PEER-REVIEWED PAPER

Pupil participation in the Food and Health subject

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Abstract

Recent educational programs emphasize the concept of pupil participation which entail pupil autonomy during all steps of learning. However, little is known about how this is implemented in practice. The objective of the current study is to investigate how pupil participation is practiced in the Norwegian school subject Food and Health at lower secondary school level. The pupils' own perception of pupil participation is the focus of the paper. The objective was addressed by a mixed method approach including survey data, observations, and interviews with pupils. Pupil participation was studied in eight areas of the subject, namely 1) shaping the academic content, 2) selecting ingredients and dishes, 3) purchasing and calculating costs of ingredients, 4) preparation for cooking, 5) cooking, 6) distribution of tasks, 7) meal situation, and 8) assessment. The results indicate that pupil participation varies for different parts of the subject, being lowest for shaping the academic content and purchasing and calculating costs, and highest for the meal situation. Overall, the findings indicate that pupil participation is not practiced to the extent that the educational program requires, and future studies needs to shed light on how degree of pupil participation can be increased to achieve the goals in the educational program.

KEYWORDS: FOOD AND HEALTH SUBJECT, FOOD EDUCATION, HOME ECONOMICS, PUPIL PARTICIPATION, PUPIL AUTONOMY

Introduction

Self-determination theory (Ryan & Deci, 2017) is widely used as an approach to develop learning methods and learning environments that support student's interest and motivation, and thus will facilitate the generation of long-term knowledge and competences (Reeve & Cheon, 2021; Schiefele, 1991). Self-determination theory describes three basic physiological needs, relatedness, competence and autonomy, which must be fulfilled to have positive experiences and general well-being (Ryan & Deci, 2017). For a successful learning process, autonomy in particular is considered important (Wallace et al., 2014). Autonomy in learning implies that pupils experience a sense of choice in that they have control and responsibility towards their own learning (Guay, 2022). The traditional teacher-determined learning environment can often

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fail to support the feeling of pupil autonomy (Assor et al., 2002; Reeve & Jang, 2006), and strategies to increase pupil autonomy could thus have a positive effect on learning. In order to have this effect, pupil autonomy must stimulate the pupils' interest and motivation, which is essential in the process of acquiring long-term and profound knowledge through deep-processing strategies (Mayer et al., 1994; Schiefele, 1991). That pupils participate in and have an influence on their own learning process is one mean to achieve pupil autonomy. Originally, pupil participation was viewed from a pupil democracy focus, but in the renewed Norwegian school curriculum from 2020, pupil participation is emphasized during all steps of learning (Norwegian Ministry of Education and Research, 2017). This entail that pupils should be involved in decisions that influence their academic and social development, and in assessing their work and competences (Norwegian Ministry of Education and Research, 2017).

Article 12 in the UN Convention on the Rights of the Child (United Nations Children's Fund, 1989) states that children have a right to express their opinions and views freely in all matters that affects them directly or indirectly, and the view of the child shall be given weight according to the child's age and maturity. Furthermore, article 13 states that children have the right to seek, receive and impart information and ideas of all kinds (United Nations Children's Fund, 1989). According to Jones (2017), the United Kingdom government has claimed a commitment to children's involvement in definitions of "suitable education" in the context of English schools. Similarly, the Norwegian school curriculum emphasize democratic values and pupils' rights to participate, and the current curriculum states that pupils must have *real influence* on their learning (Norwegian Ministry of Education and Research, 2017). Thus, Norwegian schools are expected to employ a pedagogical practice where pupils are both active in the classroom (e.g. by participating in discussions) and in making choices and decisions regarding their learning processes (NOU 2015: 8).

In the Norwegian school system, Food and Health (previously home economics) is a compulsory subject with specified learning objectives after the 4th and 7th grade in elementary school and the 10th grade in lower secondary school (Norwegian Ministry of Education and Research, 2019). The Food and Health subject is defined as a practical aesthetic subject and a major part of the curriculum is dedicated to developing practical skills regarding cooking and meal preparation (Norwegian Ministry of Education and Research, 2019). In addition, a major focus in the Norwegian Food and Health curriculum is the development of the pupils' ability to understand the association between diet and health, critically assess health claims and information on food, experience meals together with others, and develop their creativity by exploring and using their senses in practical activities (Norwegian Ministry of Education and Research, 2019) All these learning objectives are in line with skills that are needed to deal effectively with the demands and challenges of everyday life in the 21st century (Bernard et al., 2019; Teo, 2019). Furthermore, the curriculum states that the teacher should facilitate pupil participation and allow the pupils to try various practical activities in the kitchen or other appropriate learning arenas, as well as contributing to conversations about their own academic development (Norwegian Ministry of Education and Research, 2019). Involving pupils in all steps from planning lessons to implementing and assessing their own and other pupil's work might facilitate a deeper level of learning, where pupils are able to see, understand and utilize connections between what they have learned in school and new contexts outside of school (Norwegian Ministry of Education and Research, 2019; Taar & Palojoki, 2022). Despite clear goals in government issued programs and school curriculums, several studies indicate that pupil participation is not yet enrolled in the school system (Bernard et al., 2019; Jones, 2017; Aadland & Wergedahl, 2022). With its practical approach, the Food and Health subject entails a high degree of pupil activity in the classroom. Still, this does not automatically imply that pupils have real influence on their learning e.g. by making choices and decisions regarding their learning processes and schoolwork. A review by Bernard and colleagues (2019) suggests that the teacher's role in the learning process might be viewed as a line ranging from the teacher

as an authority figure who is the sole source of information at the one end, to the teacher as an equal partner in the learning process in the other end. A recent study investigating the Food and Health subject in Norway, found that in a typical lesson the activity level of both teachers and students are high, but still, teachers control and regulate the lessons (Aadland & Wergedahl, 2022). In line with this, a study by Øvrebø (2019) indicates that pupil participation is practiced as a «part-time» activity where the pupils are more involved in some parts of the subject than others, and that level of pupil participation increase as the pupils gets more experienced in the subject. The objective of the current study is to investigate how pupil participation is practiced in the Norwegian school subject Food and Health at the lower secondary school level. The pupils' own perception of pupil participation is the focus of the paper.

Materials and methods

Study design and development

The current study was designed as a two-step project with an explanatory sequential mixed methods design (Creswell et al., 2021, p. 603). First, an electronic survey was developed, and data was collected and analysed. Then observational data and interviews was conducted to supplement and provide a deeper understanding of the quantitative findings. The project was ethically reviewed and approved by the Norwegian Centre for Research Data (project number 206543) before the data was collected. As the interviews were recorded, and the interview objects were under the age of 15 parental consent notes was collected in advance (NESH, 2021). The parents received information about the project directly from the school and only pupils with a parental consent note were interviewed. To protect the participants, the pupils also gave oral consent before the interviews were conducted.

The electronic survey measured pupils self-reported degree of pupil participation for various parts of the Food and Health subject. More specifically, we constructed categories that measured pupil participation in 1) shaping the academic content, 2) selecting ingredients and dishes, 3) purchasing and calculating costs of ingredients, 4) preparation for cooking, 5) cooking, 6) distribution of tasks, 7) meal situation, and 8) assessment. Each of the 8 categories included 2-3 items, and in total the survey included 18 items. The survey was designed in Norwegian language, and the original questions including an English translation of the items can be found in the Appendix. The survey was developed by the researchers of this paper, in collaboration with an expert committee including academic staff with research experience on the Food and Health subject and experience in teaching the subject at lower secondary school level. The survey was also tested for readability by two pupils that were representative of the target group, and adaptions to language and questions were performed based on their feedback.

Sample and procedure

One school located in Western Norway was invited to answer the survey. This school had a total number of about 175 pupils at 9th grade (pupils aged 14-15 years) in the year of data collection (June 2021). The sample included six food and health-classes (each with 25-30 pupils), and four teachers taught the subject. The pupils were informed about the research project by their Food and Health teacher and were given time to answer the survey in one of their school lessons. They were also informed that it was voluntary to take part in the study. The survey opened with short introductions with instructions. All questions were formulated as statements, and the pupils were asked to read each statement and choose the alternative that best represented their opinion on a 5-point Likert scale with alternatives «Never» (1), «Seldom» (2), «Sometimes» (3), «Often» (4) and «Always» (5). The survey did not allow for blank responses, but the option "I do not understand this question" was included to identify questions perceived

as difficult or unclear to the respondents. A total of 120 pupils answered the survey, which yields an overall response rate of about 70 percent. Of these, 45 percent were girls, 35 percent were boys and 20 percent chose the alternative «Do not wish to answer» when asked about gender.

Analysis of the survey data

Items within each of the 8 abovementioned categories of pupil participation were analysed for consistency by means of factor analysis and Cronbach's alpha reliability tests. The analyses revealed that the items could not consistently be combined to a summarized factor. Thus, the result for each item is presented separately to provide the most precise picture of the data. Pupils' responses on the 5-point Likert scales are presented as means and standard deviations (Table 1). Scores 1.0-2.4 were considered as low degree of pupil participation, scores 2.5-3.4 as medium degree of pupil participation, and scores 3.5-5.0 as high degree of pupil participation.

Observational data and interviews

All survey data were analysed before observations and interviews were collected. Thus, findings from the survey data pointed out topics where we needed to direct our focus in order to get a better understanding of pupil participation in the Food and Health subject. The observational data and interviews were collected from the same school as the survey data, but as the survey was distributed to pupils at the end of the school year, the observational data and interviews could not be collected in the same pupil group. It is reasonable to assume that level of pupil participation might increase throughout the school year as the pupils gets more experienced with the subject (Øvrebø, 2019). Because of this, observations and interviews were performed in a practical kitchen lesson in the 4th month of the following semester (November 2021). We followed the same session in 4 classes that were taught by 4 different teachers. One of the teachers was referred to as the "main teacher" with overall responsibility for the subject. Each class used two different kitchens with one teacher in each kitchen, and in total we therefore observed 8 different group sessions. In each kitchen, the pupils were divided in smaller work groups with 3-5 pupils per group.

The Food and Health subject commonly includes a combination of theoretical and practical lessons, but as mentioned in the introduction, the subject is defined as a practical aesthetic subject and a major part of the curriculum is dedicated to developing practical skills regarding cooking and meal preparation (Norwegian Ministry of Education and Research, 2019). Observational data was therefore collected in a practical lesson, and the researchers focused particularly on degree of pupil participation in the practical parts of the subject. Based on the findings from the survey data, we aimed to get a better understanding of 1) pupil engagement and -independence during the cooking, 2) teacher involvement/interference in problem solving relating to the cooking and 3) the distribution of tasks within the work groups.

The teachers were not given specific instructions on how to implement the lesson as our goal was to observe teachers and pupils in an everyday teaching setting. The overarching topic of the observed lessons were seasonal food and vegetables with a specific focus on root vegetables. Learning outcomes for the lesson were tasting and seasoning of foods, use of proper cooking equipment and techniques, and maintaining food hygiene and clean work areas during cooking. Each work group made one soup, either a Jerusalem artichoke soup with bacon or a creamed pumpkin soup with roasted pumpkin seeds. Half of the groups made whole grain bread rolls as a side dish for the soup, and the other half of the groups made a crumble pie with apple or frozen berries. Selection of learning outcomes, dishes and recipes was done in advance by the teachers. The kitchen lessons were scheduled to last 120 minutes but varied somewhat depending on the length of the breaks between the lessons that were often included in the kitchen lessons.

During the session, observational notes were taken on the abovementioned focus areas using a changing observational role, where first a nonparticipant observer role was assumed, followed by a role as a participant observer to attain further information (Creswell et al., 2021, p. 246). What pupils and teachers were doing and not doing, as well as descriptions of situations and timing of events, were noted. The pupils and teachers knew that the researcher was present but were not informed on the research question or observational points. The observational data was collected by three researchers throughout one week of lessons, and one researcher was present in each kitchen at a time. During the first part of the lesson, which included the teacher instructions and the initial phase of food preparation, the observer placed herself on a chair in the back of the classroom where it was both possible to get an overview of the teaching kitchen, and to observe the work groups that were placed on the nearby kitchen stations. When the pupils started their practical work in the smaller work groups, the observer moved around to listen to pupil-pupil or pupil-teacher conversations, while attempting to not influence teachers' and pupils' behaviour. Notes from these conversations were written down consecutively, and as precisely as possible without including any personally identifying information. Following the first day of observation, notes were compared to ensure a similar level of detail in the data. Observation notes were then transferred to digital format without alterations but with sentences and abbreviations written in complete and in comprehensible text.

In addition to collecting the observational data, interviews with pupils that had delivered a parental consent note were performed during the lessons. In total 11 interviews with 14 pupils were performed. All interviews were performed while the pupils worked in their work groups, and some of the interviews was conducted as a group conversation where two pupils talked with the researcher together. The interviews intended to explore the pupils' general knowledge and understanding of the term "pupil participation", as well as their perception of degree of pupil participation in the subject. During the interviews, we used a semi-structured approach with some pre-decided questions, and some follow up questions depending on the pupils' answers. All pupils were asked the following questions: 1) Have you heard of pupil participation? If "Yes", the pupil was asked to elaborate, if "No" the pupil was given a short explanation by the researcher, 2) How do you feel that pupil participation is practiced in this subject? Do you feel that the pupils have an influence on how the subject is taught? If so, which parts of the subject do you get to influence (if needed the following examples were mentioned: planning of the lessons, selecting the dishes, deciding recipes and/or cooking procedures, taste adjustments and experimenting in cooking, distributing work tasks between pupils, assessment). As mentioned above, the researchers knew that both dishes and recipes were pre-decided by the main teacher in the lessons we observed, and we therefore also asked the pupils to provide their opinion about this. All interviews were transcribed by the researcher who performed them.

Analyses of observational data and interviews

All qualitative data was analysed using a deductive, pre-defined template of codes approach (Crabtree & Miller, 1999). First, all observational- and interview data was combined in a digital document, and one researcher read through the full material several times. Thereafter, the different segments of information from the observations were sorted under the labels 1) pupil engagement and -independence during the cooking, 2) teacher involvement/interference in problem solving relating to the cooking and 3) the distribution of tasks within the work groups. Then the interview data was sorted according to the eight abovementioned categories of pupil participation (shaping the academic content, selecting ingredients and dishes, purchasing and calculating costs of ingredients, preparation for cooking, cooking, distribution of tasks, meal situation, and assessment). In addition, we included a 9th category, that included the pupils' response on the specific question about their familiarity with the concept "pupil participation". As outlined above, the purpose of the observations and interviews was to refine and extend the quantitative findings according to the explanatory sequential mixed methods approach applied in this study (Creswell et al., 2021, p. 603). Observations and quotes that could be used to

supplement and provide a better understanding of the findings from the quantitative survey was marked in red colour. Finally, results of the qualitative analyses were presented for the two other researchers and discussed in light of the objective of the study. The final selection of which observations and quotes to include in the current paper was determined by means of a structured group discussion.

Results

An overview of the findings from the survey is provided in table 1 and below follows a presentation of both quantitative and qualitative results for pupil participation in 1) shaping the academic content, 2) selecting ingredients and dishes, 3) purchasing and calculating costs of ingredients, 4) preparation for cooking, 5) cooking, 6) distributing tasks, 7) meal situation, and 8) assessment. Finally, the results from the interviews about the pupils' understanding of the term pupil participation (not related to specific parts of the subject) are presented.

Pupil participation in shaping the academic content

As shown in table 1, mean score (SD) of involvement in the planning of the academic content of the lessons was 1.5 (0.9), finding information or literature on relevant topics 2.1 (1.2) and suggesting how to work on a learning objective 1.9 (1.1), indicating on average a low degree of pupil participation in shaping the academic content. Observations and interviews were performed in a practical lesson with focus on cooking. Both the topic and the learning objectives in this lesson was pre-determined by the teachers. In the interviews, several pupils mentioned that they would like to contribute more to making decisions in the subject, but none of the pupils expressed a desire to participate in shaping the academic content.

Pupil participation in selecting ingredients and dishes, purchasing and calculating costs, and preparing for cooking

Pupils reported a low degree of participation in the planning of the practical lessons regarding choosing which ingredients to use 2.0 (1.1) and dishes to make 1.9 (1.0) (Table 1). A low degree of pupil participation was also reported for involvement in calculating costs of ingredients 1.6 (1.1) and purchasing the food 1.3 (0.9). In preparing for the cooking lesson, making available the required ingredients for the cooking lesson had a mean score (SD) of 1.7 (1.1), while the mean score for finding information on how a dish is prepared was 2.7 (1.2) indicating a low and medium degree of pupil participation, respectively.

The indication of a relatively low degree of pupil participation in planning, purchasing, and preparing for cooking was further strengthened by the observational data. All the 8 kitchen groups made the same dishes, and as mentioned above, these were pre-determined by the main teacher. When the pupils entered the classroom, the ingredients for the dishes were already made available in front of the teacher's desk. All the four teachers opened the lesson with repeating some of the content from the last weeks theoretical lesson by asking several repetition questions to the class. After repeating some of the theoretical content from last week's Food and Health lesson, all four teachers gave a relatively detailed step-by-step presentation of the method described in the recipes. Two of the teachers referred to the topic for the lesson (seasonal foods and root vegetables) and underlined that there was a connection between the topic and today's recipes, while this was not done by the two others. One of the teachers underlined in which order the pupils should do the different activities (e. g. make the bread dough before frying the bacon). All the teachers asked questions to the class during the presentation of the recipes (e. g. what does it mean that a soup is "creamed"? Does anyone know what this is? (Jerusalem artichoke), How do we peel it? (Jerusalem artichoke), How do we roast pumpkin seeds?). The teachers opening of the lesson lasted for up to 25 minutes (total length of the kitchen lesson was 120 minutes). Despite this, most of the kitchen groups had many questions about the recipes that the teacher had just presented to them when they started the practical work.

In the interviews, about half of the pupils expressed a desire to participate more in making decisions regarding selection of dishes and recipes. The pupils' motivation for increased participation could be categorised into three topics, namely 1) own taste preferences; "I want to participate in making decisions on selecting recipes because then it would have been stuff (dishes) that we actually wanted to make", 2) collaboration; "It would have been really fun (selecting recipes), maybe as a class we could find a recipe together and then we could make it", and 3) progression in learning; "I hope we get to decide more when we gain more experience in the subject.." The same pupil said that "I think it's good at the start (that the teacher decides recipes and dishes), then we get some help. We learn a lot that I might not have thought of, for example I hadn't thought of making pumpkin soup". One pupil seemed to prefer a mixed approach and said that it "sometimes would have been nice to participate in selecting dishes, because it could make it more engaging". On the other hand, there were also some of the pupils that preferred that the teacher selected recipes and dishes, and for example, one pupil said that she liked to get a recipe handed out, "because then I can just follow it", and another said that "I think it's quite good actually (that the teacher decides), because you learn quite well, when she (the teacher) chooses it, she tells a little about how to make it, and then it's much easier to start."

Pupil participation in cooking, distributing tasks and meal situation

Reported degree of pupil participation during the practical cooking lesson varied for different tasks. For the statement on experimenting during the practical cooking lesson, the mean score (SD) was 2.9 (1.2), which was nearly similar to "we can make our own variations to different dishes", with a mean score of 2.7 (1.2), both indicating a medium degree of pupil participation. During the opening of the lesson, all four teachers encouraged the pupils to taste and add seasoning to the food to make their own personal adjustments. Teacher 1 said that the recipes were just meant to be a starting point, teacher 2 actively encouraged the pupils to be creative with their use of seasoning, teacher 3 encouraged the pupils to go to the pantry and find additional seasoning and teacher 4 said that the pupils should season the soup, but taste along the way so that it wouldn't be too much (too spicy).

One of the groups came up with the idea of adding the fat that was left from frying the bacon to the Jerusalem artichoke soup and asked the teacher if that was okay (which she confirmed). Several of the working groups repeatedly asked the teacher to come by and check if they were "doing it right". One of the teachers walked around and reminded the pupils of things they might have forgotten (e.g. remember to turn on the oven, remember to peal the Jerusalem artichoke, be careful not to burn the onion). Overall, the observational data indicated that many of the pupils appeared to be concerned about making mistakes. As mentioned in the previous section, the pupils had many questions about the recipes that the teacher had already presented during the opening of the lesson. Two of the teachers answered most of these questions with a new question (Example 1: Pupil: "Are we going to use a pie pan?", Teacher: "What does the recipe say?" Example 2: Pupil: "How much berries should I use?" Teacher: "How much do you think you need?"), while one of the other teachers mainly gave direct answers to the pupils' questions.

Interestingly, the mean score (SD) for distributing work tasks within the group was 4.1 (1.2), indicating a high degree of pupil participation, while the score for determining work tasks of each individual pupil was 3.1 (1.4), indicating a medium degree of pupil participation. This discrepancy was further explored during observation and interviews. Three of the teachers decided which of the pre-decided dishes the work groups should make, while the last teacher conducted a raffle to decide what dish each group should make. Independent of the way that the teachers distributed the dishes there were some dissatisfactions and protests from the pupils, but it resolved as soon as they started to work on their stations. Furthermore, observations revealed that the teachers used a number system in the class where specific tasks

belonged to the number. For example, number 1 had responsibility for washing the dishes, number 2 dried the dishes and put it back in place and number 3 set the table. The number that each pupil was assigned rotated from week to week. As for the other tasks that needed to be done, the pupils self-distributed them within the work group. For some groups, the teacher redistributed tasks about halfway through the lesson because the group struggled to finish in time. In the interviews, one of the pupils explained that the number system assigns different tasks to the pupils "…such as washing dishes, and yes, we have a list of what we have to do, setting the table, and different things", further, the same pupil said that "when we prepare the food it's more like we can choose who does what."

The pupils reported on average a high degree of pupil participation regarding how to set the table 4.2 (1.1) and what to talk about during the meal 4.2 (1.0). Observations revealed that setting the table was a task that was often done "in a hurry", and the groups chose a set up with plate, knife, fork, spoon and a glass, and some groups included a mug of water. One of the pupils sets the table with flat plates before the teacher reminded him that today's dish was soup, and that a soup plate therefore was more suitable. Similarly, another group had forgotten the cutlery and got a reminder of that by the teacher. The dishes were most commonly served directly from the pot. One teacher encouraged the pupils to plate their dish in a nice way and present it to the teacher before they started to eat. All the work groups in this kitchen made a nicely arranged plate for their teacher but did not put the same effort in the plating for themselves. The same teacher encouraged the pupils to put the tables together and make a long table. This encouragement was followed in one of the kitchen-groups. All four teacher encouraged their pupils to taste all dishes, and most of the pupils followed this encouragement. During the meal, two of the teachers walked around and tasted small samples of all dishes, one teacher sat at the table and ate together with the pupils and the fourth teacher sat in front of the classroom at the teacher desk. During the meal, the teachers also gave feedback on the dishes, and this is further described in the next section.

Pupil participation in assessment

In the survey data, pupil participation in the assessment phase was measured for both self- and peer-assessment. When the pupils were asked about their participation in discussing what went well and did not go well during a session the mean score (SD) was 3.2 (1.3), while regarding self-assessment the mean score was 2.8 (1.2), indicating a medium degree of pupil participation. For peer-assessment the mean score was 2.3 (1.3), indicating a relatively low degree of pupil participation.

During the meal, the observations revealed that all teachers commented on the result and provided feedback on what was good and what could be improved. All teachers praised both the pupils work and the result, and the pupils seemed proud of their dishes. One of the groups were eager to know which soup the teacher liked the best, but the teacher did not give a concrete answer to this question, and said that all soups were different, but good. Overall, the assessment in the lessons that we observed were given from teachers to pupils, but one of the interviews revealed that assessment practices vary from lesson to lesson. Only one pupil talked particularly about assessment, but this pupil told the interviewer that earlier in the semester the pupils made buns, and then they used peer-assessment to evaluate the result. In this lesson, the pupils got a taste sample of different buns without knowing who made it, and then they had to write down what they thought. The interviewer asked the pupil what she thought of this assessment practice and the pupil said that: "It's quite good actually, because then you sort of get other people's opinions, and not just the teacher's opinions."

Table 1 Pupils self-reported degree of pupil participation in the Food and Health subject. The score ranges from 1 = Never to 5 = Always[1].

	Mean	*SD*	DNU[2] (n)
Shaping the academic content (n = 120)			
Involved in planning the academic content of the lessons	1.5	0.9	6
Finding information or literature on relevant topics	2.1	1.2	8
Suggesting how to work on a learning objective	1.9	1.1	6
Selecting ingredients and dishes (n = 120)			
Planning which ingredients to use	2.0	1.1	3
Planning which dishes to prepare	1.9	1.0	5
Purchasing and calculating costs (n = 120)			
Purchasing the ingredients before the lesson	1.3	0.9	3
Planning the budget and calculating the cost of the ingredients for the lesson	1.6	1.1	3
Preparation for cooking (n = 120)			
Making available the ingredients for the practical cooking lesson (from storage)	1.7	1.1	4
Finding information on how a dish is prepared	2.7	1.2	4
Cooking (n = 120)			
Experimenting during the practical cooking lesson	2.9	1.2	7
Making personal variations («their own twist») to the dishes	2.7	1.2	2
Distribution of tasks (n = 120)			
Distributing work tasks within the group	4.1	1.2	3
Determining work tasks of each individual pupil	3.1	1.4	3
Meal situation (n = 120)			
Deciding how to set the table before eating the meal	4.2	1.1	2
Deciding what to talk about during the meal	4.2	1.0	3
Assessment (n = 119)			
Discussing what went well and did not go well during a lesson	3.2	1.3	8
Assessing their own effort after the lesson	2.8	1.2	10
Assessing each other's effort after the lesson	2.3	1.3	8

[1]Pupils' responses on the 5-point Likert scales are presented as means and standard deviations. Scores 1.0-2.4 were considered as low degree of pupil participation, scores 2.5-3.4 as medium degree of pupil participation, and scores 3.5-5.0 as high degree of pupil participation.

[2]Did not understand the question

Pupils' understanding of the term pupil participation

Pupils' understanding of the term pupil participation were not measured in the quantitative survey but was explored during the interviews. Of the 14 pupils that we interviewed, 3 said that they had heard of the term pupil participation before, of which two of them said that they had heard of it but did not know what it meant, and the third thought that it meant to be influenced by the other pupils. In the interviews, the pupils were also asked about their general perception of degree of pupil participation in the Food and Health subject. The results were divided. Many of the pupils felt that they could influence some decisions in the subject and many also expressed that the degree of pupil participation was appropriate. One pupil said that "I think it is good that we get to decide a bit, and that the teacher decides the rest", while another pupil said that "I think that if the pupils get to decide, it is very fun, but in most cases, I guess it is smarter if the teacher decides. But at the same time, it is something that we could do every now and then (contribute to make decisions)". The same pupil also said that "I understand that the teachers must decide because they know what is smart, but the pupils could maybe vote on what to make, perhaps that would have created a little more engagement." Other pupils felt that they had some influence, but desired more. In example, one pupil said that "Yes, I feel that we get listened to, but maybe not as much as we would like". The pupils who desired a higher degree of pupil participation mainly did not define how and what they wanted to co-decide, and those who did, focused on being more involved in selecting dishes and recipes.

Discussion

The objective of the current study was to investigate how pupil participation is practiced in the Norwegian school subject Food and Health at lower secondary school level. The pupils' own perception of pupil participation was highlighted in this paper. Our results indicate that the degree of pupil participation is low for shaping the academic content, practical planning, purchasing and preparation for cooking. The degree of pupil participation in cooking and meal situations varied for different tasks, with a medium to low degree for experimenting in cooking and making their own variations to recipes and dishes, a medium to high degree for distributing work tasks and a high degree for the meal situation. For self- and peer assessment, survey results indicated a low to medium degree of pupil participation, and interviews revealed that how assessment was practiced varied from lesson to lesson. Overall, our results indicate that pupil participation is not practiced according to the guidelines in the educational program, a finding that coincides with previous research (Bernard et al., 2019; Jones, 2017; Norwegian Ministry of Education and Research, 2017; Øvrebø, 2019; Aadland & Wergedahl, 2022).

In Norwegian schools, the Food and Health subject has a total of 83 hours at lower secondary school level (Norwegian Directorate of Education and Training, n.d.). Despite the relatively limited time resource, the subject has a large number of learning objectives, and is considered important in conveying life skills necessary for future food choices that are both health promoting and sustainable (Torheim et al., 2020). To reach these lofty goals is challenging with a limited number of teaching hours, but based on our results, there might be reason to consider if small changes to the traditional teaching approaches can make better use of the time available in this subject. For example, the quantitative findings in the current study show a low degree of pupil participation for finding information on how a dish is prepared. This was supported by the observational data, where we found that all four teachers used substantial amounts of time on presenting the recipes in the beginning of the lesson. Despite the thorough presentation of the recipes, the pupils had several questions about the information they recently received when they started to work in their groups, indicating that they had a low level of engagement during the theoretical part of the lesson. It has been demonstrated that level of engagement is important for students' learning and academic success (Fredricks et al., 2004), and that pupil autonomy is considered particularly important for successful learning

processes (Wallace et al., 2014). Autonomy-supportive teaching practices can increase students' interest (Tsai et al., 2008), as well as their intrinsic motivation and perceived competence (Deci et al., 1981; Ryan & Grolnick, 1986). Thus, it is possible that an alternative approach where pupils are guided towards own responsibility, by reading the recipes and finding information on how the dishes should be prepared, could be both more time-effective and in line with increased pupil participation.

An increased degree of pupil participation does not imply that the pupils should make all decisions in the subject, and a study investigating classroom teaching from Sweden and the US demonstrated that both teacher content control and student participation are needed to achieve successful teacher-student interactions (Emanuelsson & Sahlström, 2008). This indicates that mastering the balance between sufficient content control and facilitation of pupil autonomy is crucial for successful implementation of pupil participation. Also, as previous research indicate that the Food and Health subject has a top-down approach where the teacher "owns" the academic content by controlling and regulating the lessons (Aadland & Wergedahl, 2022), more research is needed showing why this is prevalent, and how to facilitate a more autonomy supportive teaching style. Furthermore, previous research has found that with limited time available in the subject, teachers often prioritize practical cooking lessons above theoretical lessons (Beinert et al., 2020). To address the limited time available to theoretical topics and learning objectives in the Food and Health subject, the teachers could challenge the pupils and give them more responsibilities throughout the entire learning process, including being involved in planning and designing the theoretical lessons. This approach to the subject is supported in a study by Beinert et al., (2021), who found that pupils perceive participation in planning, purchasing and preparation for cooking as valuable tasks in the Food and Health-subject.

In the interviews, about half of the pupils expressed that the current degree of pupil participation in the Food and Health subject was appropriate. The perception that "the teacher knows best" was a recurring theme in the interviews, and many of the pupils seemed to have a limited belief in their own ability to contribute to shaping the subject. Similarly, several of the work groups repeatedly asked their teacher to come by and check if they were "doing it right", a finding that indicates that the pupils seem to be afraid of making mistakes and trust their ability to make their own decisions. This finding is in line with previous research demonstrating that following the recipe correctly is frequently the focus in the Food and Health subject (Beinert et al., 2020; Lassen & Hjälmeskog, 2021; Veka et al., 2018), which may contribute to making the pupils apprehensive about experimenting. Lassen (2021) has discussed the apparent contradiction in teaching practices where a large emphasis on following the recipe is combined with opposing feedback regarding the importance of experimentation, the low importance of using the correct ingredients, and general answers to questions concerning the receipt. Despite a lack of result-focus in the sections on assessment in the Norwegian Food and Health curriculum (Norwegian Ministry of Education and Research, 2019), the observational data in the current study revealed that the pupils are evaluated based on the quality of their product. Thus, it is reasonable to assume, that pupils are worried that making mistakes would negatively impact their grades, and therefore, following the recipe instead of experimenting in cooking might be a coping strategy to increase the chance of a successful result.

Results from the current study indicate that pupil participation in assessment in Food and Health varies from lesson to lesson, with a general perception of a low to medium degree of pupil participation. Self- and peer assessment are founded on pupil's self-awareness, ownership and responsibility of their own learning (Sebba et al., 2008). Furthermore, pupil participation in self- and peer assessment is one approach to practice the 21st century skill critical thinking, and as summarized in a report by Sebba et al (2008), previous studies emphasize the need to teach the pupils the skills of self-assessment and skills required to work with others if peer

assessment is to be further developed. Teaching practices directed towards increasing assessment skills were not uncovered in the current study and a low level of awareness about assessment may partly explain why some pupils reported a low degree of participation in assessment.

The sample of the current study is relatively small and includes only one school. Although we consider the mixed method approach with data from two academic years to be a strength, our results should be interpreted with care until replicated in future studies. Also, the current study focuses on pupil participation from the pupils' perspective only, and future studies should aim to shed light on how the teachers perceive that pupil participation is and should be practiced in the Food and Health subject.

Concluding remarks

Overall, the findings of the current study indicate that pupil participation is not practiced to the extent that the Norwegian educational program requires. As the concept of pupil participation is a recently increased focus of the curriculum, it is likely that teachers have not yet internalized this aspect of the reform, and that tools and teaching methods that will promote pupil autonomy through increased pupil participation are not yet fully enrolled in the school system (Assor et al., 2009). Naturally, including pupils in shaping the academic content and practical planning and preparation work requires practice. This is not something that the Food and Health subject alone should focus on, but in line with the curriculum, it should be implemented across all subjects (Norwegian Ministry of Education and Research, 2017; NOU 2015: 8, 2015). Furthermore, it is also likely that the pupils themselves do not know what a high degree of pupil participation entails, as they are simply not used to it. This aspect, combined with our results, indicate that there is a need to increase the knowledge and use of teaching methods that support pupil autonomy and pupil participation across school subjects. This will give pupils the opportunity to increase their competence and participate in decisions that are important for their academic and social development.

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Appendix

Overview of Questions Included in the Survey "I mat- og helsefaget… / In the Food and Health Subject…"

Original questions (norwegian)	Original questions translated (english)	Questions Table 1
Utforming av faglig innhold	Shaping the academic content	Shaping the academic content
er vi med på å planlegge det faglige innholdet i undervisningen	we are involved in planning the academic content of the lessons	Involved in planning the academic content of the lessons
er vi med på å finne informasjon eller fagstoff om ulike tema som vi arbeider med	we are involved in finding information or literature on different topics we are working on	Finding information or literature on relevant topics
får vi komme med forslag til hvordan vi kan jobbe med et kompetansemål / læringsmål	we are allowed to suggest how to work on a learning objective	Suggesting how to work on a learning objective
Praktisk planlegging	**Practical planning**	**Selecting ingredients and dishes**
er vi med på å planlegge hvilke råvarer vi skal bruke	we are involved in the planning of which ingredients we will use	Planning which ingredients to use
er vi med på å planlegge hvilke matretter vi skal lage	we are involved in planning which dishes we will prepare	Planning which dishes to prepare
Innkjøp og budsjett	**Purchasing and calculating costs**	**Purchasing and calculating costs**
er vi med i butikken for å handle inn matvarer før undervisningen	we are involved in purchasing the ingredients before the lesson	Purchasing the ingredients before the lesson
er vi med på å sette opp budsjett og må finne ut hva matvarene vi bruker i undervisningen koster	we are involved in budget and determining the cost of the ingredients we use in the lesson	Planning the budget and calculating the cost of the ingredients for the lesson
Før matlaging	**Preparation for cooking**	**Preparation for cooking**
setter læreren frem råvarene vi skal bruke i den praktiske matlagingen (r)	the teacher displays the ingredients for the practical cooking session (r)	Making available the ingredients for the practical cooking lesson (from storage)
finner vi selv informasjon om hvordan en matrett skal lages	we find the information about how a dish is prepared	Finding information on how a dish is prepared
Under matlaging	**Cooking**	**Cooking**
prøver vi oss frem i den praktiske matlagingen	we experiment during the practical cooking lesson	Experimenting during the practical cooking lesson
får vi lage vår egen vri på ulike matretter	we can make our own twist to different dishes	Making personal variations ("their own twist") to the dishes
Fordeling av arbeidsoppgaver	**Distribution of tasks**	**Distribution of tasks**
fordeler vi selv arbeidsoppgavene mellom oss	we distribute work task within the group ourselves	Distributing work tasks within the group
bestemmer læreren hvilke arbeidsoppgaver hver elev skal ha (r)	the teacher determines the work tasks of the pupils (r)	Determining work tasks of each individual pupil

Original questions (norwegian)	Original questions translated (english)	Questions Table 1
Under måltidet	**Meal situation**	**Meal situation**
bestemmer vi selv hvordan vi skal dekke bordet når vi skal spise maten vi har laget	we decide how to set the table when we are eating the meal	Deciding how to set the table before eating the meal
bestemmer vi selv hva vi skal snakke om under måltidet	we decide what to talk about during the meal	Deciding what to talk about during the meal
Vurdering	**Assessment**	**Assessment**
pleier vi å snakke om hva som har gått bra og hva som har gått dårlig i løpet av undervisningsøkten	we discuss what went well and what did not go well during the lesson	Discussing what went well and did not go well during a lesson
vurderer vi vår egen innsats i timene	we assess our own effort after the lessons	Assessing their own effort after the lesson
vurderer vi hverandre sin innsats i timene	we assess each other's effort after the lessons	Assessing each other's effort after the lesson

(r): Reverse. The questions are reversed in order to fit the score from low to high degree of pupil participation.