in subjects (Ministry of Education and Research, 2016, p. 34; 2019, p. 23).

Given that the Norwegian FH curricula highlight the importance of educating students about the connections between diet and health, i.e. nutrition education, it is crucial that learning activities being utilised effectively facilitate student learning. Students must be active and participate in classroom activities in order to learn (Ministry of Education and Research, 2016, p. 39). Active learning is described as instructional activities that allow students to participate in the learning activities, exceeding the notion of merely being a passive listener and note-taker (Gogus, 2012). The core curriculum (Directorate for Education and Training, 2019a, p. 10) states that teachers must encourage e.g. communication and collaboration among the students, skills which are emphasised as important in social learning and development. Within a sociocultural approach to learning, these skills can themselves be viewed as a pedagogical approach to learning, as the emphasis lies on “the interdependence of social and individual processes in the construction of knowledge” (John-Steiner & Mahn, 1996, p. 191). Social interaction among the students is thus a key component of high-quality learning, and language is viewed as an important tool for interacting, understanding key-concepts and enhancing the learning process as a whole (Mercer, 2013, p. 153; Vygotsky, 1978).

Although there is limited research on FH in Norway, recently published literature indicates that the teaching in FH today mainly consists of cooking (Beinert et al., 2020; Veka, Wergedahl, & Holthe, 2018) and thereby learning the practical skills related to cooking and hygiene. For children and adolescents to be able to make healthy choices and reflect around food and meals, as described in the curriculum (Directorate for Education and Training, 2006), it is beneficial to learn both the practical skills of “how” and interpretive and deep learning of “why”, as discussed by Pendergast and Dewhurst (2012, p. 257) regarding Home Economics and food literacy. Food literacy can be defined as:

The scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet needs and determine intake. (Vidgen & Gallegos, 2014, p. 5)

Recently, researchers have begun to develop a tool to measure child food literacy (Amin, Lehnerd, Cash, Economos, & Sacheck, 2019). They found knowledge of food systems, cooking, and nutrition, cooking skills and self-efficacy regarding eating to be important food literacy domains. A recent systematic review found self-efficacy and knowledge to modify socioeconomic differences in dietary behaviour among youths (Mekonnen et al., 2020). Also, according to an Australian study (Ronto, Ball, Pendergast, & Harris, 2016), adolescents ranked food and nutrition knowledge to be the most important aspect impacting

their dietary behaviour. However, most adolescents did not apply their knowledge, due to lack of food skills. Hence, the authors suggest educators should focus more on how to apply food and nutrition knowledge. Comprehensive nutrition education in FH classes is therefore an ideal way of increasing food and nutrition competence among children and adolescents.

This current study is part of a wider project called “LifeLab Food and Health – innovative teaching for the school of the future“. LifeLab aims to develop and evaluate various student active learning tasks for FH, focusing on nutrition education to increase students’ knowledge and skills regarding the association between diet and health. This study aimed to explore teachers’ and students’ perspectives and experiences of current classroom practices in the school subject FH, and to use these experiences and insights in the development of the student active learning tasks. We used focus group discussions (FGDs) because our “concern is understanding the phenomenon of interest from the participant’s perspective” (Merriam, 2009, p. 14).

Methods

Participants

Three schools were conveniently selected (Battaglia, 2013), based on their role as collaborating schools for the teacher training education at the University of Agder. Three schools were chosen to widen the pool of potential participants in case one or two schools withdraw or would not participate. An email was sent to the principals of each school asking for the opportunity for the project researchers to visit and inform them about the project and their potential participation. All the three schools responded positively and agreed to participate. Teachers in FH were included in the study independent of educational background, as their experiences in teaching the subject was what the researchers wanted to explore.

Data collection

Data collection was carried out between June and September in 2018 and consisted of FGDs with FH teachers and students (separately). All FGDs were conducted in a private room at the participating schools during the school day. All three schools had FH classes at 6th and 9th grade. Therefore, the student FGDs were held in September among those who had recently finished their year of FH (7th and 10th graders, aged 12 and 15) or in June among those who were at the end of their year of having FH (6th and 9th graders, aged 11 and 14). The size of the FGDs depended on the availability of participants and was guided by the recommended 5–8 participants per group (Krueger, 2015). Also, one individual interview with a FH teacher was conducted since only one teacher was available from this particular school. This interview and FGD data were pooled and analysed together.

A total of nine FGDs at two combined primary and lower secondary schools (schools consisting of both primary school and lower secondary school, school, 1 and 2) and one primary school (school 3) in Southern Norway were conducted (Table 1).

The FGD semi-structured topic guide for students was piloted (Merriam, 2009, p. 95) with students of a similar age group (10–14 years) and modified based on feedback. Specifically, the younger adolescents felt that the language used was not

Table 1. Overview of the student and teacher Food and Health interviews conducted, the LifeLab Food and Health project.

	School 1			School 2			School 3			N
Students										
Grade	6th	9th	7th	10th	7th	7th	7th			
Girls	4	8	3	3	3	3	2			16
Boys	3	5	2	2	2	2	1			15
Total	7	6	5	5	5	5	3			31
Duration of FGDs (min)	40	39	30	37	37	22	—*			
Teachers										
Female	0									6
Male	1									2
Total	1									8
Duration of FGDs (min)	31									
Teacher experience and background information	60 ECTS in FH. Teaches usually 9th grade FH, but has no classes this year									
				Teacher 1: 0 ECTS in FH. Has taught 6th grade FH for two years, and 9th grade for one year. Currently assigned two groups of FH classes	Teacher 1: 2nd grade teacher with 60ECTS in FH Teacher 2: Newly educated with 30 ECTS in FH. Will have FH in 6th grade onwards					
				Teacher 2: 60 ECTS in FH. Has had two FH groups in 6th grade, but currently none.	Teacher 2: 60 ECTS in FH. Has had two FH groups in 6th grade, but currently none.					
				Teacher 3: 30 ECTS in FH. Has currently, and for the first time, one group of 6th grade FH.	Teacher 3: 30 ECTS in FH. Has currently, and for the first time, one group of 6th grade FH.					
				Teacher 4: 60ECTS in FH. Has taught FH for seven years, teaches currently only one group.	Teacher 4: 60ECTS in FH. Has taught FH for seven years, teaches currently only one group.					

* The recording of this FGD had to be deleted after it had been transcribed, and the duration was not noted prior to this.

understandable, and so this was modified to simplify it. The teacher FGD guides were pilot tested on two colleagues who had previously taught FH.

Topics covered in the FGDs to respond to the research aim of this study included how teachers and students experienced the subject in general, how a typical FH lesson was carried out, preferred learning methods and what elements they personally believed was important to achieve a good learning outcome in any given subject. The questions concerning preferred learning methods were directed towards learning in general. Further, in the teacher FGDs, possibilities, and barriers for implementing novel learning tasks were explored, as this was regarded crucial at a later stage, when the developed activities were going to be piloted later in the LifeLab project.

The facilitator (CB), conducted all FGDs following the semi-structured topic guide (Merriam, 2009, p. 102). Natural conversation was encouraged between the participants in FGDs and prompts were used to follow-up on key topics discussed, with the help of two master's students. The master's students were present in most of the FGDs as observers, as part of their data collection.

At the start of the FGDs, the facilitator and observers introduced themselves and the study again, followed by a reminder about anonymity and data handling, that there were no right or wrong answers to the questions, and that all of the information they wished to share was valuable.

All FGDs were recorded with a digital voice recorder and transcribed verbatim immediately after data collection. Field notes were written down after each school visit.

Data analysis

The transcripts were uploaded to NVivo 12 Pro, which was used for coding and data handling, and thematic analysis was performed, following Braun and Clarke's (2006) step-by-step approach.

During the first part of the analysis, the researcher familiarised with the data. Initial thoughts about the data and possible emerging themes were noted throughout these initial phases. All transcripts were inductively coded. Similar codes were renamed, others were discarded. For instance, the codes *applicability of learning tasks* and *preferring variation in learning tasks* were merged into *criteria for classroom activities*, which eventually became part of the theme *pedagogical solutions to resolve the mismatch*. The codes were revisited and revised and finally merged into categories of similar codes. These categories were revisited once coding was completed and, through discussion with the research team, developed into themes which were reviewed, defined and named (Braun & Clarke, 2006). Themes and codes were reviewed to check if the codes worked in relation to its extracts, and whether the themes worked in relation to the dataset and the research question. Although the qualitative analysis will not capture an objective "truth" (Merriam, 2009), this will strengthen the trustworthiness of the findings, as it relates to "the 'fit' between the respondents' views and the researcher's representation of them" (Nowell, Norris, White, & Moules, 2017, p. 3). The process of creating and identifying codes and themes is reflexive (Braun & Clarke, 2006, p. 86; Braun, Clarke, Hayfield, & Terry, 2018), in which one continually moves back and forth through the different phases.

Quotations are presented liberally throughout to enable the students and teachers voices to be clear.

The consolidated criteria for reporting qualitative research (COREQ checklist) was followed when outlining this method section.

Ethical considerations

All participants provided written informed consent (Fossheim, 2015). The participating teachers signed their own consent form, and parents consented on behalf of their children (the students) who were between 11 and 15 years old (NSD Data Protection Services, 2018). If there were more than 5–8 students available for the FGD, the teacher selected the desired number of students from those who had consent to participate. Students provided assent by participating.

The study is approved by the Norwegian Centre for Research Data (ref.59097) and the Faculty of Health and Sports Sciences Ethics Committee at the University of Agder.

Results

Three overarching themes were identified in the qualitative analysis: 1) students and teachers value cooking 2), limited time, and 3) pedagogical solutions to resolve the mismatch.

Students and teachers value cooking

This theme illustrates why students and teacher find cooking-related activities worthwhile. The practical aspect of the subject is valued by the students and supported by the teachers who allocate most time for cooking during the lessons.

During the FGDs with the students, it was evident that FH is a popular subject, which they describe as fun. All students provided positive descriptions, demonstrating that they highly valued the subject. When asking the students what they liked best about FH, there was a unanimous agreement that they enjoyed cooking and eating. As the school day is filled with academic classes, the practical and interactive nature of FH was of key importance to the students in addition to being able to socialise with their friends:

- Student 1: I think it's very nice. It's nice to have some breaks from the regular theoretical classes.
- Student 2: And it's actually quite fun too. When you can socialise with your classmates and also collaborate on something. Also doing stuff on your own.
- Student 3: It's very useful. It's really quite useful.
- Interviewer: In what way?
- Student 3: cooking and making food is something you need no matter what. Because we learn to make healthy food, unhealthy food, all different kinds of food ... that's stuff we need in everyday life ... if you are home alone or going out with friends and you are cooking, then it's always useful (two boys and one girl, 9th grade, school 1)

Teachers were aware that students highly valued FH in a way that was unique compared to the other more academic subjects:

It's a subject they [the students] are very much looking forward to, they really look forward to Food and Health ... because then they cook (Teacher, school 1).

Similarly to the student reports, the teachers felt that FH was so popular among students because they are given the opportunity to develop mastery in the subject and because it is practical. In addition, they emphasised that the practical aspect was especially valuable for the academically weaker students. It was evident that it was not necessarily the academically stronger students who mastered FH.

From the FGDs, it is evident that FH is operationalised as a subject centred on cooking. When asking the students to describe a typical FH class, all gave very similar descriptions: The teachers first present the meal plan and describes or demonstrates how to do it. Then, the students go in groups and prepare the dishes themselves, with the help of the teacher if necessary, before they eat and clean up. Although there were some exceptions to this structure during the school year e.g. by having a cooking project they worked on or had a day where they just worked on theoretical concepts, this description was common:

Ehm, we enter [the school kitchen] and then we are explained what we are making today and what to do. Then she [the teacher] shows us how to do it and how to cut things at this table that we have. Then we cook and then we tend to do the dishes before recess (Boy, 7th grade, school 3).

The teachers talked about students having insufficient skills related to reading recipes to be the main reason for spending time on explaining or demonstration before the students got to prepare the dishes themselves. Limited experience with using different kitchen utensils among some students was also highlighted as challenging by the teachers. By demonstrating first, they experienced fewer questions regarding the recipes afterwards when the students were cooking, and this facilitated better progress during the lesson. Although demonstration was apparent in all schools, some teachers emphasised the importance of letting students try and fail during cooking, and that the recipe is not something definitive, but a basis. Hence, this was an important part of the learning process.

Although teachers believed it was important to include cooking in FH lessons because this was what the students enjoyed, they also emphasised nutrition education to be of great importance. However, how teachers incorporated nutrition education into FH lessons varied. Most schools incorporated it into the practical cooking. Nonetheless, one teacher stated that topics like health and lifestyle do not get communicated well enough to the students during the practical work (cooking). Therefore, he advocated for allocating more time for nutrition education and that how nutrition education is taught in FH classes should be strengthened. In the FGD with the 9th graders at this school, the students mentioned that they did not learn a lot about the connections between diet and health in FH classes, but more so in the subjects Physical Education and the optional subject Physical Activity and Health, which supports the statement provided by the teacher.

Limited time

Although teachers and students both highly valued the practical side of FH, teachers emphasised the importance of including nutrition education in their lesson. Despite

wanting to include nutrition education, this theme highlights the time pressures that the teachers are working under in FH and how it impacts their teaching.

FH is the smallest mandatory subject in Norwegian schools when measured in teaching hours, and in the interviews, it was expressed that they had between two and two and a half hours each lesson. From the FGDs with the teachers, it was clear that finding time for learning tasks related to theory was difficult. Most of the time was spent on demonstration, cooking, eating, and cleaning, leaving little time for nutrition education. A teacher expressed how she once started the class by introducing some theory, but as this resulted in such a hurry later in the lesson, this was something she had to skip next time. Hence, cooking was the prioritised activity in FH lessons. Teachers' expressed the desire to have dedicated time to teach both theory and practical cooking in FH. However, they expressed a sense of helplessness in being able to do so given their time limitations. One teacher expressed feeling that it would be "impossible" to carry out all FH activities in the limited time provided. All of the teachers introduced as much of the theory as they could, within the limited time available. They did so because they recognised nutrition education, and more particularly the subject itself, to be of great importance. Most of this theoretical teaching was provided by the teacher by either talking about it before the practical work, during cooking, or while eating. Hence, how theory was taught to students differed between the schools. The students were also given nutrition education homework, usually a reading, because there was limited time for working with this during class:

In order to make time for everything, because we are in such a hurry in the school kitchen, they get theoretical homework and then we talk a bit about the theory while they eat (Teacher 1, school 2)

Although the students did not mention time scarcity to be an issue, the students recognised that the teachers had different practices when it comes to communicating the theory:

Student 1: you said [refers to her classmate] that you had some theory while you ate, but we just sat and talked.

Student 2: We kind of had theory when we were done eating, so we ate ... and then when everyone was finished, she [the teacher] started talking a bit. And if there was anyone still eating, she would ask them to stop eating until she was done talking, so yeah ... (Two girls, 10th grade, school 2)

Time, or lack of it, appeared to be of great importance to all of the teachers. They expressed a great desire for more hours to teach FH to enhance the quality of students' learning. Hence, time scarcity in FH seemed to be the biggest challenge from the teachers' perspective. They felt that more time would facilitate and promote deeper learning among students, as they would have more time to study each topic in depth. The teachers would also have time for both demonstration and cooking, in addition to working sufficiently with the theoretical content.

When talking to the teachers about teaching and their experiences with learning activities like exploratory or experimental learning activities in FH, a teacher replied that this was also difficult to implement due to time restrictions:

I feel that the kids find it [exploratory/experimental activities] very fun. And sometimes you wish that you had more time to plan for such activities, it's kind of how one would like to teach maybe ... but lack of time kind of puts a stop for that too (Teacher 3, school 3)

Not only was there limited time to engage the students in the required classroom learning but the teachers felt they were unable to engage in the appropriate preparation for their practical activities. The will to teach differently in FH classes is thus there, but according to the teachers, limited time inhibits them from doing so. This was especially prominent at one of the schools, where the FH classes recently had been reduced from 2.5 hours a week, to 2 hours a week.

Pedagogical solutions to resolve the mismatch

Findings suggest cooking is highly valued and prioritised in FH lessons. However, teachers emphasise the importance of nutrition education, but feel the limited time available for the subject limits what they can achieve as teachers. This final theme highlights suggestions made by students and teachers on what to consider in developing and implementing student active learning tasks targeting nutrition education in FH, aiming to resolve this mismatch between teaching practices and curriculum guidelines.

There was lots of discussion in all FGDs regarding how the learning tasks should be outlined. Specifically, the teachers also discussed potential ways in which they would be able to use and implement new learning tasks. One of the criteria highlighted by the teachers was that the learning tasks should benefit the students and comply with the subject's curriculum and competence aims:

...I guess it must be something that the students benefit from. And that you see that it is in accordance with the competence aims and also that the students think it's fun, I guess (Teacher, school 1)

A second criterion reported by the teachers was related to how the activities should be outlined. Pedagogical approaches and theories that were mentioned were; learning by doing, Vygotsky and Russian maths. A main finding among the teachers was that learning tasks should be practical. A combination of practical learning tasks and dialogue with the students was mentioned by several teachers as valuable. This way, the teachers could ask the students probing questions, which was highlighted as important also during cooking by some of the teachers. Another important aspect highlighted by the teachers was that the activities must be easy to adapt and flexible to use. Words used by the teachers were user-friendly, intuitive, leeway, and framework:

"It must be user-friendly. That's super important!" (Teacher 1, school 2)

Teachers wanted ownership of what they do in class. A common feature was that teachers would appreciate having a "bank of ideas" where they could pick different activities, which are easy to use and easy to adapt to their classes. There were a number of benefits associated with having this "bank of ideas" including that it would save time on designing the tasks themselves, and at the same time make it work in their class. This was something several teachers felt was missing. One teacher stated that they did

not have time to include activities directed at nutrition education the way FH classes was run today. Some teachers however, had discovered ways in which to teach in creative ways that did not take up too much of their limited time. For example, one teacher gave an example of how he greeted the students with his hands covered in glitter before the class to demonstrate how bacteria and other microbes easily spread. This demonstrates how easy one can include a practical and quick demonstration in educating the students about hygiene.

Although FH is a practical subject, most students found learning about nutrition and health interesting, and some of them wished they learned more about it. In one of the schools, theory and practice were experienced as very separate the way it was taught today. The students described that they began the school year with practical cooking lessons, then they were introduced to lots of theory during a short period of time, followed by a large examination in the middle of the school year, before ending the year with cooking lessons again. When asked what other way to teach the theory in the subject, a student replied:

I think it was a bit random that we would go through all types of dishes ... but if it had been more planned and merged together with theory ... so for example, if the topic was fish ... then we made dishes with fish and then the last half hour, if we skipped dessert, we could have theory related to fish the last half hour ... so we didn't have to wait like two weeks before we had the theory about fish ... then that was forgotten too ... (Boy, 10th grade, school 2)

Although this student suggesting cutting down on one dish to include more nutrition education, some students expressed that they already learned enough or that the teachers could just incorporate nutrition education into the practical work (cooking):

Maybe a bit more (nutrition education) while we prepared the dishes, she could explain a bit more about, this is important to eat and stuff ... like, this you should not eat that often, and stuff like that (Girl, 7th grade, school 3)

The majority of students struggled to think of ways nutrition education could be taught differently. Instead, they focussed on discussing the learning techniques they enjoyed in general. From the student FGDs, it was clear that there were differences in how they generally preferred to learn which indicates that variation in learning tasks is an important principal itself. Some liked reading, some liked experimenting, and some liked discussing. Nonetheless, the most evident finding was that most students appreciated active learning tasks where they were involved in the tasks and tried things out themselves. The students also highlighted the importance of tasks being “fun”. Fun was a word they often used when they described the activities they preferred:

I really like it when we don't just work in the textbook or something like that, but when we actually do fun things, but yet learn something (Girl, 6th grade, school 1)

When talking about fun learning tasks with another group, a student explained that the element of fun was important because this was what made them want to continue. Hence, fun was a big motivator for learning.

The idea that fun tasks are important for learning was also supported by one of the teachers when asked which activities he thinks engages the students:

... I do look at the learning outcomes, and that is often related to what they think is fun ... that's when they get to explore a bit themselves ... (Teacher, school 1)

This illustrates that both students and teachers emphasise practical and fun learning tasks as important for both student motivation and learning outcome and should, therefore, be considered.

Discussion

This study aimed to explore teachers' and students' perspectives and experiences of current classroom practices in the school subject FH. Based on the FGDs conducted, this study found FH to be a popular and highly valued subject. Both students and teachers enjoyed the practical element of cooking, which seems to be so dominating that it overshadows most of the nutrition education that moves beyond the development of cooking skills. The teachers describe time scarcity in FH to limit what they can achieve as FH teachers, and despite recognising the importance of nutrition education, cooking was prioritised. This represents a mismatch between teaching practices and curriculum guidelines, which has a strong emphasis on nutrition and health education (Directorate for Education and Training, 2006). In one of the student interviews, it became clear that the students usually cooked three separate dishes within each lesson. Although the teachers recognised the importance of nutrition education, within the limited time frame for FH, cooking was clearly prioritised. The suggestions from the respondents represents a missed opportunity, where both teachers and students recognised the importance of nutrition education and gave suggestions for engaging ways in which nutrition education could be introduced into the subject which would narrow the gap between curriculum guidelines and practice (see [Figure 1](#) for thematic map).

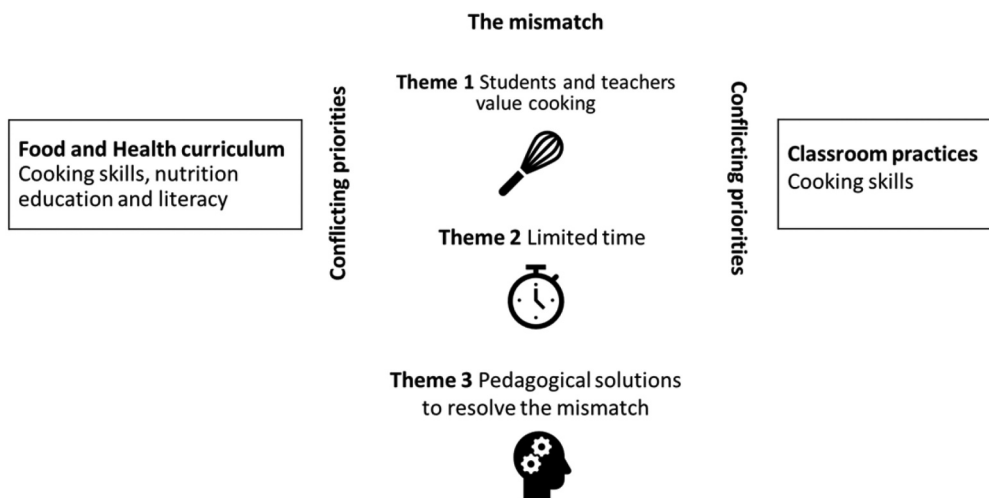


Figure 1. Thematic map of the themes identified, and the mismatch discovered. The LifeLab Food and Health project

A study conducted in 2005 by Øvrebø (2014) investigated nutrition knowledge and attitudes among 606 eighth and tenth graders in north of Norway. Only 40% of the tenth graders said they had learned about nutrition in their FH lessons. Although the study took place some years ago, the 1996 curricula stated that the students should build an understanding of the relationship between diet, lifestyle and health, to be able to choose a healthy lifestyle (Ministry of Church, Teaching and Research, 1996). The statement is similar to one of the current curriculum aims of the subject, which states that “*the teaching in the subject should contribute to a lifestyle with awareness of what promotes good health*” (Directorate for Education and Training, 2006, p. 1). Our data indicate that the issues discovered by Øvrebø (2014), relating to low emphasis on nutrition education is also evident in today’s teaching. The theoretical issues related to diet and health gets “squeezed in” where possible and is not something that is given much priority in FH lessons. From the way classroom practices are planned in these three schools, it is clear that the main focus is about developing cooking skills, with lots of emphasis and time allocated to demonstrations followed by cooking. This is in line with the observations and interviews conducted by Veka et al. (2018), who even called the recipe the “hidden curriculum”, meaning that since the recipe was so dominating in how the teaching was planned and conducted, it could be regarded as a new curriculum level itself. Hence, they too observed a mismatch between teaching practice through the “hidden curriculum”, and the formal FH curriculum. They also discovered that all FH classes was organised in the same way, by introduction, cooking, eating and cleaning, equal to our findings (Veka et al., 2018). In Sweden, Höijer, Hjalmskog, and Fjellström (2011, p. 518) stated that “cooking in Home Economics is used as a means to assess the pupils with focus on methods, recipes and ability to follow instructions”. Hence, this issue is also apparent in other countries with similar subjects. A strong focus on following recipes, with less focus on creativity and experimentation, was also found in the Norwegian school subject survey (Espeland et al., 2013). As the FH curriculum states that the subject shall support elements like creativity, experimentation and exploration (Directorate for Education and Training, 2006, 2019b), teachers in FH who admits to this way of teaching, need to consider how they design their learning assignments, to better meet the demands of the curriculum. Finally, according to our findings, both students and teachers highlighted learning tasks were the students get to explore and try things out themselves to be valuable.

The narrow focus on cooking is also not in line with either the current or upcoming curricula, which are much more comprehensive, by also emphasising elements like critical thinking, sustainability and developing awareness of the connection between diet and health, i.e. nutrition education (Directorate for Education and Training, 2006, 2019b). The strong emphasis on cooking in today’s teaching may be explained by looking into the long tradition of FH education in Norway, where practical work in the kitchen always has been central (Askeland et al., 2017).

Both students and teachers recognised nutrition education to be important. Still, as the subject has few hours allocated each week, our data show that delivering high-quality nutrition education was not prioritised in the FH classes. For students in 7th grade to achieve competency aims such as “*explain how food functions as a source of energy and body-building substances*” (Directorate for Education and Training, 2006, p. 3) or in 9th grade “*inform others about how eating habits might influence diseases that*

are connected to lifestyle and eating” (Directorate for Education and Training, 2006, p. 4), it is essential that students learn about the complexity of nutrition, and not solely cooking skills, cf. Pendergast and Dewhurst (2012). In the new curricula, students in 7th grade should be able to “use food labelling and dietary models to put together a healthy, varied and sustainable diet and reflect on their choices” (Directorate for Education and Training, 2019b, p. 5) and in 9th grade be able to “explain and critically evaluate claims, advice and information about diet and health” (Directorate for Education and Training, 2019b, p. 6), to mention a couple of the competence aims. For students to achieve the competences described in the FH curriculum, it requires they possess in-depth knowledge of food and nutrition. The importance of nutrition and food knowledge is also supported by literature regarding adolescent food literacy and dietary behaviour (Amin et al., 2019; Mekonnen et al., 2020; Ronto et al., 2016). Therefore, nutrition education should get a higher priority in FH classes.

In relation to learning, teachers lecturing contrast strongly with active learning and the sociocultural view of learning, where the focus is on active participation and social interaction amongst the students (Bonwell & Eison, 1991; John-Steiner & Mahn, 1996). Our results show that the students prefer student active learning tasks when learning something new; they want to solve problems, discuss, and experiment. The new core curriculum highlights experimenting and exploring as important for in-depth learning (Directorate for Education and Training, 2019a). The teachers also specify that they want to teach differently, but that time scarcity is making this difficult. Issues relating to time scarcity has also been raised in Swedish Home Economics classes (Höijer et al., 2011; Lindblom, Erixon Arreman, Bohm, & Hörnell, 2016), where researchers question whether it is possible to fit the curriculum within the limited time frame (Lindblom et al., 2016). Our findings suggest this question is just as relevant in the Norwegian context.

The Ministry of Education and Research (2016) states the importance of students being actively involved in the learning process. FH lessons can be altered to be more than one-way communication from teacher to students, but this requires teachers to reduce time spent on pure lecturing, and free up time for activating learning tasks, dialogues, and discussions. Although some students prefer and enjoy lectures as a way of learning new material (from teachers they see as good communicators), most students do not. Some of the teachers find it challenging to teach nutrition-related topics because they recognise how much students enjoy cooking. However, given the way nutrition topics, for the most part, is communicated in FH classes studied here, it is conceivable that students would have a more positive attitude towards nutrition education if it were communicated in a more student-activating way. The example presented earlier, regarding the teacher who once greeted the students at the beginning of the class with his hand covered in glitter, demonstrates a simple, quick, and powerful way of illustrating the importance of proper kitchen hygiene to the students. In this way, students are activated more than by lecturing the importance of proper hygiene to them.

During cooking, the students get to be active and collaborate with each other. This approach should also be apparent in the more theoretical nutrition education. Hence, the focus on more problem-solving and experimental learning activities in FH could be used to change the teacher-led pedagogic practices observed in this

study. We suggest teachers should more than now consider how they support students learning the nutrition-related, more theoretical contents of the FH lessons. If teachers can shift the focus in classrooms, from their teaching to students learning, then they can better create links to the practical work, as proposed by the Ministry of Education and Research (2019). This may then modify the problem observed here: theory (i.e. nutrition-related concepts) and practice (i.e. cooking) are seen too detached. Cooking should be learning tasks, aiming to link the food preparation to the broader curricular goals, and the objectives of nutrition education. Also, the core elements described in the new FH curriculum, seem to have a stronger focus on the students learning the different aspects of the subject through cooking. For instance, under the core element “health-promoting diet”, it is described that the students shall develop knowledge of a healthy diet through cooking and preparing meals (Directorate for Education and Training, 2019b). This stresses the importance of teachers finding solutions to how the theory and practice can be better interconnected.

Strengths and limitations

A strength of study is that it includes data from both teachers and students. These have direct experience with the topics discussed, but from different perspectives, which was important to our research question. Also, FGD is regarded valuable to explore common experiences (Malterud, 2012; Merriam, 2009). To our knowledge, this is the first study in Norway to explore how students experience the subject.

There are some limitations to this study that are important to note. First, findings from this qualitative study, is not meant to be generalised. Also, schools selected for this study were based on convenient selection and were known to have educated teachers who were committed to the subject. Only one teacher in school 2 did not have a formal FH teacher education. Furthermore, all students participated in FGDs in one of the schools, while at the other two schools, the teachers selected the students to participate among those who had consented. This may mean that the most engaged and motivated students were chosen to participate.

Finally, the facilitator had little experience conducting FGDs. This limitation was mitigated by training in qualitative methods, with a focus on thematic analysis, and supervision by experienced researchers throughout the project. A pilot FGD was also conducted, and in the first two FGDs, a more experienced qualitative researcher participated for corrections and feedback. Topic guides were also developed in this collaboration. The facilitator is the source for data collection, and to get good data, it is essential to ask good questions, and this takes practice (Merriam, 2009, p. 95). The quality of the FGD is crucial for the quality of the findings to be analysed, verified, and finally expressed (Kvale & Brinkmann, 2009, p. 174).

Conclusion and implications for further work

Our findings indicate that there is a mismatch between teaching practices and curriculum guidelines in FH. Teachers express that there is both a desire and need for a change in both how, and to what extent nutrition education is communicated in the FH classes

investigated here. FH is a key subject for the development of an understanding of the connections between diet and health, and the emphasis on in-depth learning and interdisciplinarity in the school of the future requires other learning strategies beyond lecturing and homework. Thus, more research on learning strategies targeting nutrition education is needed.

The teachers and students included in this study were all engaged and enthusiastic about the subject. We consider this engagement and the proposed solution found here a missed opportunity. There is a lot to be done to improve the pedagogical implications of nutrition education in FH. Both the current and the upcoming FH curriculum is ambitious in terms of content and aims. Therefore, in order for the subject to meet the demands of the new FH curriculum, FH teachers need to consider how they support students in learning the more theoretical contents of the FH curriculum. Our findings suggest that the development of various student-activating learning task for FH can assist teachers who experience limited time to develop such activities themselves. These findings can be used to inform teacher educators and policymakers on how to strengthen nutrition education in FH. We propose a focus on comprehensive nutrition education, as this can affect the quality of teaching practices in classrooms, which in turn can affect how strong role FH can have as an arena for health promotion among children and adolescents in Norway.

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